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**REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT  
BARABOO, WISCONSIN**

SECURITY INFORMATION

**FINAL  
REMEDIAL INVESTIGATION REPORT  
APPENDIX  
DATA ITEM A009**

**APPENDICES G THROUGH J  
VOLUME 3 OF 7**

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JUN 13 1994**  
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**UNITED STATES ARMY  
TOXIC AND HAZARDOUS MATERIALS AGENCY  
ABERDEEN PROVING GROUND, MARYLAND**

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REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

APPENDICES

APPENDIX A	-	LOCATION-SPECIFIC AND CHEMICAL-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS	Vol. 1
APPENDIX B	-	SOIL VAPOR SURVEY	Vol. 1
APPENDIX C	-	SURFACE GEOPHYSICAL SURVEY	Vol. 1
APPENDIX D	-	DRILLING AND SOIL SAMPLING PROGRAM	Vol. 1
		D.1 Test Pit, Soil Boring, and Monitoring Wells Boring Logs	Vol. 1
		D.2 Field Data Records - Soil, Sediments, and Surface Water	Vol. 2
		D.3 Monitoring Well Construction Diagrams	Vol. 2
		D.4 Well Development Records	Vol. 2
		D.5 Regional Water Supply Well Logs	Vol. 2
APPENDIX E	-	BOREHOLE GEOPHYSICAL SURVEY	Vol. 2
APPENDIX F	-	HORIZONTAL AND VERTICAL SURVEY	Vol. 2
APPENDIX G	-	GROUNDWATER ELEVATIONS AND FIELD DATA RECORDS	Vol. 3
		G.1 Groundwater Elevation Data	Vol. 3
		G.2 Field Data Records - Round I and II	Vol. 3
		G.3 Field Data Records - Round One	Vol. 3
		G.4 Field Data Records - Round Two	Vol. 3
		G.5 Field Data Records - BAAP Production Well No. 2	Vol. 3
APPENDIX H	-	HYDROGEOLOGIC DATA	Vol. 3
		H.1 Recharge Estimates	Vol. 3
		H.2 Gradient Calculations	Vol. 3
		H.3 Velocity Calculations	Vol. 3
		H.4 Preliminary Aquifer Test Results IRM	Vol. 3
		H.5 High Capacity Well Survey	Vol. 3
		H.6 Production Well No. 4 Zone-of-Influence	Vol. 3
APPENDIX I	-	HYDRAULIC CONDUCTIVITY TEST RESULTS	Vol. 3
APPENDIX J	-	AQUIFER TESTING AND MODELING	Vol. 3
		J.1 Aquifer Pumping Test	Vol. 3
		J.2 Regional Groundwater Flow Model	Vol. 3
		J.3 Propellant Burning Ground Groundwater Flow Model	Vol. 3

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

APPENDICES

(continued)

Accession For	
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DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
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A-1	

APPENDIX K -	CHEMICAL DATA TABLES	Vol. 4
	K.1 Flagging Codes for Chemical Data Tables	Vol. 4
	K.2 Soil Data - Surface, Subsurface, and Sediment	Vol. 4
	K.3 Surface Water Data	Vol. 4
	K.4 Groundwater Data - Round I (September 1990) and Round II (October 1990)	Vol. 4
	K.5 Groundwater Data - Round One (November/ December 1991) and Round Two (April/May 1992)	Vol. 5
APPENDIX L -	DATA QUALITY REPORT	Vol. 6
	L.1 BAAP Production Well No. 2 Water Quality Assessment	Vol. 6
	L.2 USATHAMA-certified Analytical Methods	Vol. 6
	L.3 Laboratory Quality Control Data	Vol. 6
	L.4 Summary of Nontarget, Library Searched Compounds Detected in RI Analytical Program	Vol. 6
	L.5 USATHAMA-approved Laboratory Control Charts	Vol. 6
	L.6 ABB-ES Groundwater Screening Results	Vol. 6
	L.7 Selection of Analytical Results In the Case of More Than One Analytical Method	Vol. 6
	L.8 USATHAMA/USEPA Split Groundwater Samples	Vol. 6
APPENDIX M -	CALCULATIONS FOR PARAMETERS USED IN RISK ASSESSMENT	Vol. 7
APPENDIX N -	IRIS FILES FOR COMPOUNDS OF POTENTIAL CONCERN	Vol. 7
APPENDIX O -	HUMAN HEALTH RISK CALCULATIONS	Vol. 7
APPENDIX P -	INVENTORY OF SITE SPECIES	Vol. 7
APPENDIX Q -	EXPOSURE PARAMETERS OF SITE SPECIES	Vol. 7
APPENDIX R -	ECOLOGICAL RISK CALCULATIONS	Vol. 7

**APPENDIX G**

**GROUNDWATER ELEVATIONS AND FIELD DATA RECORDS**

- G.1 Groundwater Elevation Data**
- G.2 Field Data Records - Round I and II**
- G.3 Field Data Records - Round One**
- G.4 Field Data Records - Round Two**
- G.5 Field Data Records - BAAP  
Production Well No. 2**

**Appendix G.1**  
**Groundwater Elevation Data**

TABLE G-1  
GROUNDWATER ELEVATION DATA

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL DESIGNATION	RISER ELEV. FEET/MSL	3/14/89		10/25/89		12/13/89		6/15/90		10/22/90		12/15/91		4/7/92	
		WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.
<b>LANDFILL #1</b>															
LOM-91-01	917.51											144.69	772.82	144.60	772.91
LOM-91-02	912.30											138.61	773.69	138.50	773.80
LOM-89-01	917.86	142.71	775.15	143.58	774.28	144.00	773.86					146.12	771.74	146.04	771.82
LOM-89-02A	920.59	145.67	774.92	148.75	771.84	146.94	773.65					149.24	771.35	149.17	771.42
LOM-89-02B	921.13	146.17	774.96	146.46	774.67	146.76	774.37			149.26	771.87	149.74	771.39	149.69	771.44
LOM-89-03A	922.14	147.49	774.65	148.54	773.60	148.89	773.25					151.03	771.11	150.96	771.18
LOM-89-03B	921.99	147.14	774.85	148.20	773.79	148.49	773.50			150.03	771.96	150.66	771.33	150.59	771.40
<b>PROPELLANT BURNING GROUND</b>															
PNB-91-06C	848.29											82.87	765.42	83.00	765.29
PNB-91-06D	847.50											82.06	765.44	82.19	765.31
PNB-91-12C	854.42											90.15	764.27	90.15	764.27
PNB-91-12D	853.29											89.07	764.22	89.05	764.24
PNB-91-01B	850.53											84.95	765.58	85.17	765.36
PNB-91-01C	850.53											84.94	765.59	85.15	765.38
PNB-91-01D	850.53											84.95	765.58	85.19	765.34
PNB-91-02B	850.09											84.43	765.66	84.60	765.49
PNB-91-02C	850.09											84.40	765.69	84.61	765.48
PNB-91-02D	850.09											84.43	765.66	84.69	765.40
PNB-89-01B	872.33	100.39	771.94	101.36	770.97	101.79	770.54					104.02	768.31	103.94	768.39
PNB-89-01C	878.06	106.00	772.06	107.09	770.97	107.47	770.59					109.64	768.42	109.56	768.50
PNB-89-01D	874.05	102.14	771.91	103.03	771.02	103.42	770.63			105.08	768.97	105.62	768.43	105.55	768.50
PNB-89-02B	900.25	129.23	771.02	130.36	769.89	130.75	769.50					133.00	767.25	132.91	767.34
PNB-89-02C	897.04	125.71	771.33	126.89	770.15	124.32	772.72			128.92	768.12	129.52	767.52	129.42	767.62
PNB-89-03B	847.08	75.93	771.15	76.95	770.13	76.28	770.80					79.49	767.59	79.42	767.66
PNB-89-03C	846.87	74.83	772.04	76.02	770.85	76.38	770.49			78.05	768.82	78.60	768.27	78.52	768.35
PNB-89-04B	859.23	89.40	769.83	90.89	768.34	91.07	768.16			92.69	766.54	92.96	766.27	93.08	766.15
PNB-89-04C	859.70	92.20	767.50	91.70	768.00					93.56	766.14	92.90	766.80	94.03	765.67
PNB-89-05	855.58	83.79	771.79	84.92	770.66							87.55	768.03	87.47	768.11
PNB-89-06	866.37	114.45	771.92	115.45	770.92	115.83	770.54					117.98	768.39	117.87	768.50
PNB-89-07	849.36	79.73	769.63	80.99	768.37	81.21	768.15					96.87	752.49 #	83.42	766.04
PNB-89-08	868.56	119.00	769.56	102.15	786.41 #	120.57	767.99					122.46	766.10	122.48	766.08
PNB-89-09	861.48	107.70	775.78	108.81	774.67	109.12	774.36					111.31	772.17	111.20	772.28

Notes are presented at the end of this table.

TABLE G-1  
GROUNDWATER ELEVATION DATA

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL DESIGNATION	RISER ELEV. FEET MSL	WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER	
		DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.
PBN-89-10A	889.65	115.38	774.27	1025/89	773.15	116.81	772.84	117.67	771.98	118.59	771.06	119.04	770.61	119.08	770.57	119.08	770.57	47/92	47/92
PBN-89-10B	891.81	117.70	774.11	118.70	773.11	119.07	772.74					121.26	770.55	121.27	770.54				
PBN-89-10C	887.00	112.50	774.50	113.57	773.43	113.91	773.09					116.11	770.89	116.14	770.86				
PBN-89-10D	884.25	110.00	774.25	111.06	773.19	111.38	772.87			113.14	771.11	113.62	770.63	113.66	770.59				
PBN-89-11	884.41	106.73	777.68	108.00	776.41	108.32	776.09	109.20	775.21	109.98	774.43	110.51	773.90	110.37	774.04				
PBN-89-12A	855.66	87.25	768.41	89.33	766.33	89.46	766.20					91.23	764.43	91.32	764.34				
PBN-89-12B	856.04	88.54	767.50	89.85	766.19	90.12	765.92					91.71	764.33	91.85	764.19				
PBM-85-01	862.47	89.80	772.67	90.86	771.61	91.21	771.26					93.58	768.89	93.56	768.91				
PBM-85-02	849.16	77.00	772.16	78.24	770.92	78.60	770.56					80.81	768.35	80.74	768.42				
PBM-85-03	885.98	113.71	772.27	114.94	771.04	115.37	770.61					117.53	768.45	117.43	768.55				
PBM-85-04	866.65	95.22	771.43	96.65	770.00	96.78	769.87					98.87	767.78	98.87	767.78				
PBM-85-05	863.88	93.28	770.60	94.64	769.24							83.22	780.66 #	96.90	766.98				
PBM-85-06	848.12	79.34	768.78	80.86	767.26	80.81	767.31					82.79	765.33	82.88	765.24				
PBN-85-01A	874.56	102.18	772.38	103.37	771.19	103.74	770.82					105.96	768.60	105.87	768.69				
PBN-85-02A	898.79	126.45	772.34	127.68	771.11	128.09	770.70					130.23	768.56	130.16	768.63				
PBN-85-03A	851.22	79.07	772.15	80.35	770.87	80.87	770.35					82.96	768.26	82.90	768.32				
PBN-85-04A	860.36	90.24	770.12	91.59	768.77	91.72	768.64					93.75	766.61	93.86	766.50				
PBM-82-01	857.60	82.55	775.05	83.66	773.94	84.02	773.58					86.37	771.23	86.34	771.26				
PBM-82-02	873.36	98.14	775.22	99.87	773.49	99.78	773.58					102.12	771.24	102.20	771.16				
PBM-82-03	864.73	90.68	774.05	91.87	772.86	92.22	772.51					94.45	770.28	94.46	770.27				
PBM-82-04	871.42	97.59	773.83	98.83	772.59	99.21	772.21					101.46	769.96	101.40	770.02				
PBM-82-05	876.92	103.09	773.83	104.34	772.58	104.67	772.25					106.87	770.05	106.85	770.07				
PBN-82-01A	884.38	106.35	776.03	109.55	774.83	110.00	774.38					112.16	772.22	112.11	772.27				
PBN-82-01B	883.57	107.54	776.03	108.92	774.75	109.14	774.43					111.33	772.24	111.10	772.47				
PBN-82-01C	883.77	107.72	776.05	109.03	774.74	109.34	774.43					111.51	772.26	111.42	772.35				
PBN-82-02A	885.14	110.00	775.14	111.22	773.92	111.60	773.54					113.75	771.39	113.75	771.39				
PBN-82-02B	884.99	109.67	775.32	110.98	774.01	111.26	773.73					113.48	771.51	113.49	771.50				
PBN-82-02C	885.28	108.50	776.78	111.30	773.98	111.66	773.62					113.83	771.45	113.81	771.47				
PBN-82-03A	859.94	86.58	773.36	87.71	772.23	88.11	771.83					90.35	769.59	90.23	769.71				
PBN-82-03B	860.16	86.69	773.47	87.98	772.18	88.31	771.85					90.56	769.60	90.48	769.68				
PBN-82-03C	860.06	86.63	773.43	87.91	772.15	88.21	771.85					90.47	769.59	90.36	769.70				
PBN-82-04A	874.74	101.71	773.03	102.87	771.87	103.28	771.46					105.55	769.19	105.41	769.33				
PBN-82-04B	874.58	101.47	773.11	102.75	771.83	103.07	771.51					105.31	769.27	105.25	769.33				
PBN-82-04C	875.48	102.43	773.05	103.64	771.84	103.94	771.54					106.21	769.27	106.15	769.33				
PBN-82-05A	878.50	105.00	773.50	106.22	772.28	106.49	771.01					108.78	769.72	108.68	769.82				
PBN-82-05B	877.68	104.19	773.49	105.42	772.26	105.75	771.33					108.43	769.75	107.95	769.73				
PBN-82-05C	878.18	104.58	773.60	105.83	772.35	106.21	769.97												



TABLE G-1  
GROUNDWATER ELEVATION DATA

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL DESIGNATION	RISER ELEV. FEET MSL	3/14/89		10/25/89		12/13/89		6/15/90		10/22/90		12/15/91		4/7/92	
		WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.
<b>SETTLING PONDS</b>															
SPN-91-02D	824.03														
SPN-91-03D	819.36														
SPN-91-04D	802.58														
SPN-89-01C	830.04	65.11	764.93	66.41	763.63	66.53	763.51			67.63	762.41	68.18	761.86	67.99	762.05
SPN-89-02A	823.67	58.80	764.87	60.16	763.51	60.27	763.40					61.85	761.82	61.66	762.01
SPN-89-02B	823.53	58.69	764.84	59.94	763.59	60.13	763.40					61.71	761.82	61.80	761.73
SPN-89-02C	822.60	57.76	764.84	59.00	763.60	59.26	763.34					60.79	761.81	60.61	761.99
SPN-89-03B	818.09	52.87	765.22	54.23	763.86	54.36	763.73			55.48	762.61	55.91	762.18	55.75	762.34
SPN-89-03C	818.25	53.08	765.17	54.41	763.84	54.59	763.66			55.58	762.67	56.05	762.20	55.88	762.37
SPN-89-04B	804.21	38.77	765.44	40.80	763.41	41.00	763.21					42.34	761.87	42.15	762.06
SPN-89-04C	803.17	38.31	764.86	39.78	763.39	39.88	763.29					41.26	761.91	41.05	762.12
SPN-89-05A	804.25	40.00	764.25	40.53	763.72	40.79	763.46	41.00	763.25	41.22	763.03	41.58	762.67	41.37	762.88
SPN-89-05B	804.02	39.14	764.88	40.39	763.63	40.63	763.39			41.08	762.94	41.41	762.61	41.19	762.83
<b>DETERRENT BURNING GROUND/EXISTING LANDFILL</b>															
DBM-89-01	895.99	110.55	785.44	112.17	783.82	112.85	783.14					115.85	780.14	115.87	780.12
DBN-89-02A	887.10	107.89	779.21	108.65	778.45	109.04	778.06					110.06	777.04	110.14	776.96
DBN-89-02B	886.90	107.71	779.19	108.33	778.57	108.89	778.01	109.53	777.37			109.96	776.94	110.03	776.87
DBM-89-03	898.85	119.59	779.26	120.28	778.57	120.69	778.16					121.80	777.05	121.83	777.02
DBN-89-04A	919.89	136.50	783.39	137.47	782.42	137.86	782.03					139.64	780.25	139.84	780.05
DBN-89-04B	920.14	140.76	779.38	141.60	778.54	142.04	778.10	142.72	777.42			143.35	776.79	143.39	776.75
DBM-89-05	900.43	113.97	786.46	114.74	785.69	115.14	785.29					116.54	783.89	116.66	783.77
DBM-82-01	918.72	139.13	779.59	140.05	778.67	140.45	778.27					141.64	777.08	141.64	777.08
DBM-82-02	920.16	136.57	783.59	137.58	782.58	137.98	782.18					139.60	780.56	139.79	780.37
DBN-82-01B	907.80	128.14	779.66	129.10	778.70	129.44	778.36					130.74	777.06	130.72	777.08
DBN-82-01C	907.36	127.69	779.67	128.63	778.73	129.05	778.31					130.23	777.13	130.23	777.13
E1JN-91-07A	897.65											120.77	776.88	122.84	774.81
E1JN-91-07B	895.88											118.98	776.90	119.02	776.86
E1JM-91-10	923.04											145.93	777.11	146.02	777.02
E1JM-89-01	922.73	142.48	780.25	143.17	779.56	143.56	779.17					144.68	778.05	144.78	777.95
E1JN-89-02A	921.10	140.74	780.36	142.72	778.38	143.20	777.90					144.22	776.88	144.27	776.83

TABLE G-1  
GROUNDWATER ELEVATION DATA

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL DESIGNATION	RISER ELEV. FEET MSL	WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER	
		DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.
ELN-89-02B	920.19	141.88	778.31	1025.39	776.28	1213/89	777.25	6/15/90	777.25	1022/90	143.95	776.24	12/15/91	143.95	776.24	4/7/92	776.21
ELM-89-03	916.28	137.24	779.04	137.94	778.34	138.28	778.00				139.28	777.00		139.28	777.00		776.97
ELN-89-04A	926.28	147.34	778.94	147.97	778.31	148.21	778.07				149.42	776.86		149.42	776.86		776.81
ELN-89-04B	926.63	148.62	778.01	149.19	777.44	149.60	777.03				150.57	776.06		150.57	776.06		776.00
ELM-89-05	900.95	121.18	779.77	122.26	778.69	122.45	778.50				123.48	777.47		123.48	777.47		777.42
ELN-89-06B	908.22	129.59	778.63	139.47	768.75	130.58	777.64				131.49	776.73		131.49	776.73		776.65
ELM-89-07	916.19	138.11	778.08	138.67	777.52	139.02	777.17				139.97	776.22		139.97	776.22		776.18
ELM-89-16	906.04	126.93	779.11	127.72	778.32	128.03	778.01				129.07	776.97		129.07	776.97		776.92
ELM-89-09	921.79	140.16	781.63	140.80	780.99	140.94	780.85				142.58	779.21		142.58	779.21		779.00
ELN-82-01A	905.02	124.51	780.51	125.62	779.40	125.90	779.12				127.20	777.82		127.20	777.82		777.78
ELN-82-01B	904.75	124.29	780.46	125.39	779.36	126.39	778.36				126.99	777.76		126.99	777.76		777.76
ELN-82-01C	905.06	124.99	780.07	126.00	779.06	125.72	779.34	127.10	777.96		127.62	777.44		127.62	777.44		777.36
ELN-82-02A	916.00	136.19	779.81	137.37	778.63	137.55	778.45				138.61	777.39		138.61	777.39		777.42
ELN-82-02B	916.62	136.77	779.85	137.39	779.23	138.09	778.53				139.19	777.43		139.19	777.43		777.45
ELN-82-02C	916.19	136.38	779.81	137.82	778.37	137.73	778.46	138.22	777.97		138.78	777.41		138.78	777.41		777.44
ELN-82-03A	927.68	147.92	779.76	149.08	778.60	149.30	778.38				150.40	777.28		150.40	777.28		777.24
ELN-82-03B	927.45	148.11	779.34	149.00	778.45	149.32	778.13				150.34	777.11		150.34	777.11		777.05
ELN-82-03C	926.93	147.59	779.34	148.47	778.46	148.85	778.08				149.82	777.11		149.82	777.11		777.05
ELN-82-04A	923.72	141.48	782.24	143.93	779.79	144.33	779.39				145.63	778.09		145.63	778.09		777.98
ELN-82-04B	924.18	142.91	781.27	144.66	779.52	145.03	779.15				146.35	777.83		146.35	777.83		777.74
ELN-82-04C	923.73	143.65	780.08	145.00	778.73	145.38	778.35	146.00	777.73		146.46	777.27		146.46	777.27		777.13

ROCKET PASTE AREA/NITROGLYCERINE POND/NEW ACID AREA

NPM-89-01	862.77					85.44	777.33	86.08	776.69	86.42	776.35	86.69	776.08	86.75	776.02		
RPM-91-01	873.96										100.20	773.76		100.28	773.68		
RPM-89-01	888.65					112.85	775.80	113.35	775.30	113.76	774.89	113.89	774.76	114.08	774.57		
RPM-89-02	874.76					98.83	775.93	99.41	775.35	99.77	774.99	99.93	774.83	100.12	774.64		
NAN-81-01A	913.50	133.90	779.60	134.62	778.88	135.00	778.50				136.41	777.09		136.46	777.04		
NAN-81-01B	912.32																
NAN-81-02B	914.99	135.03	779.96	136.06	778.93	136.49	778.50				137.93	777.06		137.97	777.02		
NAN-81-03B	915.21	136.30	778.91	136.44	778.77	136.81	778.30				138.28	776.93		138.32	776.89		
NAN-81-03C	915.02	135.00	780.02	136.15	778.87	136.50	778.37				137.99	777.03		138.04	777.03		
NAN-81-04A	925.22			117.25	807.97												

TABLE G-1  
GROUNDWATER ELEVATION DATA

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL DESIGNATION	RISER ELEV. FEET MSL	WATER DEPTH		WATER ELEV.		WATER DEPTH		WATER ELEV.		WATER DEPTH		WATER ELEV.		
		3/14/89	10/25/89	3/14/89	12/13/89	6/15/90	10/22/90	12/15/91	12/15/91	10/22/90	12/15/91	12/15/91	12/15/91	
NAN-81-04B	925.91	145.90	147.02	780.01	147.44	778.89	148.74	776.51	148.91	777.00	148.95	776.96	47/92	
NAN-81-04C	925.25	145.18	146.36	780.07	148.74	778.89	148.74	776.51	148.22	777.03	148.26	776.99	47/92	
<b>OLD ACID AREA/OLD FUELOIL TANK</b>														
OAM-91-01	877.04								91.45	785.59	91.36	785.68		
OAM-89-01	874.38				86.52	787.86	87.76	786.62	87.95	786.43	88.29	786.09		
OAM-89-02	874.91				87.35	787.56			89.19	785.72	89.11	785.80		
FTM-89-01	874.27				86.63	787.64	87.85	786.42	88.15	786.12	88.64	785.63		
<b>BACKGROUND</b>														
BGM-91-01	876.01								61.54	814.47	65.60	810.41		
BGM-91-02	876.61								78.00	798.61	77.18	799.43		
BGM-91-03	863.56								80.41	783.15	80.36	783.20		
<b>OLEUM PLANT AND POND</b>														
OPM-89-01	925.99				66.10	859.89	65.52	860.47	66.25	859.74	65.92	860.07		
OPM-89-02	879.46				100.26	779.20			100.93	778.53	101.39	778.07		
OPM-89-03	929.75				151.43	778.32	152.10	777.65	152.29	777.46	152.84	776.91		
<b>BASISWIDE WELLS</b>														
S1101	830.21	65.17	765.04	66.55	763.66	66.76	763.45	67.33	762.88	67.84	762.37	68.34	761.87	68.15
S1102	809.13	44.43	764.70	45.76	763.37	45.94	763.19	46.36	762.77	46.87	762.26	47.45	761.68	47.02
S1103	809.13	44.21	764.92	45.67	763.46	45.91	763.22					47.24	761.89	47.00
S1104	839.21	74.33	764.88	75.58	763.63	75.81	763.40					76.82	762.39	76.66
S1105	839.08	74.02	765.06	75.42	763.66							76.67	762.41	76.51
S1106	839.72	74.73	764.99	76.15	763.57							77.37	762.35	77.22
S1107	812.08	47.00	765.08	48.36	763.72	48.56	763.52					49.41	762.67	49.22
S1108	782.74	17.82	764.92	19.05	763.69	19.32	763.42					19.98	762.76	19.80
S1109	856.58	86.07	770.51	87.58	769.00	87.71	768.87	88.45	768.13	89.30	767.28	89.84	766.74	89.77
S1110	813.12	44.12	769.00	45.94	767.18	46.42	766.70	46.76	766.36	47.12	766.00	46.96	766.16	46.96

TABLE G-1  
GROUNDWATER ELEVATION DATA

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL DESIGNATION	RISER ELEV. FEET MSL	WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER	
		DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.	DEPTH	ELEV.
S1111	848.82	78.33	770.49	79.27	769.55	79.47	769.35	79.70	769.12	79.79	769.03	79.99	768.83	80.19	768.63	47.92	47.92
S1112	838.29	64.67	773.62	65.12	773.17	65.53	772.76	65.78	772.51	65.95	772.34	66.21	772.08	66.18	772.11		
S1113	821.56	46.94	774.62	47.44	774.12	47.23	774.14	47.58	773.97	47.65	773.91	47.82	773.74	47.73	773.83		
S1114	821.37	46.76	774.61	47.27	774.10	47.23	774.14	47.58	773.97	47.54	773.83	47.67	793.70	47.56	773.81		
S1115	863.37	89.83	773.54	90.55	772.82	89.93	772.38	91.58	771.79	92.17	771.20	92.56	770.81	92.59	770.78		
S1116	862.31	88.40	773.91	89.53	772.78	89.93	772.38	91.58	771.79	92.17	771.20	92.56	770.81	92.59	770.78		
S1117	864.40	90.89	773.51	92.11	772.29	100.00	774.99	100.60	774.39	100.92	774.07	101.17	773.82	101.34	773.65		
S1118	874.99	98.79	776.20	99.77	775.22	100.00	774.99	100.60	774.39	100.92	774.07	101.17	773.82	101.34	773.65		
S1119	879.69	101.90	777.79	102.87	776.82												
S1120	879.76																
S1121	815.43			39.69	775.74					40.12	775.31						
S1122	907.16	127.51	779.65	128.39	778.77												
S1123	868.79	85.68	783.11	86.89	781.90	87.33	781.46	88.33	780.46	89.00	779.79	89.73	779.06	89.63	779.16		
S1124	879.83	100.85	778.98	101.94	777.89	102.08	777.75	117.85	777.89	122.88	772.86	103.36	776.47	103.44	776.39		
S1125	895.74	115.61	780.13	116.88	778.86	117.03	778.71	117.85	777.89	122.88	772.86	118.78	776.96	118.77	776.97		
S1126	876.95	88.27	788.68	89.75	787.20	90.00	786.95	91.27	785.68	91.50	785.45	91.90	785.05	91.82	785.13		
S1127	880.35	66.20	814.15	67.83	812.52	68.91	811.44	54.20	826.15	61.08	819.27	55.99	824.36	50.21	830.14		
S1128	879.31	54.98	824.33	57.29	822.02	58.26	821.05	45.23	834.08	50.74	828.57	48.44	830.87	41.75	837.56		
S1129	913.12	87.94	825.18	90.05	823.07	90.79	822.33	86.72	826.40	81.48	831.64	80.99	832.13	76.34	836.78		
S1130	941.18	106.30	834.88	105.84	835.34	109.17	832.01	104.55	836.63	109.91	831.27	107.13	834.05	105.00	836.18		
S1131	942.17	116.40	825.77	114.55	827.62	116.13	826.04	107.55	834.62	109.38	832.79	108.86	833.31	101.47	840.70		
S1132	915.41	135.28	780.13	136.21	779.20	136.62	778.79	137.28	778.13	137.52	777.89	137.98	777.43	138.01	777.40		
S1133	828.29	63.19	765.10	64.61	763.68	142.83	778.98					66.38	761.91	66.18	762.11		
S1134	921.81			142.78	779.03	147.62	778.37					143.90	777.91	143.99	777.82		
S1135	925.99	146.34	779.65	147.58	778.41	147.62	778.37					148.73	777.26	148.78	777.21		
S1144	863.20			89.86	773.34							92.36	770.84	92.38	770.82		
S1145	878.38	104.44	773.94	105.00	773.38							89.20	769.48	89.16	769.52		
S1146	858.68	85.40	773.28	86.76	771.92							54.86	762.28	54.68	762.46		
S1147	817.14	51.79	765.35	53.16	763.98	53.25	763.89	53.90	763.24	54.43	762.71	41.75	761.94	41.52	762.17		
S1148	803.69	38.19	765.50	40.26	763.43	40.42	763.27					44.90	762.74	44.68	762.96		
S1149	807.64	41.40	766.24	43.34	764.30	43.48	764.16					120.86	776.64	120.90	776.60		
S1150	897.50	117.85	779.65	119.07	778.43	119.23	778.27					115.52	777.91	115.42	778.01		
S1151	893.43	112.80	780.63	113.80	779.63	114.32	779.11	114.95	778.48	114.96	778.47						
S1152A	813.58	48.34	765.24	50.42	763.16							51.93	761.65	51.71	761.87		
S1152B	813.15	47.90	765.25	50.03	763.12							51.50	761.65	51.28	761.97		
S1153	908.00	128.74	779.26	129.62	778.38	129.99	778.01					130.93	777.07	130.98	777.02		

TABLE G-1  
GROUNDWATER ELEVATION DATA

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL DESIGNATION	RISER ELEV. FEET MSL.	3/14/89		10/25/89		12/13/89		6/15/90		10/22/90		12/15/91		4/7/92	
		WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.
<b>NEW LANDFILL</b>															
NLN-82-01A	890.67		114.72	775.95	114.97	775.70	115.70	774.97	115.75	774.92	115.75	774.97	115.75	774.92	774.92
NLN-82-01B	891.29		115.35	775.94	115.51	775.78	116.30	774.99	116.40	774.89	116.40	774.89	116.40	774.89	774.89
NLN-82-01C	890.52		114.61	775.91	114.81	775.71	115.55	774.97	115.62	773.90	115.62	773.90	115.62	773.90	773.90
NLN-82-02A	864.02		88.30	775.72	88.47	775.55	89.27	774.75	89.25	774.77	89.25	774.77	89.25	774.77	774.77
NLN-82-02B	863.84		88.02	775.82	88.24	775.60	88.99	774.85	89.00	774.84	89.00	774.84	89.00	774.84	774.84
NLN-82-02C	864.08		88.29	775.79	88.46	775.62	89.21	774.87	89.23	774.85	89.23	774.85	89.23	774.85	774.85
NLN-82-03A	883.95		108.20	775.75	108.48	775.47	110.24	773.71	109.30	774.65	109.30	774.65	109.30	774.65	774.65
NLN-82-03B	885.14		109.13	776.01	109.31	775.83	110.07	775.07	110.13	775.01	110.13	775.01	110.13	775.01	775.01
NLN-82-03C	884.75		109.47	775.28	109.68	775.07	110.41	774.34	110.50	774.25	110.50	774.25	110.50	774.25	774.25
NLN-83-04A	892.94		117.38	775.56	117.50	775.44	118.31	774.63	118.40	774.54	118.40	774.54	118.40	774.54	774.54
NLN-82-04B	893.57		118.06	775.51	118.21	775.36	118.98	774.59	118.98	774.59	118.98	774.59	118.98	774.59	774.59
NLN-82-04C	893.81		118.25	775.56	118.42	775.39	119.17	774.64	119.20	774.61	119.20	774.61	119.20	774.61	774.61
NLN-82-05A	899.90		124.42	775.48	124.56	775.34	125.28	774.62	125.30	774.60	125.30	774.60	125.30	774.60	774.60
NLN-82-05B	899.32		123.76	775.56	123.93	775.39	124.67	774.65	124.69	774.63	124.69	774.63	124.69	774.63	774.63
NLN-82-05C	898.20		122.75	775.45	122.89	775.31	123.67	774.53	123.65	774.55	123.65	774.55	123.65	774.55	774.55
<b>OFF - POST SOUTH OF BAAP</b>															
PBN-91-01C	830.04														
PBN-91-02B	821.20														
PBN-91-02C	821.92														
PBN-91-03B	814.72														
PBN-91-03C	814.37														
PBM-90-01D	831.53														
PBM-90-02D	821.32														
PBM-90-03D	814.79														
PBM-90-04B	830.00														
PBM-90-04D	829.95														
SWN-91-01B	833.25														
SWN-91-01C	834.03														
SWN-91-01D	833.57														
SWN-91-02C	836.39														
SWN-91-02D	836.61														
SWN-91-03B	836.63														
SWN-91-03C	836.73														

TABLE G-1  
GROUNDWATER ELEVATION DATA

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL DESIGNATION	3/14/89		10/25/89		12/13/89		6/15/90		10/22/90		10/22/90		12/15/91		12/15/91		4/7/92	
	RISER ELEV. FEET MSL	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	WATER DEPTH	WATER ELEV.	
SWN-91-03D	837.09													84.75	752.34	84.62	752.47	
SWN-91-03E	837.38													85.08	752.30	84.96	752.42	
SWN-91-04C	834.87													83.99	750.88	83.90	750.97	
SWN-91-04D	835.28													84.33	750.95	84.21	751.07	
SWN-91-05B	832.67													84.41	748.26	84.51	748.16	
SWN-91-05C	832.86													84.68	748.18	84.72	748.14	
SWN-91-05D	833.31													85.31	748.00	85.35	747.96	
<b>FUDS PIEZOMETERS/MONITORING WELLS</b>																		
91-38P	824.76													51.35	773.41	51.00	773.76	
91-39P	839.82													66.08	773.74	65.86	773.96	
91-40P	844.57													69.83	774.74	70.19	774.38	
91-41P	805.27															29.00	776.27	
91-42P	796.77													20.80	775.97	21.88	774.89	
91-43P	803.38													27.88	775.50	28.52	774.86	
91-44P	814.06													37.61	776.45	34.14	779.92	
91-45P	789.29													12.77	776.52	14.17	775.12	
91-46P	780.31													4.13	776.18	4.86	775.45	
91-47P	813.85													37.61	776.24	37.66	776.19	
91-48P	846.25													69.28	776.97	69.22	777.03	
91-55P	845.12													47.46	797.66	47.38	797.74	
91-56P	860.51													85.00	775.51	84.94	775.57	
91-57P	844.90													66.70	778.20	65.90	779.00	
91-58P	856.13													56.55	799.58	89.91	766.22	
91-59P	837.34													75.84	761.50	76.25	761.09	
MW-49	891.15															114.89	776.26	
MW-50	891.23															114.66	776.57	
MW-51	860.69															83.88	776.81	
MW-52	830.41															56.51	773.90	
MW-53	828.40															54.56	773.84	
MW-54	816.20															42.21	773.99	

Notes: # indicates questionable water level data.

**Appendix G.2**  
**Field Data Records - Round I and II**

ABB ENVIRONMENTAL SERVICES, INC. (E.C. Jordan Co.)

FIELD DATA RECORD - GROUNDWATER

PROJECT: BADGER - USATHAMA JOB NUMBER: 6298-12 DATE: 24 SEP 90

SAMPLE LOCATION: PBM-90-01D LOCATION ACTIVITY: START 1430 - END 1645

FIELD QC DATA:  FIELD DUPLICATE COLLECTED DUP ID: \_\_\_\_\_

WATER LEVEL / WELL DATA

WELL DEPTH: 213.60 FT  MEASURED  HISTORICAL  TOP OF WELL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 2.35 FT

PROTECTIVE CASING/WELL DIFF.: +0.24 FT

DEPTH TO WATER: 88.63 FT HISTORICAL WELL DEPTH: 210.5 FT

WELL DIA.:  2 INCH  4 INCH  6 INCH

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  CONCRETE COLLAR INTACT  YES  NO  WELL LOCKED  YES  NO  OTHER: \_\_\_\_\_

HEIGHT OF WATER COLUMN: 125 FT x  .16 GAL/FT (2 IN) \*  .65 GAL/FT (4 IN) = 91 GAL/VOL  1.5 GAL/FT (6 IN)  \_\_\_\_\_ GAL/FT ( \_\_\_\_\_ IN)

AMBIENT AIR VOA: 0.0 PPM

WELL MOUTH: 0.0 PPM

WELL MATERIAL:  PVC  SS

TOTAL GAL PURGED: 455

PURGE DATA

PURGE VOLUME	@ 91 GAL	@ 182 GAL	@ 273 GAL	@ 364 GAL	@ 455 GAL
TEMP, DEG C	<u>12.8</u>	<u>12.6</u>	<u>11.9</u>	<u>11.8</u>	<u>11.8</u>
TEMP, UNITS	<u>6.4</u>	<u>7.4</u>	<u>7.5</u>	<u>7.5</u>	<u>7.5</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>582</u>	<u>587</u>	<u>587</u>	<u>589</u>	<u>586</u>

SAMPLE OBSERVATIONS

CLEAR

COLORED \_\_\_\_\_

CLOUDY \_\_\_\_\_

TURBID \_\_\_\_\_

OOCR \_\_\_\_\_

OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

LOGGING/SAMPLING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  TEFLON/SILICON TUBING  AIR LIFT  WATERRA  IN-LINE FILTER  PRESS/VAC FILTER

EQUIPMENT ID: large standard no 1

DECON FLUIDS USED:  LIQUI-NOX  DEIONIZED WATER  HNO3/D.I. WATER  POTABLE WATER  TSP SOLUTION  NONE

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  KECK INTERFACE PROBE  OTHER

NUMBER OF FILTER PAPERS USED: 0

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
* VOA N-8	NO	4 DEG C	2-40 ML	<input checked="" type="checkbox"/>	<u>1</u> / <u>2</u> / _____ / _____ / _____ / _____ / _____ / _____ / _____ / _____ / _____

TESTES\* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene,

1,1-dichloroethylene and 1,2-dichloroethylene.

Depth of sandpack = 15'

Pumping rate = 5 gal./min

\* Use Formula (Hgt. of H<sub>2</sub>O column) x .65 + [(Area of B H - Area of M.W) x .3 porosity x Depth of Sandpack x 7.48 gal/ft<sup>3</sup> = 1 volume

1/9/89

SIGNATURE: R. David Dismore



# ABB ENVIRONMENTAL SERVICES, INC. (E. C. Jordan Co.)

## FIELD DATA RECORD - GROUNDWATER

PROJECT BADGER - USATHAMA JOB NUMBER 6298-12 DATE 25 SEP 90  
 SAMPLE LOCATION ID PBM-90-02D LOCATION ACTIVITY START 0745 END 1000  
 FIELD QC DATA:  FIELD DUPLICATE COLLECTED DUP ID \_\_\_\_\_

### WATER LEVEL / WELL DATA

WELL DEPTH 207.3 FT  MEASURED  HISTORICAL  
 TOP OF WELL TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) 2.2 FT  
 DEPTH TO WATER 178.88 FT HISTORICAL WELL DEPTH 205 FT  
 WELL DIA.  2 INCH  4 INCH  6 INCH  
 WELL MATERIAL:  PVC  SS  
 PROTECTIVE CASING/WELL DIFF. +0.24 FT  
 WELL INTEGRITY: YES  NO   
 PROT. CASING SECURE  CONCRETE COLLAR INTACT  
 WELL LOCKED OTHER: \_\_\_\_\_  
 HEIGHT OF WATER COLUMN 128 FT x  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN) = 108 GAL/VOL  
 1.5 GAL/FT (6 IN)  GAL/FT ( IN)  
 AMBIENT AIR VOA 0.0 PPM. WELL MOUTH 1.8 PPM.  
540 TOTAL GAL PURGED

### PURGE DATA

PURGE VOLUME	<u>a</u> <u>108</u> GAL	<u>a</u> <u>216</u> GAL	<u>a</u> <u>324</u> GAL	<u>a</u> <u>432</u> GAL	<u>a</u> <u>540</u> GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOLED <input type="checkbox"/> CLOUDY <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE _____)
TEMP, DEG C	<u>10.4</u>	<u>10.3</u>	<u>10.3</u>	<u>10.3</u>	<u>10.3</u>	
pH, UNITS	<u>7.8</u>	<u>7.2</u>	<u>7.4</u>	<u>7.2</u>	<u>7.5</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>427</u>	<u>464</u>	<u>456</u>	<u>452</u>	<u>453</u>	

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 TEFLON/SILICON TUBING  
 AIR LIFT  
 WATERA  
 IN-LINE FILTER  
 PRESS/VAC FILTER  
 EQUIPMENT ID Trigo Standard  
 DECON FLUIDS USED  LIQUI-NOX  DEIONIZED WATER  HNO3/D.I. WATER  POTABLE WATER  TSP SOLUTION  NONE  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  KECK INTERFACE PROBE  OTHER  
 NUMBER OF FILTER PAPERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED NO	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<u>1</u> * VOA N-8	NO	4 DEG C	2-40 ML	<input checked="" type="checkbox"/>	<u>3 / 4 / / /</u>

NOTES \* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.  
 Water purged from 5' below top of H<sub>2</sub>O column.  
 Depth of sand pack = 25'  
 MD 8/9/89 Pump rate = 5 gal./min.  
 Using formula for purge volume:  $[(\text{Ht. of } H_2O \text{ column} \times .65) + ((\text{Area of } B \cup) - (\text{Area of } M \cup)) \times \text{Depth of Sandpack} \times .3 \text{ porosity} \times 7.48 \text{ gal/1 cu ft}]$   
 SIGNATURE: R. David Lindsey

FIELD DATA RECORD - GROUNDWATER

PROJECT: BADGER - USATHAMA JOB NUMBER: 6298-12 DATE: 25 SEP 90  
 SAMPLE LOCATION: PBM-90-03D LOCATION ACTIVITY: START 1100 - END 1300  
 FIELD QC DATA:  FIELD DUPLICATE COLLECTED DUP ID: \_\_\_\_\_

WATER LEVEL / WELL DATA

WELL DEPTH: 201.3 FT  MEASURED  HISTORICAL  TOP OF WELL TOP OF CASING  PROTECTIVE CASING STICK-UP (FROM GROUND) 1.6 FT  PROTECTIVE CASING/WELL DIFF. +0.23 FT  
 WELL DIA.  2 INCH  4 INCH  6 INCH  
 WELLS TO WATER DEPTH: 73.08 FT HISTORICAL WELL DEPTH: 200 FT WELL MATERIAL:  PVC  SS  
 HEIGHT OF WATER COLUMN: 128 FT x  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN)  
103 GAL/VOL 515 TOTAL GAL PURGED AMBIENT AIR VOA: 0.0 PPM  
 WELL MOUTH: 0.2 PPM

URGENT DATA

URGENT VOLUME	a <u>103</u> GAL	a <u>206</u> GAL	a <u>309</u> GAL	a <u>412</u> GAL	a <u>515</u> GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> COLORED _____ <input type="checkbox"/> CLOUDY _____ <input type="checkbox"/> TURBID _____ <input type="checkbox"/> OOCR _____ <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11.1</u>	<u>11.4</u>	<u>12.0</u>	<u>11.6</u>	<u>12.0</u>	
UNITS	<u>7.8</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>451</u>	<u>461</u>	<u>462</u>	<u>446</u>	<u>463</u>	

EQUIPMENT DOCUMENTATION

LOGGING SAMPLING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  TEFLOW/SILICON TUBING  AIR LIFT  WATERRA  IN-LINE FILTER  PRESS/VAC FILTER

EQUIPMENT ID: Large Submers. No #

DECON FLUIDS USED  LIQUI-NOX  DEIONIZED WATER  HNO3/D.I. WATER  POTABLE WATER  TSP SOLUTION  NONE

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  KECK INTERFACE PROBE  OTHER

NUMBER OF FILTER PAPERS USED \_\_\_\_\_

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
* VOA N-8	NO	4 DEG C	2-40 ML	<input checked="" type="checkbox"/>	<u>5</u> / <u>6</u> /

NOTES\* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.  
 Depth of sand pack = 20' Water purged from 5' below top of H<sub>2</sub>O column. Pump rate = 5 gal/min.  
 Using formula for purging volume:  $[(\text{Hgt. of H}_2\text{O column}) \times .65] + [(\text{Area of B.d.} - (\text{Area of M.W}) \times \text{Depth of sand pack} \times .3 \text{ porosity}) \times 7.48 \text{ gal/ft}^3 = \text{Well Volume}]$   
 SIGNATURE: R. David Sinsore

# ABB ENVIRONMENTAL SERVICES, INC. (E.C. Jordan Co.)

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

PROJECT: BADGER - USATHAMA

JOB NUMBER: 6298-12

DATE: 25 SEP 90

SAMPLE LOCATION ID: PBN-90-04B

LOCATION ACTIVITY: START 1400 - END 1500

FIELD QC DATA:  FIELD DUPLICATE COLLECTED DUP ID

### WATER LEVEL / WELL DATA

WELL DEPTH: 120.6 FT  MEASURED  HISTORICAL  TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 1.8 FT

PROTECTIVE CASING/WELL DIFF.: Flush FT

DEPTH TO WATER: 91.83 FT HISTORICAL WELL DEPTH: 120 FT

WELL DIA.:  2 INCH  4 INCH  6 INCH

WELL MATERIAL:  PVC  SS

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  
 CONCRETE COLLAR INTACT  YES  NO  
 WELL LOCKED  YES  NO  
 OTHER: \_\_\_\_\_

HEIGHT OF WATER COLUMN: 29 FT x  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN) = 38 GAL/VOL  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN)

AMBIENT AIR VOA: 0.0 PPM

WELL MOUTH: 0.0 PPM

TOTAL GAL PURGED: 190

### PURGE DATA

PURGE VOLUME	<u>38</u> GAL	<u>76</u> GAL	<u>114</u> GAL	<u>152</u> GAL	<u>190</u> GAL
TEMP, DEG C	<u>12.1</u>	<u>11.8</u>	<u>11.7</u>	<u>11.5</u>	<u>11.4</u>
PH, UNITS	<u>8.0</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>434</u>	<u>433</u>	<u>445</u>	<u>447</u>	<u>453</u>

### SAMPLE OBSERVATIONS

- CLEAR
- COLORED \_\_\_\_\_
- CLOUDY \_\_\_\_\_
- TURBID \_\_\_\_\_
- OOR \_\_\_\_\_
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  TEFLON/SILICON TUBING  AIR LIFT  WATERRA  IN-LINE FILTER  PRESS/VAC FILTER

EQUIPMENT ID: Trge. Standard

DECON FLUIDS USED:  LIQUI-NOX  DEIONIZED WATER  HNO3/D.I. WATER  POTABLE WATER  TSP SOLUTION  NONE

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  KECK INTERFACE PROBE  OTHER

NUMBER OF FILTER PAPERS USED: \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED NO	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<u>N-8</u>	<u>NO</u>	<u>4 DEG C</u>	<u>2-40 ML</u>	<input checked="" type="checkbox"/>	<u>7 / 8</u>

NOTES: VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene,

1,1-dichloroethylene and 1,2-dichloroethylene.

Depth of sandpack = 18' Pumped water from 5' below water column. Pump rate = 5 gal/min

Used formula for purge volume =  $[(\text{Height of } H_2O \text{ column}) \times .65] + [(\text{Area of B.H.}) - (\text{Area of M.W.}) \times \text{Depth of sandpack}] \times .3 \text{ porosity} \times 7.48 \text{ gal./ft}^3 = 1 \text{ vol.}$

MD 8/9/89

SIGNATURE: R. David Summers

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

PROJECT: BADGER - USATHAMA JOB NUMBER: 6298-12 DATE: 25 SEP 00

SAMPLE LOCATION ID: PBN-90-04D LOCATION ACTIVITY: START 1600 - END 1730

FIELD CC DATA:  FIELD DUPLICATE COLLECTED DUP ID: \_\_\_\_\_

### WATER LEVEL / WELL DATA

WELL DEPTH: 221.2 FT  MEASURED  HISTORICAL  TOP OF WELL TOP OF CASING  PROTECTIVE CASING STICK-UP (FROM GROUND): 1.7 FT  PROTECTIVE CASING/WELL DIFF.: +0.25 FT

DEPTH TO WATER: 91.85 FT HISTORICAL WELL DEPTH: 220.5 FT WELL DIA.:  2 INCH  4 INCH  6 INCH

WELL MATERIAL:  PVC  SS

WELL INTEGRITY:  PROT. CASING SECURE  CONCRETE COLLAR INTACT  WELL LOCKED  OTHER: \_\_\_\_\_

HEIGHT OF WATER COLUMN: 129 FT x  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT ( IN)

98 GAL/VOL AMBIENT AIR VOA: 0.0 PPM

490 TOTAL GAL PURGED WELL MOUTH: 0.0 PPM

### PURGE DATA

PURGE VOLUME	a 98 GAL	a 196 GAL	a 294 GAL	a 392 GAL	a 490 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> COLORED _____ <input type="checkbox"/> CLOUDY _____ <input type="checkbox"/> TURBID _____ <input type="checkbox"/> ODOR _____ <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>12.0</u>	<u>11.8</u>	<u>11.4</u>	<u>11.6</u>	<u>11.4</u>	
W, UNITS	<u>9.0</u>	<u>8.4</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>439</u>	<u>447</u>	<u>436</u>	<u>436</u>	<u>440</u>	

### EQUIPMENT DOCUMENTATION

URGING SAMPLING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  TEFLON/SILICON TUBING  AIR LIFT  WATERRA  IN-LINE FILTER  PRESS/VAC FILTER

EQUIPMENT ID: 1000 / Sub Standard

DECON FLUIDS USED:  LIQUI-NOX  DEIONIZED WATER  HNO3/D.I. WATER  POTABLE WATER  TSP SOLUTION  NONE

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  KECK INTERFACE PROBE  OTHER

NUMBER OF FILTER PAPERS USED: 0

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
* VOA N-8	NO	4 DEG C	2-40 ML	<input checked="" type="checkbox"/>	<u>9 / 10 /</u>

NOTES\* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.

Using formula for purge volumes [(Height of H<sub>2</sub>O column) x 65] + [(Area of B.H.) - (Area of m.w.) x Depth of sandpack x .3 porosity] x 7.48 gal/ft<sup>3</sup> = 1 well volume

Depth of sandpack = 14'

Pump rate = 5 gal/min

lowered pump to 5' below top of H<sub>2</sub>O column 8/9/00 when 16' below due to slower recharge

SIGNATURE: R. David Linmore

# ABB ENVIRONMENTAL SERVICES, INC. (E.C. Jordan Co.)

## FIELD DATA RECORD - GROUNDWATER

PROJECT: BADGER - USATHAMA

JOB NUMBER: 6298-12

DATE: 26 SEP 90

SAMPLE LOCATION ID: PBN-89-048

LOCATION ACTIVITY: START 0830 - END 0945

FIELD QC DATA:  FIELD DUPLICATE COLLECTED DUP ID

### WATER LEVEL / WELL DATA

WELL DEPTH: 146.0 FT

MEASURED  HISTORICAL  TOP OF WELL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 2.4 FT

PROTECTIVE CASING/WELL DIFF.: -0.20 FT

DEPTH TO WATER: 92.56 FT

HISTORICAL WELL DEPTH: 148 FT

WELL DIA.:  2 INCH  4 INCH  6 INCH

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  
CONCRETE COLLAR INTACT  YES  NO  
WELL LOCKED  YES  NO  
OTHER:  YES  NO

HEIGHT OF WATER COLUMN: 53 FT

16 GAL/FT (2 IN)  
 65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

54 GAL/VOL  
270 TOTAL GAL PURGED

AMBIENT AIR VOA: 0.0 PPM  
WELL MOUTH: 0.0 PPM

### PURGE DATA

PURGE VOLUME	<u>54</u> GAL	<u>108</u> GAL	<u>162</u> GAL	<u>216</u> GAL	<u>270</u> GAL
TEMP, DEG C	<u>12.8</u>	<u>12.8</u>	<u>12.8</u>	<u>12.8</u>	<u>14.9</u>
pH, UNITS	<u>7.1</u>	<u>7.2</u>	<u>7.2</u>	<u>7.3</u>	<u>7.3</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>702</u>	<u>695</u>	<u>683</u>	<u>672</u>	<u>655</u>

SAMPLE OBSERVATIONS  
 CLEAR  
 COLORED  
 CLOUDY  
 TURBID  
 ODCR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
TEFLON/SILICON TUBING   
AIR LIFT   
WATERRA   
IN-LINE FILTER   
PRESS/VAC FILTER   
EQUIPMENT ID: Large Standard  
NO #

DECON FLUIDS USED  
 LIQUI-NOX  
 DEIONIZED WATER  
 HNO3/D.I. WATER  
 POTABLE WATER  
 TSP SOLUTION  
 NONE

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 KECK INTERFACE PROBE  
 OTHER

NUMBER OF FILTER PAPERS USED: \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS		
<u>N-8</u>	<u>NO</u>	<u>4 DEG C</u>	<u>2-40 ML</u>	<input checked="" type="checkbox"/>	<u>11</u>	<u>12</u>	

NOTES: \* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.  
- Purge water contained & emptied into Badger Sewer System.  
- Sand pack = 18"  
- No cap on well  
- Pump rate = 5 gal/min  
Using formula for purge volume - [Height of H<sub>2</sub>O Column x .65] + [(Area of BH-Area of Well x Depth of Sandpack x .3 porosity x 4) = 1 well volume  
SIGNATURE: R. David ...

FIELD DATA RECORD - GROUNDWATER

PROJECT BADGER - USATHAMA JOB NUMBER 6298-12 DATE 26 SEP 90  
 SAMPLE LOCATION PBN-89-04C LOCATION ACTIVITY START 1035 - END 1200  
 FIELD QC DATA:  FIELD DUPLICATE COLLECTED DUP ID \_\_\_\_\_

WATER LEVEL / WELL DATA

WELL DEPTH 182.2 FT  MEASURED  HISTORICAL  TOP OF WELL TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.7 FT  
 PROTECTIVE CASING/WELL DIFF. -0.78 FT  
 WELL DIA.  2 INCH  4 INCH  6 INCH  
 WELLED DEPTH TO WATER 93.48 FT HISTORICAL WELL DEPTH 185 FT  
 WELL MATERIAL:  PVC  SS  
 WELLED DEPTH OF WATER COLUMN 89 FT x  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (IN)  
 AMBIENT AIR VOA 0.0 PPM  
 WELL MOUTH 0.0 PPM  
 84 GAL/VOL  
 420 TOTAL GAL PURGED

PURGE DATA

PURGE VOLUME	* Chkd. Cond. w/ Standard					SAMPLE OBSERVATIONS
	<u>84</u> GAL	<u>168</u> GAL	<u>252</u> GAL	<u>336</u> GAL	<u>420</u> GAL	
TEMP, DEG C	<u>14.3</u>	<u>15.3</u>	<u>14.9</u>	<u>14.9</u>	<u>14.1</u>	<input checked="" type="checkbox"/> CLEAR
1, UNITS	<u>7.4</u>	<u>7.5</u>	<u>7.4</u>	<u>7.4</u>	<u>7.4</u>	<input type="checkbox"/> COLORED _____
SPECIFIC CONDUCTIVITY umhos/cm	<u>593</u>	<u>550</u>	<u>548</u>	<u>778</u>	<u>772</u>	<input type="checkbox"/> CLOUDY _____
						<input type="checkbox"/> TURBID _____
						<input type="checkbox"/> ODOR _____
						<input type="checkbox"/> OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

IRGING SAMPLING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  TEFLON/SILICON TUBING  AIR LIFT  WATERRA  IN-LINE FILTER  PRESS/VAC FILTER

EQUIPMENT ID Trge. Standard no \*

DECON FLUIDS USED  LIQUI-NOX  DEIONIZED WATER  HNO3/D.I. WATER  POTABLE WATER  TSP SOLUTION  NONE

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  KECK INTERFACE PROBE  OTHER

NUMBER OF FILTER PAPERS USED \_\_\_\_\_

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS			
					11	12	13	14
<u>N-8</u>	<u>NO</u>	<u>4 DEG C</u>	<u>2-40 ML</u>	<input checked="" type="checkbox"/>				

NOTES: VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.  
 - Purge water contained & emptied into Badger Sewer system.  
 - Sand pack = 25'  
 - No cap on well  
 8/9/89 - Pump rate = 5 gal./min.

Using formula for purge volume =  
 [Wgt. of H<sub>2</sub>O column = .65] + [Area of B.H.  
 - Area of A.W.] x Depth of Sand Pack x  
 .3 porosity x 7.48 gal/Ft<sup>3</sup> = 1 well volume

SIGNATURE: [Signature]

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE 1 of 1

**FIELD DATA RECORD - GROUNDWATER**PROJECT BADGER - USATHAMAJOB NUMBER 6298-12DATE 26 SEP 90SAMPLE LOCATION ID SPN-89-03BLOCATION ACTIVITY START 1300 -- END 1330FIELD QC DATA:  FIELD DUPLICATE COLLECTED DUP ID**WATER LEVEL / WELL DATA**WELL DEPTH 96.6 FT MEASURED  
 HISTORICAL TOP OF WELL  
 TOP OF CASINGPROTECTIVE CASING STICK-UP (FROM GROUND) 3.0 FTPROTECTIVE CASING/WELL DIFF. -0.12 FTDEPTH TO WATER 55.40 FTHISTORICAL WELL DEPTH 97 FTWELL DIA.  2 INCH  
 4 INCH  
 6 INCHWELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: HEIGHT OF WATER COLUMN 41 FT .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_ IN)38 GAL/VOL  
190 TOTAL GAL PURGEDAMBIENT AIR VOA 0.0 PPMWELL MOUTH 0.4 PPM**PURGE DATA**

PURGE VOLUME

a 38 GALa 76 GALa 114 GALa 152 GALa 190 GAL

TEMP, DEG C

15.315.914.214.611.7

PH, UNITS

7.77.67.57.67.5

SPECIFIC CONDUCTIVITY umhos/cm

668662662665657

SAMPLE OBSERVATIONS

 CLEAR COLORED CLOUDY TURBID ODOOR OTHER (SEE NOTES)**EQUIPMENT DOCUMENTATION**PURGING  SAMPLING PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
TEFLON/SILICON TUBING   
AIR LIFT   
WATERRA   
IN-LINE FILTER   
PRESS/VAC FILTER 

EQUIPMENT ID

Irge Standard  
note

DECON FLUIDS USED

 LIQUI-NOX  
 DEIONIZED WATER  
 HNO3/0.1. WATER  
 POTABLE WATER  
 TSP SOLUTION  
 NONE

WATER LEVEL EQUIP. USED

 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 KECK INTERFACE PROBE  
 OTHER

NUMBER OF FILTER PAPERS USED \_\_\_\_\_

**ANALYTICAL PARAMETERS** VOA

METHOD NUMBER

N-8

FILTERED

NO

PRESERVATION METHOD

4 DEG C

VOLUME REQUIRED

2-40 ML

SAMPLE COLLECTED

SAMPLE BOTTLE ID NUMBERS

1516

NOTES\* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.

- Depth of sandpack = 11'

- Purge water contained &amp; emptied into Badger Sewer System

- Pumping rate = 5.5 gal/min

NO 8/9/89

Using formula for purge volume  
[Hgt. of H2O Column = .65] x [Area of M.W.] x Depth of Sandpack  
.3 porosity x 7 x 5 gal/ft<sup>2</sup> = 1000 gal.SIGNATURE: R. David Dineen

**ABB ENVIRONMENTAL SERVICES, INC.**

**FIELD DATA RECORD - GROUNDWATER**

PROJECT BADGER - USATHAMA JOB NUMBER 6298-12 DATE 26 SEP 90  
 SAMPLE LOCATION SPN-89-03C LOCATION ACTIVITY START 1400 - END 1500  
 FIELD CC DATA:  FIELD DUPLICATE COLLECTED DUP ID \_\_\_\_\_

**WATER LEVEL / WELL DATA**

WELL DEPTH 130.3 FT  MEASURED  HISTORICAL  TOP OF WELL TOP OF CASING  PROTECTIVE CASING STICK-UP (FROM GROUND) 2.8 FT PROTECTIVE CASING/WELL DIFF. -04.5 FT  
 DEPTH TO WATER 55.58 FT HISTORICAL WELL DEPTH 131 FT WELL MATERIAL:  PVC  SS WELL DIA.  2 INCH  4 INCH  6 INCH  
 HEIGHT OF WATER COLUMN 75 FT x  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT ( IN) 60 GAL/VOL 300 TOTAL GAL PURGED AMBIENT AIR VOA 0.0 PPM WELL MOUTH 0.0 PPM  
 WELL INTEGRITY: PROT. CASING SECURE  YES  NO CONCRETE COLLAR INTACT  YES  NO WELL LOCKED  YES  NO OTHER: \_\_\_\_\_

**PURGE DATA**

PURGE VOLUME	@ 60 GAL	@ 120 GAL	@ 180 GAL	@ 240 GAL	@ 300 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> COLORED _____ <input type="checkbox"/> CLOUDY _____ <input type="checkbox"/> TURBID _____ <input type="checkbox"/> CDCR _____ <input type="checkbox"/> OTHER (SEE NOTES) _____
TEMP, DEG C	<u>11.8</u>	<u>10.8</u>	<u>10.3</u>	<u>10.3</u>	<u>10.3</u>	
PH, UNITS	<u>7.7</u>	<u>7.5</u>	<u>7.5</u>	<u>7.5</u>	<u>7.5</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>711</u>	<u>691</u>	<u>682</u>	<u>683</u>	<u>680</u>	

**EQUIPMENT DOCUMENTATION**

DRILLING SAMPLING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  TEFLON/SILICON TUBING  AIR LIFT  WATERRA  IN-LINE FILTER  PRESS/VAC FILTER  
 EQUIPMENT ID Irge standard  
 DECON FLUIDS USED  LIQUI-NOX  DEIONIZED WATER  HNO3/D.I. WATER  POTABLE WATER  TSP SOLUTION  NONE  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  KECK INTERFACE PROBE  OTHER  
 NUMBER OF FILTER PAPERS USED \_\_\_\_\_

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
* VOA N-8	NO	4 DEG C	2-40 ML	<input checked="" type="checkbox"/>	<u>17 / 18</u>

NOTES\* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1-dichloroethylene and 1,2-dichloroethylene.  
 Depth of sandpack = 11' - Also, Irge hole inground by well.  
 Purge water contained and emptied into Badger's sewer system.  
 Pumping rate = 5.5 gal./min.  
 8/9/83  
 Formula for 1 well volume:  $[ \text{Hght. of H}_2\text{O Column} \times .65 ] \times [ (\text{Area of B.H.} - \text{Area of mw}) \times \text{Depth of Sandpack} \times .3 = 7.45 \text{ gal/ft}^3 ]$   
 SIGNATURE: R. David Dinmore



E.C. JORDAN CO.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NO.

PBM9001D

WEATHER

Sum 60°

PROJECT USATHAMA-BAAP

PROGRAM 006

SITE TYPE

Well

FILE NAME

CGW

JOB NUMBER

6298-12

SAMPLING DATE

22 OCT 90

SITE ID PBM-90-01D

LOCATION ACTIVITY

START 1510 END 1645

WATER LEVEL / WELL DATA

WELL DEPTH 212.8 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.4 FT

PROTECTIVE CASING/WELL DIFF. +0.23 FT

DEPTH TO WATER 89.02 FT

DEPTH OF SANDPACK 15 FT

WELL MATERIAL: PVC SS

WELL DIA. 2 INCH 4 INCH 6 INCH

WELL INTEGRITY: PROT. CASING SECURE CONCRETE COLLAR INTACT WELL LOCKED OTHER:

HEIGHT OF WATER COLUMN 123 FT

91 GAL/VOL 455 TOTAL GAL PURGED

PURGE WATER CONTAINED? YES NO

PURGE VOL. CALCULATION: [(HGT. OF WATER COL.) X .65] + [(AREA OF 3" - AREA OF N.W.) X DEPTH OF SANDPACK X .3 PORE. X 7.48 GAL/CU FT] = 1 VOLUME

FIELD ANALYSIS DATA

AMBIENT AIR VOA 0.5 PPM

WELL MOUTH 0.9 PPM

PURGE VOLUME	a 91 GAL	a 182 AL	a 273 GAL	a 364 GAL	a 455 GAL
TEMP, DEG C	11.3	10.5	10.6	10.3	10.3
pH, UNITS	6.6	7.6	7.6	7.7	7.7
SPECIFIC CONDUCTIVITY umhos/cm	589	549	536	527	522

SAMPLE OBSERVATIONS

- CLEAR
- COLORED
- CLOUDY
- TURBID
- OOR
- OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING SAMPLING

- PERISTALTIC PUMP
- SUBMERSIBLE PUMP
- BAILER
- PVC/SILICON TUBING
- TEFLON/SILICON TUBING
- AIR LIFT
- WATERRA
- IN-LINE FILTER
- PRESS/VAC FILTER

EQUIPMENT ID

Trge Standard 704

DECON FLUIDS USED

- LIQUI-NOX
- DEIONIZED WATER
- HNO3/D.I. WATER
- POTABLE WATER
- TSP SOLUTION
- NONE

WATER LEVEL EQUIP. USED

- ELECTRIC COND. PROBE
- FLOAT ACTIVATED
- KECK INTERFACE PROBE
- OTHER

NUMBER OF FILTER PAPERS USED

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/> VOA N-8	NO	4 DEG C	2-40 ML	<input checked="" type="checkbox"/>	100 / 101 / / /

NOTES PBM-90-01D

\* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.

Purged 5 gals. VOA's then sampled. Pump rate = 5 gals./min.

GROUNDWATER ELEVATION:

SIGNATURE R. David Dinsmore

E.C. JORDAN CO.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NO.

PBM9002D

WEATHER

Sunny 40°

PROJECT USATHAMA-BAAP

PROGRAM 306

SITE TYPE

Well

FILE NAME

CGW

JOB NUMBER

6298-12

SAMPLING DATE

23 OCT 90

SITE ID PBM-90-02D

LOCATION ACTIVITY

START 0730

END 1000

WATER LEVEL / WELL DATA

WELL DEPTH 207.0 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.3 FT

PROTECTIVE CASING/WELL DIFF.

+0.25 FT

DEPTH TO WATER 79.16 FT

DEPTH OF SANDPACK 25 FT

WELL DIA. 2 INCH 4 INCH 6 INCH

WELL MATERIAL: PVC SS

WELL INTEGRITY: PROT. CASING SECURE CONCRETE COLLAR INTACT WELL LOCKED OTHER:

YES NO

HEIGHT OF WATER COLUMN 128 FT

108 GAL/VOL 540 TOTAL GAL PURGED

PURGE WATER CONTAINED? YES NO

PURGE VOL. CALCULATION: [(HGT. OF WATER COL.) X .65] + [(AREA OF B.H. - AREA OF M.W.) X DEPTH OF SANDPACK X .3 PCR. X 7.48 GAL/CU FT] = 1 VOLUME

FIELD ANALYSIS DATA

AMBIENT AIR VOA 0.0 PPM

WELL MOUTH 0.0 PPM

PURGE VOLUME	2 108 GAL	2 216 AL	2 324 GAL	2 432 GAL	2 540 GAL
TEMP, DEG C	9.4	9.4	9.6	9.6	9.6
pH, UNITS	7.0	7.7	7.7	7.6	7.6
SPECIFIC CONDUCTIVITY umhos/cm	416	442	400	397	398

SAMPLE OBSERVATIONS

- CLEAR
- COLORED \_\_\_\_\_
- CLOUDY \_\_\_\_\_
- TURBID \_\_\_\_\_
- ODOR \_\_\_\_\_
- OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING SAMPLING

- PERISTALTIC PUMP
- SUBMERSIBLE PUMP
- BAILER
- PVC/SILICON TUBING
- TEFLON/SILICON TUBING
- AIR LIFT
- WATERRA
- IN-LINE FILTER
- PRESS/VAC FILTER

EQUIPMENT ID

Large Standard No #

DECON FLUIDS USED

- LIQUI-NOX
- DEIONIZED WATER
- HNO3/D.I. WATER
- POTABLE WATER
- TSP SOLUTION
- NONE

WATER LEVEL EQUIP. USED

- ELECTRIC COND. PROBE
- FLOAT ACTIVATED
- KECK INTERFACE PROBE
- OTHER

NUMBER OF FILTER PAPERS USED \_\_\_\_\_

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
7 * VOA N-8	NO	4 DEG C	2-40 ML	<input checked="" type="checkbox"/>	102 / 103 / / /

NOTES

\* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.

Purged 5 vols then sampled.

Pump rate = 5 gals./min.

GROUNDWATER ELEVATION: \_\_\_\_\_

SIGNATURE

R. David Romano

E.C. JORDAN CO.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NO.

PBM9003D

WEATHER

Sunny

PROJECT USATHAMA-BAAP

PROGRAM 006

SITE TYPE

Well

FILE NAME

CG

JOB NUMBER

6298-12

SAMPLING DATE

23 OCT 90

SITE ID

PBM-90-03D

LOCATION ACTIVITY

START 1100

END 1245

WATER LEVEL / WELL DATA

WELL DEPTH 201 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.6 FT

PROTECTIVE CASING/WELL DIFF. 1.24 FT

DEPTH TO WATER 73.28 FT

DEPTH OF SANDPACK 20 FT

WELL MATERIAL: PVC SS

WELL DIA. 2 INCH 4 INCH 6 INCH

WELL INTEGRITY: PROT. CASING SECURE CONCRETE COLLAR INTACT WELL LOCKED OTHER:

HEIGHT OF WATER COLUMN 128 FT

103 GAL/VOL 515 TOTAL GAL PURGED

PURGE WATER CONTAINED? YES NO

PURGE VOL. CALCULATION: [(HGT. OF WATER COL.) X .65] + [(AREA OF B... - AREA OF M.W.) X DEPTH OF SANDPACK X .3 PC... X 7.48 GAL/CU FT] = 1 VOLUME

FIELD ANALYSIS DATA

AMBIENT AIR VOA 0.0 PPM

WELL MOUTH 0.1 PPM

PURGE VOLUME	a 103 GAL	a 206 AL	a 309 GAL	a 412 GAL	a 515 GAL
TEMP, DEG C	10.3	9.8	9.9	9.7	9.7
pH, UNITS	8.4	7.7	7.8	7.6	7.6
SPECIFIC CONDUCTIVITY umhos/cm	406	396	395	395	395

SAMPLE OBSERVATIONS

- CLEAR
- COLORED
- CLOUDY
- TURBID
- ODOR
- OTHER (SEE NUMBER)

EQUIPMENT DOCUMENTATION

PURGING SAMPLING

- PERISTALTIC PUMP
- SUBMERSIBLE PUMP
- BAILER
- PVC/SILICON TUBING
- TEFLON/SILICON TUBING
- AIR LIFT
- WATERRA
- IN-LINE FILTER
- PRESS/VAC FILTER

EQUIPMENT ID

Irge Standard No. 4

DECON FLUIDS USED

- LIQUI-NOX
- DEIONIZED WATER
- HNO3/D.I. WATER
- POTABLE WATER
- TSP SOLUTION
- NONE

WATER LEVEL EQUIP. USED

- ELECTRIC COND. PROBE
- FLOAT ACTIVATED
- KECK INTERFACE PROBE
- OTHER

NUMBER OF FILTER PAPERS USED

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/> * VOA	NO	4 DEG C	2-40 ML	<input checked="" type="checkbox"/>	104 / 105 /

NOTES

\* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.

Purged 5 volumes then sampled.  
Pump rate = 5 gals./min

GROUNDWATER ELEVATION:

SIGNATURE R. David Dineen

E.C. JORDAN CO.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NO.

PBN91004

WEATHER

Sunny/55°

PROJECT USATHAMA-BAAP

PROGRAM 0061

SITE TYPE

WELL

FILE NAME

CGW

JOB NUMBER

6298-12

SAMPLING DATE

23OCT90

SITE ID PBN-90-04B

LOCATION

ACTIVITY

START 1330

END 1430

WATER LEVEL / WELL DATA

WELL DEPTH 120.5 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.9 FT

PROTECTIVE CASING/WELL DIFF.

7.01 FT

DEPTH TO WATER 92.19 FT

DEPTH OF SANDPACK 18 FT

WELL DIA. 2 INCH 4 INCH 6 INCH

WELL INTEGRITY: PROT. CASING SECURE CONCRETE COLLAR INTACT WELL LOCKED OTHER:

YES NO

HEIGHT OF WATER COLUMN 28 FT

38 GAL/VOL

PURGE WATER CONTAINED? YES NO

PURGE VOL. CALCULATION: [(HGT. OF WATER COL.) X .65] + [(AREA OF B.H. - AREA OF M.W.) X DEPTH OF SANDPACK X .3 PCR. X 7.48 GAL/CU FT] = 1 VOLUME

190 TOTAL GAL PURGED

FIELD ANALYSIS DATA

AMBIENT AIR VOA 0.0 PPM

WELL MOUTH 0.1 PPM

PURGE VOLUME	a 38 GAL	a 76 GAL	a 114 GAL	a 152 GAL	a 190 GAL
TEMP, DEG C	10.1	10.0	9.9	10.0	10.0
pH, UNITS	7.9	7.7	7.7	7.6	7.6
SPECIFIC CONDUCTIVITY umhos/cm	401	398	396	399	398

SAMPLE OBSERVATIONS

- CLEAR
- COLORED
- CLOUDY
- TURBID
- ODOR
- OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING SAMPLING

- PERISTALTIC PUMP
- SUBMERSIBLE PUMP
- BAILER
- PVC/SILICON TUBING
- TEF/ON/SILICON TUBING
- AIR LIFT
- WATERRA
- IN-LINE FILTER
- PRESS/VAC FILTER

EQUIPMENT ID

Large Standard no #

DECON FLUIDS USED

- LIQUI-NOX
- DEIONIZED WATER
- HNO3/D.I. WATER
- POTABLE WATER
- TSP SOLUTION
- NONE

WATER LEVEL EQUIP. USED

- ELECTRIC COND. PROBE
- FLOAT ACTIVATED
- KECK INTERFACE PROBE
- OTHER

NUMBER OF FILTER PAPERS USED

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/> * VOA N-8	NO	4 DEG C	2-40 ML	<input checked="" type="checkbox"/>	106 / 107 / / /

NOTES

\* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.  
 Purged 5 vols. then sampled.  
 Pump rate = 5gal./min.

GROUNDWATER ELEVATION:

SIGNATURE R. David Ansinore

E.C. JORDAN CO.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NO.

P1B1N9004D

WEATHER

Sun

PROJECT USATHAMA-BAAP

PROGRAM 006

SITE TYPE

Well

FILE NAME

CG

JOB NUMBER

6298-12

SAMPLING DATE

23 OCT 90

SITE ID P1B1N-90-04D

LOCATION ACTIVITY

START 1530 END 1730

WATER LEVEL / WELL DATA

WELL DEPTH   MEASURED  HISTORICAL  TOP OF WELL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)  PROTECTIVE CASING/WELL DIFF.

DEPTH TO WATER  DEPTH OF SANDPACK  WELL DIA.  2 INCH  4 INCH  6 INCH

WELL MATERIAL:  PVC  SS

HEIGHT OF WATER COLUMN   PURGE VOL. CALCULATION:  $[(HGT. OF WATER COL.) \times .65] + [(AREA OF B.L. - AREA OF M.W.) \times DEPTH OF SANDPACK \times .3 PC \times 7.48 GAL/CU FT] = 1 VOLUME$

TOTAL GAL PURGED  PURGE WATER CONTAINED?  YES  NO

WELL INTEGRITY:  PROT. CASING SECURE  CONCRETE COLLAR INTACT  WELL LOCKED

FIELD ANALYSIS DATA

AMBIENT AIR VOA 0.0 PPM

WELL MOUTH 0.5 PPM

PURGE VOLUME	298 GAL	296 AL	294 GAL	292 GAL	290 GAL
TEMP, DEG C	*	*	10.9	10.9	10.7
pH, UNITS	*	*	7.4	7.7	7.7
SPECIFIC CONDUCTIVITY umhos/cm	410	401	393	401	400

SAMPLE OBSERVATIONS

- CLEAR
- COLORED
- CLOUDY
- TURBID
- OOCR
- OTHER (SEE )

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  TEFLON/SILICON TUBING  AIR LIFT  WATERRA  IN-LINE FILTER  PRESS/VAC FILTER

EQUIPMENT ID leg standard no #

DECON FLUIDS USED  LIQUI-NOX  DEIONIZED WATER  HNO3/D.I. WATER  POTABLE WATER  TSP SOLUTION  NONE

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  KECK INTERFACE PROBE  OTHER

NUMBER OF FILTER PAPERS USED \_\_\_\_\_

ANALYTICAL PARAMETERS

\* VOA

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
N-8	NO	4 DEG C	2-40 ML	<input checked="" type="checkbox"/>	108 / 109 / / /

NOTES

\* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.

\* pH meter not functioning properly.

Pump rate = 5 gal./min.

GROUNDWATER ELEVATION:

SIGNATURE

R. David Dismore

E.C. JORDAN CO.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NO.

PBN90048

WEATHER

Sunny/40

PROGRAM 206

SITE TYPE

Well

FILE NAME

CGW

PROJECT USATHAMA-BAAP

JOB NUMBER

6298-12

SAMPLING DATE

24 OCT 90

SITE ID PBN-89-048

LOCATION ACTIVITY

START 0830 END 1000

WATER LEVEL / WELL DATA

WELL DEPTH 145.6 FT, MEASURED HISTORICAL, TOP OF WELL, PROTECTIVE CASING STICK-UP 2.5 FT, PROTECTIVE CASING/WELL DIFF. -0.21 FT, DEPTH TO WATER 92.69 FT, DEPTH OF SANDPACK 18 FT, WELL DIA. 2 INCH, WELL INTEGRITY, WELL MATERIAL: PVC, SS, PURGE WATER CONTAINED? YES, PURGE VOL. CALCULATION: [(HGT. OF WATER COL.) X .65] + [(AREA OF B.H. - AREA OF M.W.) X DEPTH OF SANDPACK X .3 PCR. X 7.48 GAL/CU FT] = 1 VOLUME

FIELD ANALYSIS DATA

AMBIENT AIR VOA 0.0 PPM WELL MOUTH 0.0 PPM

Table with 5 columns: PURGE VOLUME, TEMP, DEG C, PH, UNITS, SPECIFIC CONDUCTIVITY umhos/cm. Rows show data for purges of 54, 108, 162, 216, and 270 gallons.

SAMPLE OBSERVATIONS

- CLEAR (checked), COLORED, CLOUDY, TURBID, ODOR, OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING SAMPLING, EQUIPMENT ID (Ingo Standard), DECON FLUIDS USED (LIQUI-NOX, DEIONIZED WATER, HNO3/D.I. WATER, POTABLE WATER, TSP SOLUTION, NONE), WATER LEVEL EQUIP. USED (ELECTRIC COND. PROBE, FLOAT ACTIVATED, KECK INTERFACE PROBE, OTHER), NUMBER OF FILTER PAPERS USED

ANALYTICAL PARAMETERS

METHOD NUMBER N-8, FILTERED NO, PRESERVATION METHOD 4 DEG C, VOLUME REQUIRED 2-40 ML, SAMPLE COLLECTED, SAMPLE BOTTLE ID NUMBERS 110 / 111

NOTES

- \* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene. - No cap on well. - Purge water contained and emptied into sewer system at BAAP. - Pump rate = 5 gal./min.

GROUNDWATER ELEVATION:

SIGNATURE R. David Dinsmore

E.C. JORDAN CO.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NO.

PBN 9904C

WEATHER

Sun 140

PROJECT USATHAMA-BAAP

PROGRAM 306

SITE TYPE

Well

FILE NAME

CG

JOB NUMBER

6298-12

SAMPLING DATE

24 OCT 90

SITE ID PBN-189-04C

LOCATION ACTIVITY

START 1030 END 1200

WATER LEVEL / WELL DATA

WELL DEPTH 181.7 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.7 FT

PROTECTIVE CASING/WELL DIFF.

-0.75 FT

DEPTH TO WATER 93.56 FT

DEPTH OF SANDPACK 25 FT

WELL DIA. 2 INCH 4 INCH 6 INCH

WELL INTEGRITY: PROT. CASING SECURE CONCRETE COLLAR INTACT WELL LOCKED OTHER:

HEIGHT OF WATER COLUMN 88 FT

84 GAL/VOL 420 TOTAL GAL PURGED

PURGE WATER CONTAINED? YES NO

PURGE VOL. CALCULATION: [(HGT. OF WATER COL.) X .65] + [(AREA OF B.H. - AREA OF M.W.) X DEPTH OF SANDPACK X .3 PCR. X 7.48 GAL/CU FT] = 1 VOLUME

FIELD ANALYSIS DATA

AMBIENT AIR VOA 0.0 PPM

WELL MOUTH 0.0 PPM

PURGE VOLUME	a 84 GAL	a 168 AL	a 252 GAL	a 336 GAL	a 420 GAL
TEMP, DEG C	9.5	9.2	9.3	9.2	9.2
pH, UNITS	7.6	7.6	7.5	7.6	7.5
SPECIFIC CONDUCTIVITY umhos/cm	578	574	572	571	573

SAMPLE OBSERVATIONS

- CLEAR
- COLORED
- CLOUDY
- TURBID
- ODOR
- OTHER (SEE )

EQUIPMENT DOCUMENTATION

PURGING SAMPLING

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PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING TEFLON/SILICON TUBING AIR LIFT WATERRA IN-LINE FILTER PRESS/VAC FILTER

EQUIPMENT ID

inge standard no #

DF

DECONTAMINATED WATER HNO3/D.I. WATER POTABLE WATER TSP SOLUTION NONE

WATER LEVEL EQUIP. USED ELECTRIC COND. PROBE FLOAT ACTIVATED KECK INTERFACE PROBE OTHER

NUMBER OF FILTER PAPERS USED

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/> VOA	N-8	NO	4 DEG C	2-40 ML	112 / 113 / / /

NOTES

- \* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.
- No capon well.
- Purge water contained and emptied into BAAP sewer system.
- Pump rate = 5 gal./min.

GROUNDWATER ELEVATION:

SIGNATURE R. David Densmore

E.C. JORDAN CO.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NO.

SPN8903B

WEATHER

Sunny/50°

PROJECT USATHAMA-BAAP

PROGRAM 326

SITE TYPE

Well

FILE NAME

CGW

JOB NUMBER

6298-12

SAMPLING DATE

24 OCT 90

SITE ID

SPN-89-03B

LOCATION ACTIVITY

START 1330 END 1430

WATER LEVEL / WELL DATA

WELL DEPTH 95.6 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

3.0 FT

PROTECTIVE CASING/WELL DIFF. -0.12 FT

DEPTH TO WATER 55.48 FT

DEPTH OF SANDPACK 11 FT

WELL MATERIAL: PVC SS

WELL DIA. 2 INCH 4 INCH 6 INCH

WELL INTEGRITY: PROT. CASING SECURE CONCRETE COLLAR INTACT WELL LOCKED OTHER:

HEIGHT OF WATER COLUMN 40 FT

38 GAL/VOL 190 TOTAL GAL PURGED

PURGE WATER CONTAINED? YES NO

PURGE VOL. CALCULATION: [(HGT. OF WATER COL.) X .65] + [(AREA OF B.H. - AREA OF M.W.) X DEPTH OF SANDPACK X .3 POR. X 7.48 GAL/CU FT] = 1 VOLUME

FIELD ANALYSIS DATA

AMBIENT AIR VOA 0.0 PPM

WELL MOUTH 0.0 PPM

PURGE VOLUME	a 38 GAL	a 76 AL	a 114 GAL	a 152 GAL	a 190 GAL
TEMP, DEG C	8.8	8.9	8.8	8.9	8.8
pH, UNITS	7.9	7.7	7.7	7.7	7.7
SPECIFIC CONDUCTIVITY umhos/cm	521	518	517	517	515

SAMPLE OBSERVATIONS

- CLEAR
- COLORED
- CLOUDY
- TURBID
- OOR
- OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

- PURGING
- SAMPLING
- PERISTALTIC PUMP
- SUBMERSIBLE PUMP
- BAILER
- PVC/SILICON TUBING
- TEFLON/SILICON TUBING
- AIR LIFT
- WATERRA
- IN-LINE FILTER
- PRESS/VAC FILTER

EQUIPMENT ID Inge Standard no #

- DECON FLUIDS USED
- LIQUI-NOX
- DEIONIZED WATER
- HNO3/D.I. WATER
- POTABLE WATER
- TSP SOLUTION
- NONE

- WATER LEVEL EQUIP. USED
- ELECTRIC COND. PROBE
- FLOAT ACTIVATED
- KECK INTERFACE PROBE
- OTHER

NUMBER OF FILTER PAPERS USED

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/> * VOA	NO	4 DEG C	2-40 ML	<input checked="" type="checkbox"/>	114 / 115 / / /

NOTES

- \* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.
- No capon well.
- Purge water contained and emptied into BAAP sewer system.
- Pump rate 6gals./min.

GROUNDWATER ELEVATION:

SIGNATURE R. David Dismore



E.C. JORDAN CO. FIELD SAMPLING NO. SPN 89 03 C WEATHER Sun 50°  
**FIELD DATA RECORD - GROUNDWATER** SITE TYPE Well FILE NAME CG  
 PROJECT USATHAMA-BAAP PROGRAM 206 JOB NUMBER 6298-12 SAMPLING DATE 24 OCT 90  
 SITE ID SPN-89-03C LOCATION ACTIVITY START 1450 END 1600

**WATER LEVEL / WELL DATA**

WELL DEPTH 129.3 FT  MEASURED  HISTORICAL  TOP OF WELL  TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) 2.9 FT PROTECTIVE CASING/WELL DIFF. -0.46 FT  
 DEPTH TO WATER 55.58 FT DEPTH OF SANDPACK 11 FT WELL DIA.  2 INCH  4 INCH  6 INCH WELL INTEGRITY: YES NO  
 HEIGHT OF WATER COLUMN 73 FT 60 GAL/VOL PURGE WATER CONTAINED?  YES  NO PURGE VOL. CALCULATION:  $[(\text{HGT. OF WATER COL.}) \times .65] + [(\text{AREA OF B.L.} - \text{AREA OF N.W.}) \times \text{DEPTH OF SANDPACK} \times .3 \text{ PCF} \times 7.48 \text{ GAL/CU FT}] = 1 \text{ VOLUME}$   
300 TOTAL GAL PURGED

**FIELD ANALYSIS DATA**

AMBIENT AIR VOA 0.0 PPM WELL MOUTH 0.0 PPM

PURGE VOLUME	a 60 GAL	a 120 GAL	a 180 GAL	a 240 GAL	a 300 GAL
TEMP, DEG C	<u>9.2</u>	<u>9.2</u>	<u>9.2</u>	<u>9.2</u>	<u>9.2</u>
PH, UNITS	<u>7.7</u>	<u>7.7</u>	<u>7.7</u>	<u>7.6</u>	<u>7.6</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>530</u>	<u>532</u>	<u>531</u>	<u>531</u>	<u>531</u>

SAMPLE OBSERVATIONS:  CLEAR  COLORED  CLOUDY  TURBID  ODOR  OTHER (SEE # )

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID Inge. Standard  
 SUBMERSIBLE PUMP  no  
 BAILER   
 PVC/SILICON TUBING   
 TEFLON/SILICON TUBING   
 AIR LIFT   
 WATERRA   
 IN-LINE FILTER   
 PRESS/VAC FILTER

DECON FLUIDS USED:  LIQUI-NOX  DEIONIZED WATER  HNO3/D.I. WATER  POTABLE WATER  TSP SOLUTION  NONE

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  KECK INTERFACE PROBE  OTHER

NUMBER OF FILTER PAPERS USED \_\_\_\_\_

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/> * VOA N-8	NO	4 DEG C	2-40 ML	<input type="checkbox"/>	<u>116 / 117 / / /</u>

**NOTES**

- \* VOA's to be analyzed are chloroform, carbon tetrachloride, trichloroethylene, 1,1-dichloroethylene and 1,2-dichloroethylene.
- No capon well.
- Purge water contained and emptied into BAAP sewer system.
- Pump rate = 6 gals/min
- large hole in ground on west side of well.

GROUNDWATER ELEVATION: \_\_\_\_\_

SIGNATURE R. David Kinmore

**Appendix G.3**  
**Field Data Records - Round One**

1111 = 5-315      1122 = 8-600      GW elev. = 314.26  
 2110 = 5-315      2120 = 8-600

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

BGM 91 01  
 2111-01

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID BGM-91-01

JOB NUMBER 6853-04

SAMPLING DATE 12-6-91

LOCATION ACTIVITY START 1315 END 1400

PROGRAM C

FILE NAME CGW

WEATHER CLOUDY 25°

**WATER LEVEL / WELL DATA**

WELL DEPTH 73 FT

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.40 FT

PROTECTIVE CASING/WELL DIFF. -0.14 FT

WATER DEPTH 61.75 FT

MEASURED  
 HISTORICAL

WELL DIAMETER 2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 59.49

HEIGHT OF WATER COLUMN 11.25 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

25 GAL/VOL

126 TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A

PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 OTHER: CAP

PURGE H2O CONTAINED? YES NO

WELL MATERIAL PVC SS

AMBIENT AIR PPM

WELL MOUTH PPM

**PURGE DATA**

PURGE VOLUME	15 25	15 34	15 35	15 40	15 45
TEMP, DEG C	8.7	8.9	8.7	8.7	8.7
PH, UNITS	8.24	8.25	8.23	8.22	8.24
SPECIFIC CONDUCTIVITY umhos/cm	531	328	530	384	579

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOUR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING SAMPLING  
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO #  
 GRUNDEGOS#  
 2" 4" #

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS Lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO PH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO PH<2			2117	022280.C
CA	YES	HNO3 TO PH<2				
NA	YES	HNO3 TO PH<2				
CD	YES	HNO3 TO PH<2				
CR	YES	HNO3 TO PH<2				
HG	YES	HNO3 TO PH<2				
PB	YES	HNO3 TO PH<2				
NI	YES	HNO3 TO PH<2				
BA	YES	HNO3 TO PH<2				
HARD	YES	HNO3 TO PH<2			2117	022280.C
NIT	YES	H2SO4 TO PH<2	500 ML POLY		2118	042890.C
CL	YES	4 DEG C	500 ML POLY		2119	
SO4	YES	4 DEG C	500 ML POLY		2120	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO PH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO PH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		2121	021230.C
BN/A	NO	4 DEG C	(2) 1 L AG		2124	02250.C
HC	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO PH<2	1 L GUM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- volumes calculated from development

SIGNATURE: *Laura Cate PR*

RECEIVED BY: *Nancy E. Kopa*

WELL = 274.4  
 ELEV = 576.51

GW  
 ELEV = 798.76

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **BGM7102**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

16.7.

SITE ID **BGM-91-02**

JOB NUMBER **6853-04**

SAMPLING DATE **10-9-90**

LOCATION ACTIVITY **START ~~1500~~ 0830 END ~~1500~~ 0845**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **Clear**

### WATER LEVEL / WELL DATA

WELL DEPTH **35.67 FT**

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **3.35 FT**

PROTECTIVE CASING/WELL DIFF. **0.12 FT**

WATER DEPTH **77.85 FT**

MEASURED  
 HISTORICAL

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) **74.62**

HEIGHT OF WATER COLUMN **7.82 FT**

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

**17** GAL/VOL  
**85** TOTAL GAL PURGED **(85)**

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 OTHER:     

PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS

AMBIENT AIR **0** PPM  
 WELL MOUTH **0** PPM

### PURGE DATA

PURGE VOLUME	7.85	9.13	7.02	1.25	7.37
PURGE VOLUME	0.7 GAL	3.1 GAL	5.1 GAL	4.8 GAL	5.5 GAL
TEMP, DEG C	10.5	10.4	10.9	10.9	11.0
PH, UNITS	5.11	5.35	5.27	5.20	5.7
SPECIFIC CONDUCTIVITY umhos/cm	212	224	211	226	222

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OODR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP   
 SUBMERSIBLE PUMP   
 BAILER   
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER     

EQUIPMENT ID  
 ISCO #       
 GRUNDFOS #       
 2"  4" #     

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			2126	022801C
CA	SS16	HNO3 TO pH<2				
NA	SS16	HNO3 TO pH<2				
CD	SS16	HNO3 TO pH<2				
CR	SS16	HNO3 TO pH<2				
HG	SB03	HNO3 TO pH<2				
PB	SD24	HNO3 TO pH<2				
NI	SS16	HNO3 TO pH<2				
BA	SS16	HNO3 TO pH<2				
HARD	USEPA 130.2	HNO3 TO pH<2			2126	022801C
NIT	TF10	H2SO4 TO pH<2	500 ML POLY		2127	042810C
CL	TT08	4 DEG C	500 ML POLY		2128	
SO4	TT08	4 DEG C				
ALK	USEPA 310.1	4 DEG C	500 ML POLY		2129	
TDS	USEPA 160.1	4 DEG C				
TOC	USEPA 415.1					
NH3N2	USEPA 350.2	H2SO4 TO pH<2	(3) 40 ML VIAL			
VOC	UM17	H2SO4 TO pH<2	500 ML POLY			
BN/A	UM16	HCL, 4 DEG C	(3) 40 ML VIAL		2130	061230C
NG	99	4 DEG C	(2) 1 L AG		2133	061230C
NAM	UN06	4 DEG C	1 L AG			
DNT	UN26	4 DEG C	1 L AG			
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,HG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-volumes calculated from development  
 Pump started from 5pm to 2pm

SIGNATURE:       
 RECEIVED BY: Nancy E. [Signature]

477  
elev. = 801.1

riser  
elev. = 803.56

GW  
elev. = 733.15

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **BGM9103**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **BGM-91-03**

JOB NUMBER **6853-04**

SAMPLING DATE **1279**  
~~12-6-91~~ (M)

LOCATION ACTIVITY **START ~~150~~ 0900 END ~~115~~ 0945**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **SUNNY 40°**

### WATER LEVEL / WELL DATA

WELL DEPTH **101.77 FT**  MEASURED  HISTORICAL

WATER DEPTH **50.41 FT**  TOP OF WELL  TOP OF CASING  PROTECTIVE CASING STICK-UP (FROM GROUND) **22 FT**  PROTECTIVE CASING/WELL DIFF. **-0.14 FT**

HEIGHT OF WATER COLUMN **21.36 FT** X  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN) = **31 GAL/VOL**  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN) **155 TOTAL GAL PURGED (155)**

PURGE H2O CONTAINED?  YES  NO  PVC  SS **AMBIENT AIR 1.1 PPM** **WELL MOUTH 1.0 PPM**

### PURGE DATA

PURGE VOLUME	<b>31 GAL</b>	<b>6.2 GAL</b>	<b>7.5 GAL</b>	<b>12.4 GAL</b>	<b>15.5 GAL</b>	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>10.5</b>	<b>10.3</b>	<b>10.2</b>	<b>10.4</b>	<b>10.4</b>	
PH, UNITS	<b>8.33</b>	<b>8.30</b>	<b>8.32</b>	<b>8.30</b>	<b>8.39</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>616</b>	<b>611</b>	<b>615</b>	<b>605</b>	<b>605</b>	

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  EQUIPMENT ID  ISCO # \_\_\_\_\_

SAMPLING  SUBMERSIBLE PUMP  GRUNDEFS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING  WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE

IN-LINE/DISPOSABLE FILTER  POTABLE WATER  FLOAT ACTIVATED

OTHER \_\_\_\_\_  STEAM CLEANING  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<b>2135 / / / 022501C</b>
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<b>2135 / / / 0222801C</b>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<b>2136 / / / 0476101C</b>
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>	
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>	
MH342 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<b>2139 / 2140 / 2141 / 0212301C</b>
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<b>2142 / 2143 / / 0228101C</b>
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
DNT UM26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-volumes calculated from development

SIGNATURE: Cate RR

RECEIVED BY: Nancy E. Rota

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

BPW#2

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID BPW#2

JOB NUMBER

6853-04

SAMPLING DATE

12/3/97

LOCATION ACTIVITY START 1615 END 1630

PROGRAM

C

FILE NAME

CGW

WEATHER

Sunny, 20° S

### WATER LEVEL / WELL DATA

WELL DEPTH

FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

FT

PROTECTIVE CASING/WELL DIES

FT

WATER DEPTH

FT

WELL DIAMETER  
 2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION

HEIGHT OF WATER COLUMN

FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

RAA GAL/VOL

TOTAL GAL PURGED

PURGE H<sub>2</sub>O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR PPM

WELL MOUTH PPM

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER:

YES NO N/A

### PURGE DATA

PURGE VOLUME

~ 15 gpm

PURGE VOLUME	TEMP, DEG C	PH, UNITS	SPECIFIC CONDUCTIVITY umhos/cm	SAMPLE OBSERVATIONS
0.125 GAL	10.6	7.6	468	CLEAR
				CLOUDY
				COLOR
				TURBID
				ODOR
				OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID

ISCO # RAA  
GRUNDEFS#  
2" 4" #

RECON FLUIDS USED

POTABLE WATER  
LTOINOX  
STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
FLOAT ACTIVATED  
PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2			
CA	SS16	YES	HNO3 TO pH<2			
NA	SS16	YES	HNO3 TO pH<2			
CD	SS16	YES	HNO3 TO pH<2			
CR	SS16	YES	HNO3 TO pH<2			
HG	SB03	YES	HNO3 TO pH<2			
PB	SD24	YES	HNO3 TO pH<2			
NI	SS16	YES	HNO3 TO pH<2			
BA	SS16	YES	HNO3 TO pH<2			
HARD	USEPA 130.2	YES	HNO3 TO pH<2			
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		
CL	TT08	YES	4 DEG C	500 ML POLY		
SO4	TT08	YES	4 DEG C			
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		
TDS	USEPA 160.1	NO	4 DEG C			
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		
NG	99	NO	4 DEG C	1 L AG		
NAH	UM06	NO	4 DEG C	1 L AG		
DNT	UM26	NO	4 DEG C	1 L AG		
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- let H<sub>2</sub>O purge for 15 minutes and sample  
- No samples were filtered

SIGNATURE: Trace Vought

RECEIVED BY: Nancy E. [Signature]

346.1

843.29

765.27

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN9106C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-91-06C

JOB NUMBER 6853-04

SAMPLING DATE 12.6.91

LOCATION ACTIVITY START 0800 END 1000

PROGRAM C

FILE NAME CGW

WEATHER Cloudy 25°

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.48 FT

PROTECTIVE CASING/WELL DIFF. -0.23 FT

WELL DEPTH 203.5 FT

MEASURED  
 HISTORICAL

WATER DEPTH 83.02 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION 80.77  
TGS

HEIGHT OF WATER COLUMN 124.48 FT x  
.16 GAL/FT (2 IN)  
.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)  
GAL/FT ( IN)

101 GAL/VOL

508 TOTAL GAL PURGED (502)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR - PPM

WELL MOUTH - PPM

### PURGE DATA

	10:30	11:00	11:20	11:40	12:00
PURGE VOLUME	101 GAL	202 GAL	303 GAL	404 GAL	508 GAL
TEMP, DEG C	9.8	9.3	9.6	9.5	10.1
PH, UNITS	8.13	8.08	8.07	8.07	8.04
SPECIFIC CONDUCTIVITY umhos/cm	707	715	725	700	706

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING   
PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	SS lot #
<input checked="" type="checkbox"/>	PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/>	TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/>	CA	SS16	HNO3 TO pH<2				
<input checked="" type="checkbox"/>	NA	SS16	HNO3 TO pH<2				
<input checked="" type="checkbox"/>	CD	SS16	HNO3 TO pH<2				
<input checked="" type="checkbox"/>	CR	SS16	HNO3 TO pH<2				
<input checked="" type="checkbox"/>	HG	S803	HNO3 TO pH<2				
<input checked="" type="checkbox"/>	PB	SD24	HNO3 TO pH<2				
<input checked="" type="checkbox"/>	NI	SS16	HNO3 TO pH<2				
<input checked="" type="checkbox"/>	BA	SS16	HNO3 TO pH<2				
<input checked="" type="checkbox"/>	HARD	USEPA 130.2	HNO3 TO pH<2				
<input checked="" type="checkbox"/>	MIT	TF10	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/>	CL	TT08	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/>	SO4	TT08	4 DEG C				
<input checked="" type="checkbox"/>	ALK	USEPA 310.1	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/>	TDS	USEPA 160.1	4 DEG C				
<input checked="" type="checkbox"/>	TOC	USEPA 415.1					
<input checked="" type="checkbox"/>	NH3N2	USEPA 350.2	H2SO4 TO pH<2	(3) 40 ML VIAL			
<input checked="" type="checkbox"/>	VOC	UM17	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/>	BN/A	UM16	HCL, 4 DEG C	(3) 40 ML VIAL			
<input checked="" type="checkbox"/>	NG	99	4 DEG C	(2) 1 L AG			
<input checked="" type="checkbox"/>	NAM	UN06	4 DEG C	1 L AG			
<input checked="" type="checkbox"/>	DNT	UN26	4 DEG C	1 L AG			
<input checked="" type="checkbox"/>	TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

- volumes based on well development

SIGNATURE: Jane Cate RR  
RECEIVED BY: Nancy E Rora

2nd elev = 8120 riser elev = 847.50 GW elev = 765.29

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN9106D

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-91-06D

JOB NUMBER 6853-04

SAMPLING DATE 12-6-91

LOCATION ACTIVITY START 0800 END 1030

PROGRAM C

FILE NAME CGW

WEATHER CLOUDY 25°

### WATER LEVEL / WELL DATA

WELL DEPTH 254 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) 2.5 FT

PROTECTIVE CASING/WELL DIFF. -0.20 FT

WATER DEPTH 82.21 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (EGS) 79.91

HEIGHT OF WATER COLUMN 171.79 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_\_\_ IN)

138 GAL/VOL  
691 TOTAL GAL PURGED (691)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR --- PPM

WELL MOUTH --- PPM

### PURGE DATA

	9:23	9:51	10:49	10:47	11:25
PURGE VOLUME	138 GAL	276 GAL	414 GAL	551 GAL	691 GAL
TEMP, DEG C	9.3	9.4	9.8	9.4	9.8
pH, UNITS	8.50	8.22	8.21	8.17	8.14
SPECIFIC CONDUCTIVITY umhos/cm	695	702	686	704	701

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2			
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		
CL TT08	YES	4 DEG C	500 ML POLY		
SO4 TT08	YES	4 DEG C	500 ML POLY		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		
BN/A UM16	NO	4 DEG C	(2) 1 L AG		
NG 99	NO	4 DEG C	1 L AG		
NAM UN06	NO	4 DEG C	1 L AG		
DNT UW26	NO	4 DEG C	1 L AG		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- volumes based from well development

SIGNATURE: *Laura Cate RR*

RECEIVED BY: *Nancy E. R...*



2:11  
 8552 = 8552 METER elev = 854.42 GW elev = 764.07

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_ OF \_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

PBN9112C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.4.91

SITE ID PBN-91-12C

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 13301405 END 1530

PROGRAM C

WEATHER Sunny 15°F

**WATER LEVEL / WELL DATA**

WELL DEPTH 186 FT

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.55 FT

PROTECTIVE CASING/WELL DIFF. -0.07 FT

WATER DEPTH 90.35 FT

MEASURED  
 HISTORICAL

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 87.87

HEIGHT OF WATER COLUMN 95.65 FT X  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_\_\_ IN)

94 GAL/VOL

468 TOTAL GAL PURGED (462)

WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: CAP

PURGE H<sub>2</sub>O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

**PURGE DATA**

	14:24	14:43	15:02	15:21	15:25:40
PURGE VOLUME	237 GAL	186 GAL	245 GAL	332 GAL	468 GAL
TEMP, DEG C	7.8	7.3	7.5	7.40	7.1
PH, UNITS	7.16	7.84	7.78	7.80	7.89
SPECIFIC CONDUCTIVITY umhos/cm	638	649	647	623	638

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDFOS # \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
<input type="checkbox"/> CA	SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA	SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD	SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR	SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG	SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB	SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI	SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA	SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD	USEPA 130.2	YES	HNO3 TO pH<2				
<input type="checkbox"/> NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> CL	TT08	YES	4 DEG C	500 ML POLY			
<input type="checkbox"/> SO4	TT08	YES	4 DEG C				
<input type="checkbox"/> ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/> TDS	USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
<input type="checkbox"/> BN/A	UM16	NO	4 DEG C	(2) 1 L AG			
<input type="checkbox"/> NG	99	NO	4 DEG C	1 L AG			
<input type="checkbox"/> NAM	UN06	NO	4 DEG C	1 L AG			
<input type="checkbox"/> DNT	UW26	NO	4 DEG C	1 L AG			
<input type="checkbox"/> TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES**

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METAL (AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- volumes based on well volumes calculated for development
- No Bow-tape sticks to side of well

SIGNATURE: Laura E. Carter  
 RECEIVED BY: Nancy E. Kaska

2nd elev. = 851.3

riser elev. = 855.29

GW elev. = 764.02

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN9112D

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-91-12D

JOB NUMBER 6853-04

SAMPLING DATE 12-4-91

LOCATION ACTIVITY START 133055 END 1600

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 15°F

### WATER LEVEL / WELL DATA

WELL DEPTH 233 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.50 FT

PROTECTIVE CASING/WELL DIFF. -.19 FT

WATER DEPTH 89.27 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 86.96

HEIGHT OF WATER COLUMN 143.73 FT X  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

125 GAL/VOL

627 TOTAL GAL PURGED (627)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO  
WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM WELL MOUTH 0 PPM

### PURGE DATA

	14:20	14:45	15:10	15:35	16:00
PURGE VOLUME	@ 125 GAL	@ 250 GAL	@ 375 GAL	@ 500 GAL	@ 627 GAL
TEMP, DEG C	7.70	8.5	7.6	8.1	7.4 7.6
pH, UNITS	7.850	7.77	7.85	7.87	7.84 7.87
SPECIFIC CONDUCTIVITY umhos/cm	660	663	644	646	638 660

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
 BAILER  GRUNDEFS# \_\_\_\_\_  
 PVC/SILICON TUBING  2"  4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TFO	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C	500 ML POLY			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNV UN26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- volumes based on well volumes calculated for well development.

- No flow - tape sticks to side of well

SIGNATURE: *Laura E. Cate*

RECEIVED BY: *Nancy E. R...*

Grid  
Plan = 800

USER = 572.33  
ELEV.

GW  
ELEV. = 768.24

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8901B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-89-01B

JOB NUMBER 6853-04

SAMPLING DATE 11/09/91

LOCATION ACTIVITY START 1200 END 1400

PROGRAM C

FILE NAME CGW

WEATHER overcast, 10-20°F

### WATER LEVEL / WELL DATA

WELL DEPTH 1600 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.50 FT

PROTECTIVE CASING/WELL DIFF. -0.16 FT

WATER DEPTH 104.09 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 101.75

HEIGHT OF WATER COLUMN 58 FT  
0.16 GAL/FT (2 IN)  
0.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)  
GAL/FT (IN)

49 GAL/VOL  
245 TOTAL GAL PURGED

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 1.5 PPM

WELL MOUTH 1.5 PPM

### PURGE DATA

PURGE VOLUME	@ 49 GAL	@ 98 GAL	@ 147 GAL	@ 196 GAL	@ 245 GAL
TEMP, DEG C	10.2	10.2	10.5	9.8	11.0
pH, UNITS	7.7	7.3	7.2	7.3	7.1
SPECIFIC CONDUCTIVITY umhos/cm	760	703	701	696	701

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ISS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT TFI0	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\* see attached for volume calculations  
\* containerized purge H2O for VOC's

SIGNATURE: Paul C. Smith/MM  
RECEIVED BY: Nancy E. Roper

222 = 875.7

riser elev. = 878.06

GW elev. = 768.58

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**PBN2901C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

WELL ID **PBN-29-01C**

JOB NUMBER **6853-04**

SAMPLING DATE **11-12-91**

LOCATION ACTIVITY **START 11-11-91 1245/1700 END 11-12-91 1230/0830**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **overcast 30's**

### WATER LEVEL / WELL DATA

WELL DEPTH **201** FT

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.64** FT

PROTECTIVE CASING/WELL DIFF. **-0.26** FT

WATER DEPTH **109.68** FT

MEASURED  
 HISTORICAL

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) **107.3**

HEIGHT OF WATER COLUMN **91.32** FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN) = **78** GAL/VOL  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_\_\_ IN)

TOTAL GAL PURGED **390**

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: **cap**

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR \_\_\_\_\_ PPM

WELL MOUTH \_\_\_\_\_ PPM

### PURGE DATA

	11-11-91	11-11-91	11-11-91	11-11-91	11-12-91
PURGE VOLUME	<b>70</b> GAL	<b>150</b> GAL	<b>234</b> GAL	<b>92</b> GAL	<b>390</b> GAL
TEMP, DEG C	<b>11.7</b>	<b>11.5</b>	<b>12.0</b>	<b>11.5</b>	<b>11.4</b>
pH, UNITS	<b>7.4</b>	<b>6.8</b>	<b>6.7</b>	<b>7.3</b>	<b>7.5</b>
SPECIFIC CONDUCTIVITY umhos/cm	<b>675</b>	<b>673</b>	<b>672</b>	<b>672</b>	<b>672</b>

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDEOS# \_\_\_\_\_  
2"  4"

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
TL10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input type="checkbox"/>		
UM16	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>		
99	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
UN06	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
UN26	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

see attached for volume calculations  
\* purge H2O contained for VOC's  
- At 0:1700 still had 90 gal to purge. Already dark. 2 samples called in. I will finish tomorrow (11-12-91)  
- PVC cap cracked. 1 full volume collected on 11-12-91

SIGNATURE: RLK S. H. / J. M.

RECEIVED BY: Nancy E R

elev. = 8115    rser elev. = 874.05    GW elev. = 768.45  
 elev. = 8115    rser elev. = 874.05    GW elev. = 768.45

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP      FIELD SAMPLING NUMBER: **PBN8901D**  
 SITE ID: **PBN-89-01D**      SITE TYPE: WELL  
 LOCATION ACTIVITY: START **1300** END **1530**      JOB NUMBER: 6853-04      SAMPLING DATE: **12.8.91**  
 PROGRAM: C      FILE NAME: CGW  
 WEATHER: **foggy, 40°f**

### WATER LEVEL / WELL DATA

TOP OF WELL    PROTECTIVE CASING STICK-UP (FROM GROUND) **2 52 FT**  
 TOP OF CASING    PROTECTIVE CASING/WELL DIFF. **- 0.50 FT**  
 WELL DEPTH: **240 FT**     MEASURED     HISTORICAL  
 WATER DEPTH: **105.6 FT**  
 WELL DIAMETER:  2 INCH     4 INCH     6 INCH  
 GROUNDWATER ELEVATION (BGS): **103.58**  
 HEIGHT OF WATER COLUMN: **134.4 FT**     .16 GAL/FT (2 IN)     .65 GAL/FT (4 IN)     1.5 GAL/FT (6 IN)     GAL/FT (\_\_\_ IN)  
**108** GAL/VOL    **539** TOTAL GAL PURGED    **539**  
 PURGE H2O CONTAINED?  YES     NO    WELL MATERIAL:  PVC     SS    AMBIENT AIR: **0.6** PPM    WELL MOUTH: **0.5** PPM  
 WELL INTEGRITY: PROT. CASING SECURE  YES     NO     N/A  
 CONCRETE COLLAR INTACT  YES     NO     N/A  
 WELL LOCKED  YES     NO     N/A  
 OTHER: \_\_\_\_\_

### PURGE DATA

PURGE VOLUME	13 56	14 32	15 08	15 44	16 20
PURGE VOLUME	@ 2105 GAL	@ 216 GAL	@ 324 GAL	@ 432 GAL	@ 537 GAL
TEMP, DEG C	10.7	10.6	10.1	10.1	10.2
pH, UNITS	5.71	5.41	5.74	5.32	5.30
SPECIFIC CONDUCTIVITY umhos/cm	695	649	670	623	597

SAMPLE OBSERVATIONS:  CLEAR     CLOUDY     COLORED     TURBID     OOR     OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP    EQUIPMENT ID: ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP    GRUNDFOS# \_\_\_\_\_  
 BAILER     2"     4" # \_\_\_\_\_  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED:  POTABLE WATER    WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 LIQUINOX     FLOAT ACTIVATED  
 STEAM CLEANING     PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED: **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- see attached for volumes  
 SIGNATURE: Juan Cate RR  
 RECEIVED BY: Nancy E. Roka

grd. elev. = 877.6

riser elev. = 900.25

GW elev. = 767.35

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

FBN 8902B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-89-02B

JOB NUMBER 6853-04

SAMPLING DATE 11 21 91

LOCATION ACTIVITY START 1230 END 1400

PROGRAM C

FILE NAME CGW

WEATHER CLDY 40°F

### WATER LEVEL / WELL DATA

WELL DEPTH 160.1 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.73 FT

PROTECTIVE CASING/WELL DIFF. -.21 FT

WATER DEPTH 132.90 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 130.38

HEIGHT OF WATER COLUMN 27.2 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN) = 30 GAL/VOL  
 1.5 GAL/FT (6 IN) = 150 TOTAL GAL PURGED  
 GAL/FT (\_\_\_ IN)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0.0 PPM

### PURGE DATA

PURGE VOLUME	30 GAL	60 GAL	90 GAL	120 GAL	150 GAL
TEMP, DEG C	10.2	10.3	10.3	10.2	10.3
pH, UNITS	7.6	7.6	7.5	7.6	7.7
SPECIFIC CONDUCTIVITY umhos/cm	682	681	681	678	682

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

URGING SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_  
GRUNDFOS# \_\_\_\_\_  
2"  4"

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			
NA	SS16	YES	HNO3 TO pH<2			
CD	SS16	YES	HNO3 TO pH<2			
CR	SS16	YES	HNO3 TO pH<2			
HG	SB03	YES	HNO3 TO pH<2			
PB	SD24	YES	HNO3 TO pH<2			
NI	SS16	YES	HNO3 TO pH<2			
BA	SS16	YES	HNO3 TO pH<2			
HARD	USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly	361	n428101C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	362	
CL	TT08	YES	4 DEG C	500 ML POLY	363	
SO4	TT08	YES	4 DEG C			
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	364	
TDS	USEPA 160.1	NO	4 DEG C			
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
JC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	372365MP	366 / 367 / 6212301C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		
NG	99	NO	4 DEG C	1 L AG		
NAM	UN06	NO	4 DEG C	1 L AG	370	0123101C
DNT	UN26	NO	4 DEG C	1 L AG	371	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* purge H2O containerized for voc's  
- see attached for volume calculations

SIGNATURE: *R. C. Smith*  
RECEIVED BY: *Nancy E. Roman*

orig elev = 894.5

riser elev = 897.04

GW elev = 767.53

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8902C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-89-02C

JOB NUMBER 6853-04

SAMPLING DATE 11-21-91

LOCATION ACTIVITY START 1430 END 1630

PROGRAM C

FILE NAME CGW

WEATHER CLDY 40° F

### WATER LEVEL / WELL DATA

MEASURED  HISTORICAL

TOP OF WELL PROTECTIVE  TOP OF CASING PROTECTIVE

WELL DEPTH 195.1 FT CASING STICK-UP (FROM GROUND) 2.39 FT PROTECTIVE CASING/WELL DIFF. -0.36 FT

WATER DEPTH 129.51 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION 127.48 (B7C)

HEIGHT OF WATER COLUMN 65.59 FT

16 GAL/FT (2 IN) 55 GAL/VOL

1.5 GAL/FT (6 IN) 275 TOTAL GAL PURGED

YES  NO PURGE H2O CONTAINED? WELL MATERIAL  PVC  SS AMBIENT AIR 0.3 PPM WELL MOUTH 0.4 PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: Cap

### PURGE DATA

PURGE VOLUME	@ 55 GAL	@ 110 GAL	@ 165 GAL	@ 220 GAL	@ 275 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.3	10.3	10.3	10.2	10.2	
pH, UNITS	7.7	7.3	7.3	7.4	7.5	
SPECIFIC CONDUCTIVITY umhos/cm	675	661	660	650	659	

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_

SAMPLING  SUBMERSIBLE PUMP  GRUNDFOS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  ELECTRIC COND. PROBE

LIQUINOX  FLOAT ACTIVATED

STEAM CLEANING  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		
NI7 TFO	YES	H2SO4 TO pH<2	500 ML POLY		373 / 022610C
CL TT08	YES	4 DEG C	500 ML POLY		374 /
SO4 TT08	YES	4 DEG C	500 ML POLY		375 /
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		376 /
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		
BN/A UM16	NO	4 DEG C	(2) 1 L AG		377 / 378 / 379 / 021230C
NG 99	NO	4 DEG C	1 L AG		
NAM UN06	NO	4 DEG C	1 L AG		382 / 022810C
DNT UM26	NO	4 DEG C	1 L AG		383 /
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for VOC's  
 - see attached for volume calculations

SIGNATURE: Paul S. Smith / mm  
 RECEIVED BY: Nancy E. Rofa

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN 8903B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-89-03B

JOB NUMBER 6853-04

SAMPLING DATE 11.7.91

LOCATION ACTIVITY START 1345 END 1500

PROGRAM C

FILE NAME CSW

WEATHER Sunny, 10°-20° F  
w. rctly

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND)  TOP OF CASING

WELL DEPTH 128 FT  MEASURED  HISTORICAL

WATER DEPTH 79.57 FT

HEIGHT OF WATER COLUMN 48.43 FT

PROTECTIVE CASING/WELL DIFF. -0.02 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) 77.05

PROT. CASING SECURE  YES  NO

CONCRETE COLLAR INTACT  YES  NO

WELL LOCKED  YES  NO

OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.3 PPM

WELL MOUTH 0.0 PPM

PROTECTIVE CASING STICK-UP (FROM GROUND) 254 FT

WELL INTEGRITY: PROT. CASING SECURE  YES  NO

CONCRETE COLLAR INTACT  YES  NO

WELL LOCKED  YES  NO

OTHER: cap

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) 77.05

PROT. CASING SECURE  YES  NO

CONCRETE COLLAR INTACT  YES  NO

WELL LOCKED  YES  NO

OTHER: cap

PROTECTIVE CASING STICK-UP (FROM GROUND) 254 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) 77.05

PROT. CASING SECURE  YES  NO

CONCRETE COLLAR INTACT  YES  NO

WELL LOCKED  YES  NO

OTHER: cap

### PURGE DATA

PURGE VOLUME	a 9.8 GAL	b 9.9 GAL	c 10.1 GAL	d 10.2 GAL	e 10.1 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	9.8	9.9	10.1	10.2	10.1	<input checked="" type="checkbox"/> CLEAR
PH, UNITS	7.5	7.5	7.3	7.3	7.2	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	653	624	654	651	652	<input type="checkbox"/> COLORED
						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID ISCO # \_\_\_\_\_

SAMPLING  SUBMERSIBLE PUMP GRUNDFOS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING \_\_\_\_\_

IN-LINE/DISPOSABLE FILTER \_\_\_\_\_

OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		
NIT TFIG	YES	H2SO4 TO pH<2	500 ML POLY	365	0703101C
CL TT08	YES	4 DEG C	500 ML POLY	386	
SO4 TT08	YES	4 DEG C	500 ML POLY	387	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	388	
TDS USEPA 160.1	NO	4 DEG C			
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL	389	390 391 0812301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		
NG 99	NO	4 DEG C	1 L AG		
NAM UM06	NO	4 DEG C	1 L AG	394	0124101C
DNT UW26	NO	4 DEG C	1 L AG	395	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GVM		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL: GFAA, KNA: PCP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL: GFAA, KNA: PCP)

\* See attached for volume calculations

\* purge H2O containerized for VOC's

SIGNATURE: *[Signature]*

RECEIVED BY: Nancy E. [Signature]



475  
262 = 846.87  
RSD = 846.87  
GW  
2100 = 768.22

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN 8903C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **PBN-89-03C**

JOB NUMBER **6853-04**

SAMPLING DATE **11-7-91**

LOCATION ACTIVITY **START 1330 END 1500**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **Sunny, 10°-20°**

### WATER LEVEL / WELL DATA

TOP OF WELL MEASURED  
 TOP OF CASING HISTORICAL

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.65 FT**

PROTECTIVE CASING/WELL DIFF. **-0.15 FT**

WELL DEPTH **160 FT**

WATER DEPTH **78.65 FT**

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) **76.15**

HEIGHT OF WATER COLUMN **81 FT**

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN) = **60 GAL/VOL**  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_\_\_ IN)

**331** TOTAL GAL PURGED

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR PPM **1** WELL MOUTH PPM **1**

WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: \_\_\_\_\_

### PURGE DATA

PURGE VOLUME	<b>2.65</b> GAL	<b>2.12</b> GAL	<b>2.150</b> GAL	<b>2.24</b> GAL	<b>2.30</b> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>9.9</b>	<b>10.4</b>	<b>10.6</b>	<b>10.2</b>	<b>9.9</b>	
PH, UNITS	<b>7.9</b>	<b>7.2</b>	<b>7.4</b>	<b>7.5</b>	<b>7.4</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>745</b>	<b>751</b>	<b>763</b>	<b>756</b>	<b>752</b>	

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_ GRUNDEOS# \_\_\_\_\_ 2" 4" # \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2	500 ml Poly			
NIT	YES	H2SO4 TO pH<2	500 ML POLY			
CL	YES	4 DEG C	500 ML POLY			
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GUM			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- See attached for volume calculations  
 STARTED PURGING PRIOR TO FINAL 5 VOLUME AMOUNT  
 USED 2.1" DATA. 331 GAL'S IS CORRECT TOTAL

SIGNATURE: RICSH/MN  
 RECEIVED BY: Nancy E. Rota

grid elev = 856.9

riser elev = 859.23

GW elev = 766.04

# ABB ENVIRONMENTAL SERVICES, INC.

FBN 89048

PAGE 0

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

FBN-89048

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID FBN-89-048

JOB NUMBER 6853-04

SAMPLING DATE 11/7/97

LOCATION ACTIVITY START 1230 END 1400

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 60°

### WATER LEVEL / WELL DATA

WELL DEPTH 148 FT

MEASURED HISTORICAL

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.42 FT

PROTECTIVE CASING/WELL DIFF. -.24 FT

WATER DEPTH 93.19 FT

WELL DIAMETER 2 INCH 4 INCH 6 INCH

GROUNDWATER ELEVATION (BGS) 91.01

HEIGHT OF WATER COLUMN 548 FT X .16 GAL/FT (2 IN) .65 GAL/FT (4 IN) 1.5 GAL/FT (6 IN) GAL/FT (IN)

55 GAL/VOL 275 TOTAL GAL PURGED

WELL INTEGRITY: PROT. CASING SECURE YES NO YES CONCRETE COLLAR INTACT YES NO YES WELL LOCKED YES NO YES OTHER: CR

PURGE H2O CONTAINED? YES NO WELL MATERIAL PVC SS AMBIENT AIR PPM WELL MOUTH PPM

### PURGE DATA

PURGE VOLUME	@ 55 GAL	@ 110 GAL	@ 165 GAL	@ 220 GAL	@ 275 GAL
TEMP, DEG C	9.8	9.5	7.4	9.8	10.2
PH, UNITS	6.7	7.0	7.2	7.3	7.4
SPECIFIC CONDUCTIVITY umhos/cm	757	740	751	766	757

SAMPLE OBSERVATIONS: CLEAR, CLOUDY, COLORED, TURBID, ODOUR, OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER

EQUIPMENT ID ISCO # GRUNDEOS# 2" 4" #

DECON FLUIDS USED POTABLE WATER LIQUINOX STEAM CLEANING

WATER LEVEL EQUIP. USED ELECTRIC COND. PROBE FLOAT ACTIVATED PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP) TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* purge H2O contained for VOC's SEE CALCULATIONS ON FOLLOWING SHEET FOR VOLUMES

SIGNATURE: [Signature] RECEIVED BY: Nancy E. Korte

201 0577 8587 = 359.70 944 = 745.66

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP FIELD SAMPLING NUMBER: PBN8904C

SITE ID: PBN-89-04C SITE TYPE: WELL SAMPLING DATE: 11.9.97

LOCATION ACTIVITY: START 0800 END 1100 JOB NUMBER: 6853-04 FILE NAME: CGW

PROGRAM: C WEATHER: Sunny, 210°F

**WATER LEVEL / WELL DATA**

WELL DEPTH: 3185 FT  MEASURED  HISTORICAL

WATER DEPTH: 74.4 FT

HEIGHT OF WATER COLUMN: 2391 FT

TOP OF WELL:  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 2.70 FT

PROTECTIVE CASING/WELL DIFF.: - .51 FT

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS): 92.15

HEIGHT OF WATER COLUMN:  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)

TOTAL GAL PURGED: 425 (423)

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL:  PVC  SS

AMBIENT AIR: .5 PPM WELL MOUTH: .5 PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO CONCRETE COLLAR INTACT  YES  NO WELL LOCKED  YES  NO OTHER:  YES  NO

**PURGE DATA**

PURGE VOLUME	a 85 GAL	a 170 GAL	a 255 GAL	a 340 GAL	a 425 GAL
TEMP, DEG C	10.5	10.1	10.3	10.0	10.2
PH, UNITS	7.8	6.8	7.3	7.1	6.7
SPECIFIC CONDUCTIVITY umhos/cm	709	702	702	690	698

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

SAMPLING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

EQUIPMENT ID: ISCO # \_\_\_\_\_ GRUNDEOS# \_\_\_\_\_ 2" # \_\_\_\_\_ 4" # \_\_\_\_\_

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED: 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	H2SO4 TO pH<2	500 ML POLY			
CL	YES	4 DEG C	500 ML POLY			
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:100)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:100)

\* See attached for volume calculations

- purge H2O containerized for VOC's

SIGNATURE: \_\_\_\_\_ RECEIVED BY: Nancy E. Rora

3171  
2120 = 858 3

2120 = 855 52

2120 = 763 01

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM8905

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBM-89-05

JOB NUMBER 6853-04

SAMPLING DATE 11-9-91

LOCATION ACTIVITY START 1200 END 1315

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 10-20° F  
windy

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 3.02 FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. -1.16 FT

WELL DEPTH 92.16 FT MEASURED HISTORICAL

WATER DEPTH 87.57 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) 24.39

HEIGHT OF WATER COLUMN 12.4 FT

.16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN)

7.21 GAL/VOL

105 TOTAL GAL PURGED

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR PPM WELL MOUTH PPM

### PURGE DATA

PURGE VOLUME	@ 7 GAL	@ 14 GAL	@ 21 GAL	@ 28 GAL	@ 35 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.9	10.1	9.6	9.8	9.8	
PH, UNITS	7.0	7.5	7.4	7.5	7.4	
SPECIFIC CONDUCTIVITY umhos/cm	705	702	703	702	704	

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP EQUIPMENT ID ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP EQUIPMENT ID GRUNDEFS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		409	0703101
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		410	
CL	TT08	YES	4 DEG C	500 ML POLY		411	
SO4	TT08	YES	4 DEG C			412	
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS	USEPA 160.1	NO	4 DEG C				
TCC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		413	02123010
BN/A	UM16	NO	4 DEG C	(2) 1 L AG			
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG		418	0228101
DNT	UW26	NO	4 DEG C	1 L AG		419	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA,105)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,HG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA,105)

\* See attached for volume calculations  
 - purge H2O containerized for VOC's

SIGNATURE: \_\_\_\_\_  
 RECEIVED BY: \_\_\_\_\_

grnd elev = 883.7

riser elev = 886.37

GW elev = 777.57

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBM8706**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **11-11-91**

SITE ID **PBM-87-06**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START ~~1500~~ 0800 END ~~1600~~ 1000**

PROGRAM **C**

WEATHER **Snow, 42°F**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **2.56** FT  
 PROTECTIVE CASING/WELL DIFF. **-0.21** FT

WELL DEPTH **50** FT  
 MEASURED  
 HISTORICAL

WATER DEPTH **109.0** FT  
 WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

HEIGHT OF WATER COLUMN **41** FT  
 1.6 GAL/FT (2 IN)  
 1.65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_\_\_ IN)

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 OTHER: **cap**

PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS

AMBIENT AIR **15** PPM  
 WELL MOUTH **13** PPM

### PURGE DATA

PURGE VOLUME	<b>262</b> GAL	<b>224</b> GAL	<b>186</b> GAL	<b>220</b> GAL	<b>310</b> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>11.4</b>	<b>11.1</b>	<b>10.8</b>	<b>11.4</b>	<b>11.2</b>	
pH, UNITS	<b>7.5</b>	<b>7.6</b>	<b>7.6</b>	<b>7.1</b>	<b>7.5</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>716</b>	<b>708</b>	<b>711</b>	<b>714</b>	<b>711</b>	

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDFOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2	500 ml poly		421	0703101C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		422	
CL	YES	4 DEG C	500 ML POLY		423	
SO4	YES	4 DEG C	500 ML POLY		424	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		425	0212301C
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		430	0.28101C
DNT	NO	4 DEG C	1 L AG		431	
TPH	NO	H2SO4 TO pH<2	1 L GMM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* containerized purge H2O for VOC's  
 \* see attached for volume calculations  
 \* PI meter was left in van while gas being purged. exposed to volatiles in abundance & could need time to equilibrate

SIGNATURE: *[Signature]*  
 RECEIVED BY: *Narayan E. Patra*

- Got measurements on 11-10-91, but there wasn't enough time before dark to do well with sample 11-11-91. Purging with pump - finished ~ 1200

ord. elev = 846.6

riser elev = 849.36

GW elev = 765.76

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM8907

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SAMPLING DATE

11.7.91

SITE ID PBM-89-07

JOB NUMBER

6853-04

FILE NAME

CGW

LOCATION ACTIVITY START 1115 END 1330

PROGRAM

C

WEATHER

Sunny, 0°-10° F

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.57 FT

PROTECTIVE CASING/WELL DIFF.

-0.35 FT

WELL DEPTH 92.0 FT

MEASURED  
 HISTORICAL

WATER DEPTH 84.0 FT

HEIGHT OF WATER COLUMN 8.6 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( \_ IN)

14 GAL/VOL  
70 TOTAL GAL PURGED

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

81.18

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.9 PPM

WELL MOUTH 0.8 PPM

WELL INTEGRITY: PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER:

### PURGE DATA

PURGE VOLUME	@ <u>14</u> GAL	@ <u>20</u> GAL	@ <u>42</u> GAL	@ <u>56</u> GAL	@ <u>70</u> GAL
TEMP, DEG C	<u>9.5</u>	<u>9.8</u>	<u>10.0</u>	<u>9.8</u>	<u>9.8</u>
PH, UNITS	<u>8.0</u>	<u>7.8</u>	<u>7.0</u>	<u>7.8</u>	<u>7.8</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>595</u>	<u>598</u>	<u>604</u>	<u>604</u>	<u>604</u>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOCR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS#  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA	YES	HNO3 TO pH<2			
NA	YES	HNO3 TO pH<2			
CD	YES	HNO3 TO pH<2			
CR	YES	HNO3 TO pH<2			
HG	YES	HNO3 TO pH<2			
PB	YES	HNO3 TO pH<2			
NI	YES	HNO3 TO pH<2			
BA	YES	HNO3 TO pH<2			
HARD	YES	HNO3 TO pH<2	500 ml poly		
NIT	YES	H2SO4 TO pH<2	500 ML POLY		
CL	YES	4 DEG C	500 ML POLY		
SO4	YES	4 DEG C			
ALK	NO	4 DEG C	500 ML POLY		
TDS	NO	4 DEG C			
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		
BN/A	NO	4 DEG C	(2) 1 L AG		
NG	NO	4 DEG C	1 L AG		
NAM	NO	4 DEG C	1 L AG		
DNT	NO	4 DEG C	1 L AG		
TPH	NO	H2SO4 TO pH<2	1 L GWM		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* See attached for volume calculations  
- used ~~historical~~ well depth MP

SIGNATURE: Paul C. Smith  
RECEIVED BY: Nancy E. R...

Flow = 885.5

Flow = 388.56

GW Elev = 765.90

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

P B M 8 9 0 8

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID P B M - 8 9 - 0 8

JOB NUMBER 6853-04

SAMPLING DATE 11 6 7

LOCATION ACTIVITY START 1030 END 1115

PROGRAM C

FILE NAME CGW

WEATHER prt sunny, 0' w/ water

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) 3.05 FT

PROTECTIVE CASING/WELL DIFF. -0.17 FT

WELL DEPTH 128 FT  MEASURED  HISTORICAL

WATER DEPTH 128.6 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH  
GROUNDWATER ELEVATION (BGS) 119.75

HEIGHT OF WATER COLUMN 4.5 FT  
X .16 GAL/FT (2 IN) = 28.6 GAL/VOL  
X .65 GAL/FT (4 IN) =  
X 1.5 GAL/FT (6 IN) = 143.25 TOTAL GAL PURGED  
X \_\_\_\_\_ GAL/FT ( \_\_\_\_\_ IN)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: cap

PURGE H2O CONTAINED? YES  NO   
WELL MATERIAL  PVC  SS  
AMBIENT AIR 1.0PPM WELL MOUTH 1.0PPM

### PURGE DATA

PURGE VOLUME	a 28 GAL	a 56 GAL	a 84 GAL	a 112 GAL	a 143 GAL
TEMP, DEG C	8.7	8.7	8.9	7.0	7.5
pH, UNITS	7.6	7.6	8.0	7.6	7.7
SPECIFIC CONDUCTIVITY umhos/cm	654	450	653	652	652

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 COOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDFOS# \_\_\_\_\_  
2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESC LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	H2SO4 TO pH<2	500 ML POLY	445		0703101C
CL	YES	4 DEG C	500 ML POLY	446		
SO4	YES	4 DEG C	500 ML POLY	447		
ALK	NO	4 DEG C	500 ML POLY	448		
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 340 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 340 ML VIAL	449	450	451 0212301C
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG	454		0228101C
DNT	NO	4 DEG C	1 L AG	455		
TPH	NO	H2SO4 TO pH<2	1 L GUM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* purge H2O containerized for VOC's

SIGNATURE: *Paul C. Smith*

USED UPDATED VOLUMES DUE TO LARGE DIFFERENCE IN WATER ELEVATIONS vs 1997. 143 GAL FOR 5 VOLUMES FOR N. ROKA

RECEIVED BY: *William E. Popa*

3700 = 230.6

rise = 383.43

GW elev = 772.20

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBM2709**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **11-23-91**

SITE ID **PBM-89-09**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1245 END 1400**

PROGRAM **C**

WEATHER **snow/mist**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.79 FT**

PROTECTIVE CASING/WELL DIFF. **-0.20 FT**

WELL DEPTH **124.10 FT**  
WATER DEPTH **111.28 FT**

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) **108.69**

HEIGHT OF WATER COLUMN **12.82 FT**

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

**2124 GAL/VOL**  
**110 TOTAL GAL PURGED**

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **—** PPM

WELL MOUTH **—** PPM

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: **cap**

### PURGE DATA

PURGE VOLUME	@ 22 GAL	@ 44 GAL	@ 66 GAL	@ 88 GAL	@ 110 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOCR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	8.3	8.5	8.4	8.7	8.9	
PH, UNITS	7.4	7.40	7.40	7.37	7.37	
SPECIFIC CONDUCTIVITY umhos/cm	553	524	534	533	520	

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID **ISCO #**

SUBMERSIBLE PUMP  **GRUNDFOS#**

BAILER  **2"  4" #**

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DEFCON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
<input type="checkbox"/> CA	YES	HNO3 TO pH<2			
<input type="checkbox"/> NA	YES	HNO3 TO pH<2			
<input type="checkbox"/> CD	YES	HNO3 TO pH<2			
<input type="checkbox"/> CR	YES	HNO3 TO pH<2			
<input type="checkbox"/> HG	YES	HNO3 TO pH<2			
<input type="checkbox"/> PB	YES	HNO3 TO pH<2			
<input type="checkbox"/> NI	YES	HNO3 TO pH<2			
<input type="checkbox"/> BA	YES	HNO3 TO pH<2			
<input type="checkbox"/> HARD	YES	HNO3 TO pH<2	500 ml poly		
<input type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY	457	0422101C
<input type="checkbox"/> CL	YES	4 DEG C	500 ML POLY	458	
<input type="checkbox"/> SO4	YES	4 DEG C	500 ML POLY	459	
<input type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY	460	
<input type="checkbox"/> TDS	NO	4 DEG C			
<input type="checkbox"/> TCC	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
<input type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY		
<input type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	461	462 / 463 / 0212201C
<input type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG		
<input type="checkbox"/> NG	NO	4 DEG C	1 L AG		
<input type="checkbox"/> NAM	NO	4 DEG C	1 L AG	464	0128101C
<input type="checkbox"/> DNT	NO	4 DEG C	1 L AG	467	
<input type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GWM		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for VOC's  
- see calculations for purge volumes

SIGNATURE: *Paul C. Smith/LLC*  
RECEIVED BY: *Nancy E. [Signature]*



Site elev = 886.5

msr elev. = 887.65

GW elev = 770.65

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8910A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.5.91

SITE ID PBN-89-10A

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0800 END 0900

PROGRAM C

WEATHER Snow, 10°F

windy

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.69 FT

PROTECTIVE CASING/WELL DIFF. - .18 FT

WELL DEPTH 127 FT

MEASURED  
 HISTORICAL

WATER DEPTH 119.00 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 116.49

HEIGHT OF WATER COLUMN 8.0 FT X  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

13.27 GAL/VOL

67.0 TOTAL GAL PURGED (50)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 1.8 PPM

WELL MOUTH 1.0 PPM

### PURGE DATA

PURGE VOLUME

@ 13 GAL @ 26 GAL @ 39 GAL @ 52 GAL @ 65 GAL

TEMP, DEG C

9.0 8.7 9.2 9.6 9.4

PH, UNITS

7.2 7.17 7.21 7.2 7.2

SPECIFIC CONDUCTIVITY umhos/cm

657 636 653 667 633

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEFS#   
2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	ESS lot #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>	
TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL		<input checked="" type="checkbox"/>	
MH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY		<input checked="" type="checkbox"/>	
VOC UM17	NO	HCL, 4 DEG C (3)40 ML VIAL		<input checked="" type="checkbox"/>	
BN/A UM16	NO	4 DEG C (2) 1 L AG		<input checked="" type="checkbox"/>	
NG 99	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>	
NAM UN06	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>	
DNT UW26	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>	
TPH USEPA 418.1	NO	H2SO4 TO pH<2 1 L GWM		<input checked="" type="checkbox"/>	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for VOC's  
-see calculations for purge volumes

SIGNATURE: [Signature]  
RECEIVED BY: Nancy E. [Signature]

3rd elev. = 589.1 riser elev. = 891.81 Gw elev. = 770.62

**ABB ENVIRONMENTAL SERVICES, INC.**

**FIELD DATA RECORD - GROUNDWATER**

**FIELD SAMPLING NUMBER**

PBN29108

CT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-89-10E

JOB NUMBER 6853-04

SAMPLING DATE 12.6.91

LOCATION ACTIVITY START 1100 END 1230

PROGRAM C

FILE NAME CGW

WEATHER PTLY SUNNY 20° BILBEZY

**WATER LEVEL / WELL DATA**

TOP OF WELL TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) 2.54 FT PROTECTIVE CASING/WELL DIFF. -18 FT

WELL DEPTH 169.3 FT  MEASURED  HISTORICAL

WATER DEPTH 121.19 FT WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION (BGS) 113.83

HEIGHT OF WATER COLUMN 48.11 FT  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (IN)

44 GAL/VOL 2221 TOTAL GAL PURGED (190)

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR .8 PPM WELL MOUTH .8 PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A CONCRETE COLLAR INTACT  YES  NO  N/A WELL LOCKED  YES  NO  N/A OTHER: CP

**PURGE DATA**

PURGE VOLUME	<u>44</u> GAL	<u>88</u> GAL	<u>132</u> GAL	<u>176</u> GAL	<u>220</u> GAL
TEMP, DEG C	<u>8.9</u>	<u>8.7</u>	<u>7.8</u>	<u>8.7</u>	<u>8.6</u>
PH, UNITS	<u>7.6</u>	<u>7.5</u>	<u>7.5</u>	<u>7.5</u>	<u>7.5</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>639</u>	<u>640</u>	<u>635</u>	<u>636</u>	<u>639</u>

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

SAMPLING  ISCO # \_\_\_\_\_ GRUNDFOSS# \_\_\_\_\_ 2"  4" # \_\_\_\_\_

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> CA	SS16	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input type="checkbox"/> NA	SS16	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input type="checkbox"/> CD	SS16	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input type="checkbox"/> CR	SS16	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input type="checkbox"/> HG	SB03	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input type="checkbox"/> PB	SD24	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input type="checkbox"/> NI	SS16	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input type="checkbox"/> BA	SS16	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input type="checkbox"/> HARD	USEPA 130.2	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input type="checkbox"/> NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		
<input type="checkbox"/> CL	TT08	YES	4 DEG C	500 ML POLY		
<input type="checkbox"/> SO4	TT08	YES	4 DEG C	500 ML POLY		
<input type="checkbox"/> ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		
<input type="checkbox"/> TDS	USEPA 160.1	NO	4 DEG C			
<input type="checkbox"/> TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
<input type="checkbox"/> NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
<input type="checkbox"/> VOC	UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		
<input type="checkbox"/> BN/A	UM16	NO	4 DEG C	(2) 1 L AG		
<input type="checkbox"/> NG	99	NO	4 DEG C	1 L AG		
<input type="checkbox"/> NAM	UM06	NO	4 DEG C	1 L AG		
<input type="checkbox"/> DNT	UM26	NO	4 DEG C	1 L AG		
<input type="checkbox"/> TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CO, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for DNT.  
 - see attached for volume calculations

SIGNATURE: Paul S. Smith / ABC  
 RECEIVED BY: Nancy E. King

GW elev. = 887.00  
 elev. = 887.00

GW elev. = 770.89  
 elev. = 770.89

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN8910C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

12-13-91

SITE ID **PBN-89-10C**

JOB NUMBER **6853-04**

SAMPLING DATE **12-13-91**

LOCATION ACTIVITY START **0800** END **1000**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **clear 25**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.09** FT

PROTECTIVE CASING/WELL DIFF. **-0.05** FT

WELL DEPTH **171.05** FT  MEASURED  HISTORICAL

WATER DEPTH **116.11** FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) **114.07**

HEIGHT OF WATER COLUMN **74.94** FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

**60** GAL/VOL

**300** TOTAL GAL PURGED

WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: **CMP**

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **.6** PPM

WELL MOUTH **.6** PPM

### PURGE DATA

PURGE VOLUME	@ 60 GAL	@ 120 GAL	@ 180 GAL	@ 240 GAL	@ 300 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>10.4</b>	<b>10.5</b>	<b>10.8</b>	<b>10.8</b>	<b>10.5</b>	
pH, UNITS	<b>7.4</b>	<b>7.5</b>	<b>7.4</b>	<b>7.5</b>	<b>7.3</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>418</b>	<b>421</b>	<b>427</b>	<b>424</b>	<b>423</b>	

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

SAMPLING  ISCO # \_\_\_\_\_  
 GRUNDFOSS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

EQUIPMENT ID \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	H2SO4 TO pH<2	500 ML POLY			
CL	YES	4 DEG C	500 ML POLY			
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

see attached for volumes

SIGNATURE: *Pat Galt/MS*

RECEIVED BY: *Nancy E. Poter*

Flow = 880.9

Flow elev. = 884.25

Flow elev. = 770.56

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN8910D**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **11-29-91**

SITE ID **PBN-89-10D**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1100 END 1430**

PROGRAM **C**

WEATHER **Overcast, 230°F**

### WATER LEVEL / WELL DATA

TOP OF WELL     PROTECTIVE TOP OF CASING     CASING STICK-UP (FROM GROUND)    **2.53 ± FT**     PROTECTIVE CASING/WELL DIFF.    **-.23 FT**

WELL DEPTH **239.5 FT**     MEASURED     HISTORICAL

WATER DEPTH **113.69 FT**

WELL DIAMETER     2 INCH     4 INCH     6 INCH    GROUNDWATER ELEVATION (BGS) **111.39**

HEIGHT OF WATER COLUMN **126 FT**     .16 GAL/FT (2 IN)     .65 GAL/FT (4 IN)     1.5 GAL/FT (6 IN)     GAL/FT (\_\_\_ IN)

**99** GAL/VOL    **99**    **495** TOTAL GAL PURGED    **AS**

PURGE H2O CONTAINED?     YES     NO    WELL MATERIAL     PVC     SS    AMBIENT AIR **.8** PPM    WELL MOUTH **.8** PPM

WELL INTEGRITY:    YES    NO    N/A  
 PROT. CASING SECURE              
 CONCRETE COLLAR INTACT              
 WELL LOCKED              
 OTHER: **Cap**

### PURGE DATA

PURGE VOLUME	@ 99 GAL	@ 198 GAL	@ 297 GAL	@ 396 GAL	@ 495 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>11.9</b>	<b>12.0</b>	<b>11.9</b>	<b>11.7</b>	<b>11.6</b>	
PH, UNITS	<b>7.0</b>	<b>7.5</b>	<b>7.0</b>	<b>7.6</b>	<b>7.5</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>558</b>	<b>562</b>	<b>563</b>	<b>563</b>	<b>562</b>	

### EQUIPMENT DOCUMENTATION

PURGING     SAMPLING

PERISTALTIC PUMP    EQUIPMENT ID    DECON FLUIDS USED    WATER LEVEL EQUIP. USED

ISCO #     POTABLE WATER     ELECTRIC COND. PROBE

SUBMERSIBLE PUMP    GRUNDEFS#     LIQUINOX     FLOAT ACTIVATED

BAILER     2"     4" #     STEAM CLEANING     PRESSURE TRANSDUCER

PVC/SILICON TUBING     IN-LINE/DISPOSABLE FILTER    NUMBER OF FILTERS USED **1**

OTHER

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CA    SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA    SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD    SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CR    SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG    SB03	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB    SD24	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI    SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA    SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NIT    USEPA 130.2	YES	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> CL    TF10	YES	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> SO4    TT08	YES	4 DEG C				
<input checked="" type="checkbox"/> ALK    USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> TDS    USEPA 160.1	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC    USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC    UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
<input checked="" type="checkbox"/> BN/A    UM16	NO	4 DEG C	(2) 1 L AG			
<input checked="" type="checkbox"/> NG    99	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM    UN06	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> DNT    UW26	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> TPH    USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- See attached for volumes

SIGNATURE: *Rick S. Hill/mn*  
 RECEIVED BY: *Nancy E. Hill*

Site Elev = 881.6

Riser Elev = 884.41

GW Elev = 773.87

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM89111

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBM-89-111

JOB NUMBER 6853-04

SAMPLING DATE 11-6-91

LOCATION ACTIVITY START 1450 END 1600

PROGRAM C

FILE NAME CGW

WEATHER pt. sunny

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.90 FT

PROTECTIVE CASING/WELL DIFF. -0.2 FT

WELL DEPTH 113 FT

MEASURED  
 HISTORICAL

WATER DEPTH 110.5 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

107.82

HEIGHT OF WATER COLUMN 2.5 FT  
x  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( \_ IN)

4 GAL/VOL

25 TOTAL GAL PURGED

118

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
OTHER:

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 1.2 PPM

WELL MOUTH 1.2 PPM

### PURGE DATA

PURGE VOLUME	@ 5 GAL	@ 10 GAL	@ 15 GAL	@ 20 GAL	@ 25 GAL
TEMP, DEG C	9.8	9.5	9.4	9.6	9.7
PH, UNITS	7.1	7.2	7.3	7.3	7.3
SPECIFIC CONDUCTIVITY umhos/cm	605	641	657	660	637

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
USEPA 130.2	YES	HNO3 TO pH<2				
TT08	YES		500 ML POLY			
TT08	YES	4 DEG C	500 ML POLY			
TT08	YES	4 DEG C	500 ML POLY			
USEPA 310.1	NO	4 DEG C	500 ML POLY			
USEPA 160.1	NO	4 DEG C				
USEPA 415.1	NO	4 DEG C				
USEPA 350.2	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
UM17	NO	H2SO4 TO pH<2	500 ML POLY			
UM16	NO	HCL, 4 DEG C	(3)40 ML VIAL			
99	NO	4 DEG C	(2) 1 L AG			
UN06	NO	4 DEG C	1 L AG			
UN26	NO	4 DEG C	1 L AG			
USEPA 418.1	NO	4 DEG C	1 L AG			
		H2SO4 TO pH<2	1 L GUM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* Used historical Bow ~~Volume~~ (MR)  
PURGED ALMOST DRY, TOOK A WHILE TO SAIL FOR THE SAND  
- Figured raw volumes... See attached

SIGNATURE: Paul G. Smith  
RECEIVED BY: Nancy E. Rofa

- (1440) samplers still not finished due to sampling complications.  
- did not make Fed-Ex shipment for 11-6-91  
- 11-7-91 for J. Pickett, all Nit samples get the SO4, method #TF10. PBM-89-11 Nit samples present at this time. (0850)

grad elev = 852.6

rise elev = 855.66

Gu elev = 764.29

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN 8712A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-89-12A

JOB NUMBER 6853-04

SAMPLING DATE 11-5-91

LOCATION ACTIVITY START 1330 END 1430

PROGRAM C

FILE NAME CGW

WEATHER overcast snow

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.86 FT

PROTECTIVE CASING/WELL DIFF. -0.8 FT

WELL DEPTH 103.5 FT MEASURED HISTORICAL

WATER DEPTH 91.37 FT

WELL DIAMETER 2 INCH 4 INCH 6 INCH GROUNDWATER ELEVATION (BGS) 88.59

HEIGHT OF WATER COLUMN 12 FT x 16 GAL/FT (2 IN) 30 GAL/VOL 1.5 GAL/FT (6 IN) 150 TOTAL GAL PURGED

PURGE H2O CONTAINED? YES NO WELL MATERIAL PVC SS AMBIENT AIR PPM WELL MOUTH PPM

WELL INTEGRITY: PROT. CASING SECURE CONCRETE COLLAR INTACT WELL LOCKED OTHER:

### PURGE DATA

PURGE VOLUME	@ 30 GAL	@ 60 GAL	@ 90 GAL	@ 120 GAL	@ 150 GAL
TEMP, DEG C	9.1	10.2	10.0	9.9	9.9
pH, UNITS	7.4	7.3	7.3	7.3	7.2
SPECIFIC CONDUCTIVITY umhos/cm	752	731	726	724	723

SAMPLE OBSERVATIONS CLEAR CLOUDY COLORED TURBID ODOR OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING EQUIPMENT ID DECON FLUIDS USED WATER LEVEL EQUIP. USED PERISTALTIC PUMP ISCO # POTABLE WATER ELECTRIC COND. PROBE SUBMERSIBLE PUMP GRUNDEOS# LIQUINOX FLOAT ACTIVATED BAILER 2" 4" # STEAM CLEANING PRESSURE TRANSDUCER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA	YES	SS16			
NA	YES	SS16			
CD	YES	SS16			
CR	YES	SS16			680 0429101C
HG	YES	SB03			
PB	YES	SD24			
NI	YES	SS16			
BA	YES	SS16			
HARD	YES	USEPA 130.2			
NIT	YES	TT08	H2SO4 TO pH<2	500 ML POLY	
CL	YES	TT08	4 DEG C	500 ML POLY	681 0222501C
SO4	YES	TT08	4 DEG C	500 ML POLY	682
ALK	NO	USEPA 310.1	4 DEG C	500 ML POLY	683
TDS	NO	USEPA 160.1	4 DEG C	500 ML POLY	
TOC	NO	USEPA 415.1	H2SO4 TO pH<2	(3)40 ML VIAL	
NH3N2	NO	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY	
VOC	NO	UM17	HCL, 4 DEG C	(3)40 ML VIAL	684 685 686 0212301C
BN/A	NO	UM16	4 DEG C	(2) 1 L AG	
NG	NO	99	4 DEG C	1 L AG	
NAM	NO	UN06	4 DEG C	1 L AG	689 0123101C
DNT	NO	UN26	4 DEG C	1 L AG	
TPH	NO	USEPA 418.1	H2SO4 TO pH<2	1 L GWM	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP) TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

sample actually collected at ~ 1545 historical volumes used (1745) missed Fed-Ex. Bad road conditions

SIGNATURE: P. Smith / M. McG...

RECEIVED BY: Nancy E. R...

prevent driving to madison ... I added H2SO4 to Nit samples to extend hold time (method # TF10) samples kept on ice entire time.

Ortl elev = 856.6

Riser elev = 856.04

GLW elev = 770.27

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN87123**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **PBN-89-123**

JOB NUMBER **6853-04**

SAMPLING DATE **11591**

LOCATION ACTIVITY **START 1440 END 1540**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **cloudy, snow, 20B**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **3.66** FT

PROTECTIVE CASING/WELL DIFF. **4.31** FT

WELL DEPTH **140** FT  MEASURED  HISTORICAL

WATER DEPTH **85.15** FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) **81.80**

HEIGHT OF WATER COLUMN **55** FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( \_ IN)

**38** GAL/VOL

**190** TOTAL GAL PURGED

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **0.0** PPM

WELL MOUTH **0.0** PPM

WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: **CM**

### PURGE DATA

PURGE VOLUME	40 GAL	80 GAL	120 GAL	160 GAL	200 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.6	9.9	9.5	9.1	9.4	
pH, UNITS	7.0	7.0	7.9	7.5	7.9	
SPECIFIC CONDUCTIVITY umhos/cm	725	720	715	717	719	

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDEOS# \_\_\_\_\_  
 2"  4"  # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2			691	012801C
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			691	
NIT	YES	H2SO4 TO pH<2	500 ML POLY		692	0222801C
CL	YES	4 DEG C	500 ML POLY		693	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		694	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		695	0212301C
BN/A	NO	4 DEG C	(2) 1 L AG		696	
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		700	012801C
DNT	NO	4 DEG C	1 L AG		701	
TPH	NO	H2SO4 TO pH<2	1 L GUM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* Purge H2O contained for VOC's  
 - historical volumes used  
 - Sample actually collected ~ 1715. A+ (1745)

SIGNATURE: P. Smith / M. McGibue  
 RECEIVED BY: Nancy E. Pope

g missed Fed-Ex. Bad road conditions to madison.  
 g added H2SO4 to Nit sample to extend hold time.  
 (method # TF10) samples kept on ice entire time.

ard  
212U = 3578

212U = 804 47

GW  
212U = 76895

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM0501

PROJECT USATHAMA-BAAP

SITE TYPE WELL

11-21-11

SITE ID PBM-85-01

JOB NUMBER 6853-04

SAMPLING DATE 11-20-11

LOCATION ACTIVITY START 0800 END 0845

PROGRAM C

FILE NAME CGW

WEATHER Pky cloudy 30's

### WATER LEVEL / WELL DATA

WELL DEPTH 100.8 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) 2.76 FT

3.6 cmw

PROTECTIVE CASING/WELL DIFF. - .60 FT

WATER DEPTH 73.52 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH  
 8 INCH

GROUNDWATER ELEVATION (BGS) 90.52

HEIGHT OF WATER COLUMN 7.3 FT  
X .16 GAL/FT (2 IN)  
X .65 GAL/FT (4 IN)  
X 1.5 GAL/FT (6 IN)  
X 3.0 GAL/FT (8 IN)

6 GAL/VOL  
30 TOTAL GAL PURGED (30)

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR .8 PPM

WELL MOUTH .8 PPM

### PURGE DATA

PURGE VOLUME	@ 6 GAL	@ 12 GAL	@ 18 GAL	@ 24 GAL	@ 30 GAL
TEMP, DEG C	10.1	10.3	10.4	10.3	10.3
PH, UNITS	7.2	7.4	7.4	7.5	7.6
SPECIFIC CONDUCTIVITY umhos/cm	684	692	702	703	702

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS# 04Z 1  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	133	042210 C
CL TT08	YES	4 DEG C	500 ML POLY	134	
SO4 TT08	YES	4 DEG C	500 ML POLY	135	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	136	
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C (3)40 ML VIAL		137	132 139 021230 C
BN/A UM16	NO	4 DEG C (2) 1 L AG			
NG 99	NO	4 DEG C 1 L AG			
NAM UN06	NO	4 DEG C 1 L AG		142	012210 C
DNT UN26	NO	4 DEG C 1 L AG		143	
TPH USEPA 418.1	NO	H2SO4 TO pH<2 1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* purge H2O containerized for VOC's  
- used historical volumes

SIGNATURE: *W.C. Smith/Imm*

RECEIVED BY: *Wancy E. R...*



elev = 844.5    riser elev = 849.16    GW elev = 768.27

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_ OF \_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER: **P B M 8 5 0 2**  
 PROJECT: **USATHAMA-BAAP**    SITE TYPE: **WELL**  
 SITE ID: **P B M - 8 5 - 0 2**    JOB NUMBER: **6853-04**    SAMPLING DATE: **11-10-91**  
 LOCATION ACTIVITY: **START 09:15    END 10:15**    PROGRAM: **C**    FILE NAME: **CGW**  
 WEATHER: **overcast 40°F**

**WATER LEVEL / WELL DATA**

TOP OF WELL    PROTECTIVE CASING STICK-UP (FROM GROUND): **3.06 FT**  
 TOP OF CASING    PROTECTIVE CASING/WELL DIFF.: **- .31 FT**  
 WELL DEPTH: **101 FT**     MEASURED     HISTORICAL  
 WATER DEPTH: **80.89 FT**  
 WELL DIAMETER:  2 INCH     4 INCH     6 INCH    GROUNDWATER ELEVATION (BGS): **78.14**  
 HEIGHT OF WATER COLUMN: **20 FT**     .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_\_\_ IN)  
**15 GAL/VOL**    **(15)**  
**75 TOTAL GAL PURGED**    **(75)**  
 PURGE H2O CONTAINED?    WELL MATERIAL    AMBIENT AIR    PPM    WELL MOUTH    PPM  
 YES     NO     PVC     SS    **A**    **A**  
 WELL INTEGRITY:    YES    NO    N/A  
 PROT. CASING SECURE              
 CONCRETE COLLAR INTACT              
 WELL LOCKED              
 OTHER: **cap**

**PURGE DATA**

PURGE VOLUME	<b>15 GAL</b>	<b>30 GAL</b>	<b>45 GAL</b>	<b>60 GAL</b>	<b>75 GAL</b>	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>11.4</b>	<b>10.5</b>	<b>10.4</b>	<b>10.1</b>	<b>10.5</b>	
pH, UNITS	<b>7.5</b>	<b>7.6</b>	<b>7.6</b>	<b>7.6</b>	<b>7.6</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>714</b>	<b>705</b>	<b>706</b>	<b>700</b>	<b>701</b>	

**EQUIPMENT DOCUMENTATION**

PURGING:  PERISTALTIC PUMP    EQUIPMENT ID: \_\_\_\_\_  
 SUBMERSIBLE PUMP    ISCO #: \_\_\_\_\_  
 BAILER    GRUNDEFS#: \_\_\_\_\_  
 PVC/SILICON TUBING     2"     4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER    \_\_\_\_\_  
 OTHER: \_\_\_\_\_  
 DECON FLUIDS USED:  POTABLE WATER    WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 LIQUINOX     FLOAT ACTIVATED  
 STEAM CLEANING     PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED: **1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2	500 ml Poly			
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<b>145</b>		<b>0793101 C</b>
CL	YES	4 DEG C	500 ML POLY	<b>146</b>		
SO4	YES	4 DEG C	500 ML POLY	<b>147</b>		
ALK	NO	4 DEG C	500 ML POLY	<b>148</b>		
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<b>149</b>	<b>150</b> <b>151</b>	<b>0212301 C</b>
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG	<b>154</b>		<b>0228101 C</b>
DNT	NO	4 DEG C	1 L AG	<b>155</b>		
TPH	NO	H2SO4 TO pH<2	1 L GLM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* used historical volumes  
 \* purge H2O containerized for VOC's

SIGNATURE: *RCS/AM*  
 RECEIVED BY: *Nancy E. Rota*

3rd elev. = 880.1 riser elev = 885.98 Gw elev = 767.42  
 2nd elev. = 880.1 riser elev = 885.98 Gw elev = 767.42

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBM 8503**

PROJECT **USATHAMA-BAAP**  
 SITE ID **PBM-85-03**  
 LOCATION ACTIVITY **START 0900 END 1000**

SITE TYPE **WELL**  
 JOB NUMBER **6853-04**  
 PROGRAM **C**

SAMPLING DATE **11-21-91**  
 FILE NAME **CGW**  
 WEATHER **ptly cly 30's**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **306 FT**  
 TOP OF CASING PROTECTIVE CASING WELL DIFF. **-42 FT**  
 WELL DEPTH **148 FT**  MEASURED  HISTORICAL  
 WATER DEPTH **117.54 FT**  
 HEIGHT OF WATER COLUMN **114.56 FT**  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION (BGS) **113.92**  
 .16 GAL/FT (2 IN) **26 GAL/VOL (26)**  
 .65 GAL/FT (4 IN) = **130 TOTAL GAL PURGED (130)**  
 1.5 GAL/FT (6 IN) =  
 GAL/FT ( IN) =  
 PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **.8 PPM** WELL MOUTH **.8 PPM**  
 WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: **cap**

### PURGE DATA

PURGE VOLUME	@ 26 GAL	@ 52 GAL	@ 76 GAL	@ 109 GAL	@ 130 GAL
TEMP, DEG C	9.6	10.0	9.8	9.8	7.5
PH, UNITS	7.7	7.3	7.5	7.5	7.9
SPECIFIC CONDUCTIVITY umhos/cm	738	744	734	738	737

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SAMPLING  SUBMERSIBLE PUMP  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDEOS# \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		157	0.22301C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		158	
CL TT08	YES	4 DEG C	500 ML POLY		159	
SO4 TT08	YES	4 DEG C			160	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		161	0.22301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		164	0.22301C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		166	0.22301C
DNT UM26	NO	4 DEG C	1 L AG		167	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICRY)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICRY)  
 \*purge H2O containerized for VOC'S  
 -used historical purge volumes  
 SIGNATURE: \_\_\_\_\_  
 RECEIVED BY: **Wendy E. [Signature]**

cont elev. = 862.0

river elev = 266.65

Est. elev = 767.60

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM8504

PROJECT USATHAMA-BAAP

SITE TYPE WELL

11-2-91

SITE ID PBM-85-04

JOB NUMBER 6853-04

SAMPLING DATE ~~11-2-91~~ (11-2-91)

LOCATION ACTIVITY START 1530 END 1630

PROGRAM C

FILE NAME CGW

WEATHER prt. Sunny, 0 w. wind cr.

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.50 FT

PROTECTIVE CASING/WELL DIFF. -0.58 FT

WELL DEPTH 124 ± FT

MEASURED  
 HISTORICAL

WATER DEPTH 99.05 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 96.75

HEIGHT OF WATER COLUMN 25 FT

.16 GAL/FT (<2 IN)  
 .65 GAL/FT (4 IN)=  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

18 GAL/VOL

90 TOTAL GAL PURGED

89

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
OTHER: YES NO N/A

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR PPM

WELL MOUTH PPM

### PURGE DATA

PURGE VOLUME	a 18 GAL	a 36 GAL	a 54 GAL	a 72 GAL	a 90 GAL
TEMP, DEG C	9.1	9.8	9.6	9.6	9.6
PH, UNITS	8.1	8.0	7.8	7.7	7.7
SPECIFIC CONDUCTIVITY umhos/cm	782	759	759	757	754

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS#  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS Lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2	500 ml poly		169	0703101C
NIT	YES		500 ML POLY		170	
CL	YES	4 DEG C	500 ML POLY		171	
SO4	YES	4 DEG C	500 ML POLY		172	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		173	0212301C
BN/A	NO	4 DEG C	(2) 1 L AG		174	
NG	NO	4 DEG C	1 L AG			
NAH	NO	4 DEG C	1 L AG		178	0129101C
DNT	NO	4 DEG C	1 L AG		179	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
- containerized purge H2O for VOC's  
- used historical volumes + Bow

SIGNATURE: Paul C. Sath / MM  
RECEIVED BY: Nancy E. Rota

~~ard~~  
 elev = 859.6 riser elev = 863.33 GW elev = 766.97  
 elev = 859.6 riser elev = 863.33 GW elev = 766.97

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 01

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBM 8505**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **PBM-85-05**

JOB NUMBER **6853-04**

SAMPLING DATE **11-8-91**

LOCATION ACTIVITY START **1400** END **1500**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **part sunny, 50 wind clear**

### WATER LEVEL / WELL DATA

WELL DEPTH **110 ± FT** MEASURED  HISTORICAL   
 TOP OF WELL  TOP OF CASING  PROTECTIVE CASING STICK-UP (FROM GROUND) **2.75 FT**  
 PROTECTIVE CASING/WELL DIFF. **-0.74 FT**

WATER DEPTH **96.91 FT**  
 WELL DIAMETER **2 INCH** GROUNDWATER ELEVATION (BGS) **94.92**

HEIGHT OF WATER COLUMN **13 FT** X **.16 GAL/FT (2 IN)**  
**.65 GAL/FT (4 IN)**  
**1.5 GAL/FT (6 IN)**  
**1 GAL/FT (1 IN)**

**10 GAL/VOL**  
**50 TOTAL GAL PURGED** **(50)**

WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER:

PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.8 PPM** WELL MOUTH **0.8 PPM**

### PURGE DATA

PURGE VOLUME	@ 10 GAL	@ 20 GAL	@ 30 GAL	@ 40 GAL	@ 50 GAL
TEMP, DEG C	9.1	9.3	9.6	9.1	9.5
PH, UNITS	7.2	7.3	7.4	7.4	7.3
SPECIFIC CONDUCTIVITY umhos/cm	755	776	785	780	783

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDEOS# \_\_\_\_\_  
 2"  4"  # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2	500 ml poly		181	072310C
NIT	YES	HNO3 TO pH<2	500 ML POLY		182	
CL	YES	4 DEG C	500 ML POLY		183	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		184	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		185	021230C
BN/A	NO	4 DEG C	(2) 1 L AG		186	
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		190	012810C
NT	NO	4 DEG C	1 L AG		191	
IPH	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- containerized purge H2O for VOC's  
 - used historical volumes + Bow

SIGNATURE: Patricia H. Linn  
 RECEIVED BY: Nancy E. Linn

well elev = ~843.5

riser elev = 848.12

GW elev = 765.21

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM8506

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBM-85-06

JOB NUMBER 6853-04

SAMPLING DATE 11-6-91

LOCATION ACTIVITY START 0900 END 1000

PROGRAM C

FILE NAME CGW

WEATHER prt. sunny, 0" wind chill

### WATER LEVEL / WELL DATA

WELL DEPTH 104 FT

MEASURED  HISTORICAL

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 3.55 FT

PROTECTIVE CASING/WELL DIFF. 0.4 FT

WATER DEPTH 82.91 FT

WELL DIAMETER 4 INCH

GROUNDWATER ELEVATION (BGS) 80.26

HEIGHT OF WATER COLUMN 21 FT

.16 GAL/FT (2 IN)  
.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)  
GAL/FT ( IN)

15 GAL/VOL  
75 TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER:

PURGE H2O CONTAINED? YES  NO

WELL MATERIAL PVC  SS

AMBIENT AIR PPM

PPM

WELL MOUTH 12 PPM

### PURGE DATA

USED "AT" VALUES

PURGE VOLUME	@ 15 GAL	@ 30 GAL	@ 45 GAL	@ 60 GAL	@ 75 GAL
TEMP, DEG C	10	8.9	8.8	8.6	8.6
pH, UNITS	5.7	6.3	6.9	7.1	7.2
SPECIFIC CONDUCTIVITY umhos/cm	523	525	522	527	527

SAMPLE OBSERVATIONS: CLEAR  CLOUDY  COLORED  TURBID  ODOOR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BALLER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

FLUIDS USED  
POTABLE WATER  
LIQUINOX  
STEAM CLEANING

WATER LEVEL EQUIP. USED  
ELECTRIC COND. PROBE  
FLOAT ACTIVATED  
PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			
NA	SS16	YES	HNO3 TO pH<2			
CD	SS16	YES	HNO3 TO pH<2			
CR	SS16	YES	HNO3 TO pH<2			
HG	SB03	YES	HNO3 TO pH<2			
PB	SD24	YES	HNO3 TO pH<2			
NI	SS16	YES	HNO3 TO pH<2			
BA	SS16	YES	HNO3 TO pH<2			
HARD	USEPA 130.2	YES	HNO3 TO pH<2 500 ml	Poly	193	0222801C
NIT	TT08	YES	HNO3 TO pH<2 500 ML	POLY	194	
CL	TT08	YES	4 DEG C 500 ML	POLY	195	0703101C
SO4	TT08	YES	4 DEG C 500 ML	POLY	196	
ALK	USEPA 310.1	NO	4 DEG C 500 ML	POLY		
TDS	USEPA 160.1	NO	4 DEG C			
TOC	USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML	VIAL		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2 500 ML	POLY		
VOC	UM17	NO	HCL, 4 DEG C (3)40 ML	VIAL	197	0212301C
BN/A	UM16	NO	4 DEG C (2) 1 L	AG		
NG	99	NO	4 DEG C 1 L	AG		
NAM	UN06	NO	4 DEG C 1 L	AG	202	0123101C
DNT	UN26	NO	4 DEG C 1 L	AG	203	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2 1 L	GWM		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*containerized for VOC's  
- used historic flow volumes

SIGNATURE: Paul C. Selt

RECEIVED BY: Nancy E. Rofka

amt elev = 289.5

rser elev = 274.56

GW elev = 768.54

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**PBN8501A**

PROJECT **USATHAMA-BAAP**

SITE TYPE

**WELL**

SITE ID **PBN-85-01A**

JOB NUMBER

**6853-04**

SAMPLING DATE

**11-13-91**

LOCATION ACTIVITY **START 1045 END 1145**

PROGRAM

**C**

FILE NAME

**CGW**

WEATHER

**overcast 10°F**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

**3.40** FT

PROTECTIVE CASING/WELL DIFF.

**-0.30** FT

WELL DEPTH **120** FT

MEASURED  
 HISTORICAL

TER DEPTH **100.02** FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BG)

**102.84**

HEIGHT OF WATER COLUMN **14** FT

16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

**11** GAL/VOL **(11)**

**55** TOTAL GAL PURGED **(55)**

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: **cap**

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR **1.5** PPM

WELL MOUTH **1.5** PPM

### PURGE DATA

PURGE VOLUME	@ 11 GAL	@ 22 GAL	@ 33 GAL	@ 44 GAL	@ 55 GAL
TEMP, DEG C	9.9	10.1	9.9	10.1	10.3
pH, UNITS	7.3	7.4	7.4	7.4	7.5
SPECIFIC CONDUCTIVITY umhos/cm	720	717	712	717	714

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PERISTALTIC PUMP

EQUIPMENT ID

POTABLE WATER

WATER LEVEL EQUIP. USED

SUBMERSIBLE PUMP

ISCO #

LIQUINOX

ELECTRIC COND. PROBE

BAILER

GRUNDEPS#

STEAM CLEANING

FLOAT ACTIVATED

PVC/SILICON TUBING

2"  4" #

PRESSURE TRANSDUCER

IN-LINE/DISPOSABLE FILTER

OTHER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
MG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
M	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
T	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
PH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* used historical volumes  
\* purge H2O contained for VOC's

SIGNATURE: Paul S. Hillman

RECEIVED BY: W. Nancy E. ...

2100 = 2894.6

MSR elev. = 898.79

GW elev. = 756.58

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8502A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

11-21-91

SITE ID PBN-85-02A

JOB NUMBER 6853-04

SAMPLING DATE

LOCATION ACTIVITY START 1015 END 1100

PROGRAM C

FILE NAME CGW

WEATHER prt cloudy, 30's

### WATER LEVEL / WELL DATA

WELL DEPTH 138.5 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.86 FT

PROTECTIVE CASING/WELL DIFF. -0.36 FT

WATER DEPTH 130.2 FT

HEIGHT OF WATER COLUMN 8.3 FT  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( \_ IN)

7 GAL/VOL

WELL DIAMETER  2 INCH GROUNDWATER  
 5 INCH ELEVATION (BGS)  
 6 INCH

127.71

35 TOTAL GAL PURGED

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.6 PPM

WELL MOUTH 0.6 PPM

### PURGE DATA

PURGE VOLUME	@ 7 GAL	@ 14 GAL	@ 21 GAL	@ 28 GAL	@ 35 GAL
TEMP, DEG C	9.5	9.9	9.9	9.9	9.9
PH, UNITS	7.6	7.6	7.6	7.6	7.6
SPECIFIC CONDUCTIVITY umhos/cm	723	730	729	725	729

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOUR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS# 8026  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2			548	022201C
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			549	022201C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		549	022201C
CL	YES	4 DEG C	500 ML POLY		550	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		551	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		552	553
BN/A	NO	4 DEG C	(2) 1 L AG			021201C
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		557	022201C
DNT	NO	4 DEG C	1 L AG		558	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for voc's  
-used historical volumes

SIGNATURE: [Signature]  
RECEIVED BY: Wancy E. Rofka

gms elev = 846.5

riser elev = 851.22

GW elev = 708.22

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 01

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8503A

PROJECT

USATHAMA-BAAP

SITE TYPE

WELL

SITE ID

PBN-85-03A

JOB NUMBER

6853-04

SAMPLING DATE

11/9/91

LOCATION

ACTIVITY

START 1515 END 1600

PROGRAM

C

FILE NAME

CGW

WEATHER

Sunny, 10°-20°F  
windy

### WATER LEVEL / WELL DATA

WELL DEPTH

91 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

3.25  
2.51 FT

PROTECTIVE CASING/WELL DIFF. = 0.11

WATER DEPTH

83.0 FT

WELL DIAMETER  
 2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

80.06

HEIGHT OF WATER COLUMN

8.0 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

10 GAL/VOL (10)

50 TOTAL GAL PURGED (50)

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: Cap

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.8 PPM

WELL MOUTH 0.8 PPM

### PURGE DATA

PURGE VOLUME

@ 10 GAL @ 20 GAL @ 30 GAL @ 40 GAL @ 50 GAL

TEMP, DEG C

9.1 9.6 9.9 9.9 9.9

PH, UNITS

7.4 7.5 7.5 7.5 7.5

SPECIFIC CONDUCTIVITY umhos/cm

593 381 593 598 602

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS				
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY						ESS lot #
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2							
<input type="checkbox"/> CA	SS16	YES	HNO3 TO pH<2							
<input type="checkbox"/> NA	SS16	YES	HNO3 TO pH<2							
<input type="checkbox"/> CD	SS16	YES	HNO3 TO pH<2							
<input type="checkbox"/> CR	SS16	YES	HNO3 TO pH<2							
<input type="checkbox"/> HG	SB03	YES	HNO3 TO pH<2							
<input type="checkbox"/> PB	SD24	YES	HNO3 TO pH<2							
<input type="checkbox"/> NI	SS16	YES	HNO3 TO pH<2							
<input type="checkbox"/> BA	SS16	YES	HNO3 TO pH<2							
<input checked="" type="checkbox"/> HARD	USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		349				070310: C
<input checked="" type="checkbox"/> NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		350				
<input checked="" type="checkbox"/> CL	TT08	YES	4 DEG C	500 ML POLY		351				
<input checked="" type="checkbox"/> SO4	TT08	YES	4 DEG C							
<input checked="" type="checkbox"/> ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		352				
<input checked="" type="checkbox"/> TDS	USEPA 160.1	NO	4 DEG C							
<input checked="" type="checkbox"/> TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL						
<input checked="" type="checkbox"/> NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY						
<input checked="" type="checkbox"/> VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		353	354	355		021230: C
<input checked="" type="checkbox"/> BN/A	UM16	NO	4 DEG C	(2) 1 L AG						
<input checked="" type="checkbox"/> NG	99	NO	4 DEG C	1 L AG						
<input checked="" type="checkbox"/> NAM	UN06	NO	4 DEG C	1 L AG		358				0.7210: C
<input checked="" type="checkbox"/> DNT	UN26	NO	4 DEG C	1 L AG		359				
<input checked="" type="checkbox"/> TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM						

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:CF)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:CF)

\* used historical volumes  
\* purge H2O contained for VOC's

SIGNATURE: [Signature]  
RECEIVED BY: Nancy E. [Signature]



3rd  
elev. = ~855.1

riser  
elev. = 860.36

GW  
elev. = 766.49

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8504A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-85-04A

JOB NUMBER 6853-04

SAMPLING DATE 11.8.91

LOCATION ACTIVITY START 1100 END 1200

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 0°-10°

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

3.08 FT

PROTECTIVE CASING/WELL DIFF. -.18 FT

WELL DEPTH 111 FT

MEASURED  
 HISTORICAL

WATER DEPTH 13.87 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BG) 90.97

HEIGHT OF WATER COLUMN 17 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( \_ IN)

13 GAL/VOL (13)

65 TOTAL GAL PURGED (63)

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: \_\_\_\_\_

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 1 PPM

WELL MOUTH 1 PPM

### PURGE DATA

PURGE VOLUME	@ 13 GAL	@ 25 GAL	@ 39 GAL	@ 53 GAL	@ 65 GAL
TEMP, DEG C	9.4	10.1	9.7	9.3	9.7
PH, UNITS	7.2	7.2	7.5	7.4	7.2
SPECIFIC CONDUCTIVITY umhos/cm	712	750	728	727	720

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_  
GRUNDEFS# \_\_\_\_\_  
2"  4"  # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	559	0428101C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	560	0703101C
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	561	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	562	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL		<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY		<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C (3)40 ML VIAL		<input checked="" type="checkbox"/>	563	0212301C
BN/A UM16	NO	4 DEG C (2) 1 L AG		<input checked="" type="checkbox"/>	564	
NG 99	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>	568	0122101C
ONT UW26	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>	569	
TPH USEPA 418.1	NO	H2SO4 TO pH<2 1 L GWM		<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* used historical volumes  
\* purge H2O containerized for VOC's

SIGNATURE: Paul G. Smith / JUM  
RECEIVED BY: Nancy E. Rofka

3rd. elev. = 855.7

msr elev. = 857.60

Gw elev. = 771.14

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

F B M 2 2 0 1  
~~F B M 1 8 2 0 1~~

PAGE 1

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 11/25/91

SITE ID F B M - 1 8 2 - 0 1 1

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0930 END 1045

PROGRAM C

WEATHER 20°F CLEAR WINDY

### WATER LEVEL / WELL DATA

WELL DEPTH 99.51 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) 2.05 FT

PROTECTIVE CASING/WELL DIFF. -0.5 FT

WATER DEPTH 86.46 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 74.91

HEIGHT OF WATER COLUMN 13.05 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

27.4 GAL/VOL  
137 TOTAL GAL PURGED (137)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR .8 PPM

WELL MOUTH .3 PPM

### PURGE DATA

PURGE VOLUME	@ 27 GAL	@ 54 GAL	@ 81 GAL	@ 108 GAL	@ 137 GAL
TEMP, DEG C	4.1	3.0	4.4	4.3	7.9
PH, UNITS	7.50	7.53	7.44	7.61	7.40
SPECIFIC CONDUCTIVITY umhos/cm	439	494	436	437	466

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS #  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SC4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	NCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for VOC's  
-used historical volumes

SIGNATURE: [Signature]

RECEIVED BY: Nancy E. [Signature]

grid elev. = 870.9

MSR elev. = 873.36

GW elev. = 771.51

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**P6M8202**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **P6M-182-02**

JOB NUMBER **6853-04**

SAMPLING DATE **11.23.91**

LOCATION ACTIVITY **START 1000 END 1100**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **heavy rain, 40°S**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

**2.15** FT

PROTECTIVE CASING/WELL DIFF. **-0.06** FT

WELL DEPTH **116.75** FT

MEASURED  
 HISTORICAL

WATER DEPTH **102.05** FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) **99.96**

HEIGHT OF WATER COLUMN **14.7** FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

**12** GAL/VOL

TOTAL GAL PURGED **60**

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: **cap**

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

### PURGE DATA

PURGE VOLUME	@ 12 GAL	@ 24 GAL	@ 30 GAL	@ 45 GAL	@ 60 GAL
TEMP, DEG C	9.7	9.9	10.0	10.0	10.1
pH, UNITS	7.13	7.65	7.24	7.29	7.35
SPECIFIC CONDUCTIVITY umhos/cm	782	595	590	571	593

### SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING  
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDFOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HN03 TO pH<2				
<input type="checkbox"/> NA SS16	YES	HN03 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HN03 TO pH<2				
<input type="checkbox"/> CR SS16	YES	HN03 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HN03 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HN03 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HN03 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HN03 TO pH<2				
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HN03 TO pH<2	500 ml poly		85	0428101C
<input checked="" type="checkbox"/> NIT TF10	YES	H2S04 TO pH<2	500 ML POLY		86	
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		87	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C			↓	
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		88	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C			↓	
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2S04 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2S04 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		89	0:12301C
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG		92	0:28101C
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG		94	0:28101C
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG		95	
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2S04 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,NG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\* purge H2O contained for VOC's  
- used historical volumes

SIGNATURE: *R. G. Smith*

RECEIVED BY: *Nancy E. Rofka*

ord elev = 362.7

riser elev = 804.73

GW elev = 770.16

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM8203

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBM-82-03

JOB NUMBER 6853-04

SAMPLING DATE 11-25-91

LOCATION ACTIVITY START 0800 END 0915

PROGRAM C

FILE NAME CGW

WEATHER 20° CLEAR

### WATER LEVEL / WELL DATA

WELL DEPTH 124.5 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) 2.27 FT

PROTECTIVE CASING/WELL DIFF. -0.35 FT

WATER DEPTH 74.57 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 92.65

HEIGHT OF WATER COLUMN 13.13 FT  
X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

27 GAL/VOL  
136 TOTAL GAL PURGED (136)

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 1.0 PPM

WELL MOUTH 1.0 PPM

### PURGE DATA

PURGE VOLUME	@ 27 GAL	@ 54 GAL	@ 81 GAL	@ 108 GAL	@ 136 GAL
TEMP, DEG C	9.2	9.3	7.0	7.1	9.2
PH, UNITS	7.57	7.55	7.47	7.50	7.57
SPECIFIC CONDUCTIVITY umhos/cm	506	501	499	505	493

### SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDEFS# \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly	97	07031016
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	98	
CL TT08	YES	4 DEG C	500 ML POLY	99	
SO4 TT08	YES	4 DEG C			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	100	
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	101	102 105 07031016
BN/A UM16	NO	4 DEG C	(2) 1 L AG	104	105 07031016
NG 99	NO	4 DEG C	1 L AG		
NAM UN06	NO	4 DEG C	1 L AG	106	07031016
DNT UW26	NO	4 DEG C	1 L AG	107	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for VOC's  
 -used historical volumes

SIGNATURE: *[Signature]*  
 RECEIVED BY: *Nancy E. [Signature]*

3rd elev = 869.0

MSR elev = 871.42

GLW elev = 769.90

700

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM8204

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBM-82-04

JOB NUMBER 6853-04

SAMPLING DATE 11/24

LOCATION ACTIVITY START 0930 END 10:5

PROGRAM C

FILE NAME CGW

WEATHER pri cloudy, 20  
6-20, with in snow

### WATER LEVEL / WELL DATA

TOP OF WELL

TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.31 FT

PROTECTIVE CASING/WELL DIFF. -1.06 FT

WELL DEPTH 115.15 FT

MEASURED  
 HISTORICAL

WATER DEPTH 101.52 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 99.27

HEIGHT OF WATER COLUMN 13.63 FT X  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

27 GAL/VOL

135 TOTAL GAL PURGED (135)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 1.0 PPM

WELL MOUTH 1.0 PPM

### PURGE DATA

PURGE VOLUME

	27 GAL	54 GAL	81 GAL	108 GAL	135 GAL
TEMP, DEG C	7.0	7.47	7.5	7.5	7.61
pH, UNITS	7.59	7.70	7.72	7.71	7.77
SPECIFIC CONDUCTIVITY umhos/cm	614	615	619	616	600

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP ISCO #  
SUBMERSIBLE PUMP GRUNDEOS#  
BAILER 2" 4" #  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO PH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO PH<2				
CA SS16	YES	HNO3 TO PH<2				
NA SS16	YES	HNO3 TO PH<2				
CD SS16	YES	HNO3 TO PH<2				
CR SS16	YES	HNO3 TO PH<2				
HG SB03	YES	HNO3 TO PH<2				
PB SD24	YES	HNO3 TO PH<2				
NI SS16	YES	HNO3 TO PH<2				
BA SS16	YES	HNO3 TO PH<2				
HARD USEPA 130.2	YES	HNO3 TO PH<2	500 ML POLY		109	0426101C
NIT TF10	YES	H2SO4 TO PH<2	500 ML POLY		110	
CL TT08	YES	4 DEG C	500 ML POLY		111	
SO4 TT08	YES	4 DEG C	500 ML POLY		112	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO PH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO PH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		113	0426101C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		116	0426101C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		118	0426101C
DNT UM26	NO	4 DEG C	1 L AG		119	
TPH USEPA 418.1	NO	H2SO4 TO PH<2	1 L GUM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)

\* purge H2O containerized for VOC'S  
- used historical volumes

SIGNATURE: *[Signature]*

RECEIVED BY: *Nancy E. Kotka*

ord. elev = 874.5

river elev = 876.92

GW elev = 770.09

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 0

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM 8205

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBM-82-05

JOB NUMBER 6853-04

SAMPLING DATE 11/23/91

LOCATION ACTIVITY START 0800 END 0930

PROGRAM C

FILE NAME CGW

WEATHER heavy rain

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.35 FT  
 PROTECTIVE CASING/WELL DIFF. -.03 FT  
 WELL DEPTH 106.83 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 106.83 FT  
 WELL DIAMETER 4 INCH  
 GROUNDWATER ELEVATION (BGS) 104.51  
 HEIGHT OF WATER COLUMN 16.97 FT  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 31 GAL/VOL  
 155 TOTAL GAL PURGED (155)  
 PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR — PPM  
 WELL MOUTH — PPM  
 WELL INTEGRITY:  
 PROT. CASING SECURE   
 CONCRETE COLLAR INTACT   
 WELL LOCKED   
 OTHER: CAP

### PURGE DATA

PURGE VOLUME	a 31 GAL	a 62 GAL	a 93 GAL	a 114 GAL	a 155 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.9	9.5	10.1	10.1	10.1	
PH, UNITS	7.03	7.34	7.31	7.43	7.42	
SPECIFIC CONDUCTIVITY umhos/cm	630	667	634	621	626	

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDFOS# \_\_\_\_\_  
 2" 4" # \_\_\_\_\_  
 DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2	500ml poly		121	042810: C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		122	
CL	TT08	YES	4 DEG C	500 ML POLY		123	
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		124	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		125	022310: C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		129	022810: C
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG		130	022810: C
DNT	UN26	NO	4 DEG C	1 L AG		131	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)

\*purge H2O containerized for VOC's  
 -used historical volumes

SIGNATURE: [Signature]  
 RECEIVED BY: Nancy E. [Signature]

gnd elev. = 881.5

riser elev. = 884.33

GW elev. = 772.20

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN8201A**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

12-4-91

SITE ID **PBN-82-01A**

JOB NUMBER **6853-04**

SAMPLING DATE **11-25-91 (M)**

LOCATION ACTIVITY **START 11300800 END 11300830**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **Sunny, 5°F**

### WATER LEVEL / WELL DATA

WELL DEPTH **140.7 FT** MEASURED  HISTORICAL  TOP OF WELL **2.23** TOP OF CASING **2.36** PROTECTIVE CASING STICK-UP (FROM GROUND) **FT** PROTECTIVE CASING/WELL DIFF. **18.02** FT

WATER DEPTH **112.57 FT** WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION (BGS) **109.97**

HEIGHT OF WATER COLUMN **24.56 FT** X  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN) = **29** GAL/VOL  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN) **30** TOTAL GAL PURGED **145**

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR **0.3** PPM WELL MOUTH **0.3** PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A CONCRETE COLLAR INTACT  YES  NO  N/A WELL LOCKED  YES  NO  N/A OTHER: **cap**

### PURGE DATA

PURGE VOLUME	10	15 max	15 GALLONS @ 12/3/91		
	a 24 GAL	a 58 GAL	a 87 GAL	a 116 GAL	a 145 GAL
TEMP, DEG C	5.8	4.2			12
pH, UNITS	7.31	7.64			7.3
SPECIFIC CONDUCTIVITY umhos/cm	509	513			467

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_ ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDFOS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	505	0222801C
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	505	0222801C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	506	0203101C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	507	
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	508	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input type="checkbox"/>	309	510 511 0212301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input type="checkbox"/>	513	0128101C
DNT UW26	NO	4 DEG C	1 L AG	<input type="checkbox"/>	514	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,HG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\* purge H2O containerized for VOCs  
 - used historical vol.  
 SIGNATURE: *Paul Smith*  
 RECEIVED BY: *Nancy E. Roira*

- PUMPED DRY @ ABOUT 10 GALLONS TOOK FIRST READINGS, WAITED 10 MIN AND TOOK SECOND READINGS, WAITED 10 MIN. AGAIN. ~~...~~ VERY POOR RECHARGE (11-25-91)  
 - purged 11:22 or 12:31  
 - SAMPLED ON 12-4-91 @ 0830

gnd elev = 881.5

river elev = 883.57

GW elev = 772.23

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 0

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN82018

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 11/25/91

SITE ID PBN-82-018

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1245 END 1345

PROGRAM C

WEATHER overcast, 20-5

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.55 FT

PROTECTIVE CASING/WELL DIFF. -0.53 FT

WELL DEPTH 130.00 FT

MEASURED  
 HISTORICAL

WATER DEPTH 111.34 FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 109.29

HEIGHT OF WATER COLUMN 18.66 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

34 GAL/VOL

170 TOTAL GAL PURGED (170)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.3 PPM

WELL MOUTH 0.3 PPM

### PURGE DATA

PURGE VOLUME

34 GAL

68 GAL

102 GAL

136 GAL

170 GAL

TEMP, DEG C

9.1

9.2

9.4

7.4

8.0

PH, UNITS

6.96

7.21

7.33

7.44

7.47

SPECIFIC CONDUCTIVITY umhos/cm

504

505

501

504

506

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCD #  
GRUNDFOS #  
2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
LIQUINOX  
STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	305	0703101C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	206	
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	207	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	208	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
CO UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	209	210 211 0712301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	214	0728101C
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	215	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* purge H2O containerized for VOCs  
- used historical volumes.

SIGNATURE: *Laura E. Carter*

RECEIVED BY: *Nancy E. Roper*



grd. elev. = 881.5

riser elev. = 835.77

GW elev. = 772.24

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8201C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-82-01C

JOB NUMBER 6853-04

SAMPLING DATE 11.8-91

LOCATION ACTIVITY START 0830 END 1000

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 0°-10° F

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.36 FT

PROTECTIVE CASING/WELL DIFF. -0.52 FT

WELL DEPTH 141 FT

MEASURED  
 HISTORICAL

WATER DEPTH 111.53 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 109.69

HEIGHT OF WATER COLUMN 29.4 FT  
x  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( \_ IN)

45 GAL/VOL

225 TOTAL GAL PURGED (223)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.7 PPM

WELL MOUTH 0.7 PPM

### PURGE DATA

PURGE VOLUME	a 45 GAL	a 40 GAL	a 35 GAL	a 180 GAL	a 225 GAL
TEMP, DEG C	11.1	10.7	10.4	9.9	11.2
pH, UNITS	7.3	7.0	7.5	7.5	7.5
SPECIFIC CONDUCTIVITY umhos/cm	660	648	654	654	639

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)		YES	HN03 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)		YES	HN03 TO pH<2				
<input type="checkbox"/> CA	SS16	YES	HN03 TO pH<2				
<input type="checkbox"/> NA	SS16	YES	HN03 TO pH<2				
<input type="checkbox"/> CD	SS16	YES	HN03 TO pH<2				
<input type="checkbox"/> CR	SS16	YES	HN03 TO pH<2				
<input type="checkbox"/> HG	SB03	YES	HN03 TO pH<2				
<input type="checkbox"/> PB	SD24	YES	HN03 TO pH<2				
<input type="checkbox"/> NI	SS16	YES	HN03 TO pH<2				
<input type="checkbox"/> BA	SS16	YES	HN03 TO pH<2				
<input type="checkbox"/> HARD	USEPA 130.2	YES	HN03 TO pH<2	500 ml poly			
<input type="checkbox"/> NIT	TF10	YES	H2S04 TO pH<2	500 ML POLY			070301C
<input type="checkbox"/> CL	TT08	YES	4 DEG C	500 ML POLY			
<input type="checkbox"/> SO4	TT08	YES	4 DEG C				
<input type="checkbox"/> ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/> TDS	USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TOC	USEPA 415.1	NO	H2S04 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2	USEPA 350.2	NO	H2S04 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
<input type="checkbox"/> BN/A	UM16	NO	4 DEG C	(2) 1 L AG			
<input type="checkbox"/> NG	99	NO	4 DEG C	1 L AG			
<input type="checkbox"/> HAM	UN06	NO	4 DEG C	1 L AG			
<input type="checkbox"/> DNT	UW26	NO	4 DEG C	1 L AG			
<input type="checkbox"/> TPH	USEPA 418.1	NO	H2S04 TO pH<2	1 L GUM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*used historical volumes

SIGNATURE: Paul C. Smith / um

RECEIVED BY: Nancy E. Rofa

ord. elev = 883.0

riser elev = 885.14

GW elev = 771.39

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8202A

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID PBN-82-02A

JOB NUMBER

6853-04

SAMPLING DATE

12.4.91

LOCATION ACTIVITY START 1500 END 1600

PROGRAM

C

FILE NAME

CGW

WEATHER

Sunny, 15°F

### WATER LEVEL / WELL DATA

TOP OF WELL

TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.05 FT

PROTECTIVE CASING/WELL DIFF. -0.05 FT

WELL DEPTH 119.2 FT

MEASURED  
 HISTORICAL

WATER DEPTH 113.75 FT

WELL DIAMETER

2 INCH

4 INCH

6 INCH

GROUNDWATER ELEVATION (EGS)

111.75

GHY OF

ER COLUMN 5.45 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

25 GAL/VOL

125 TOTAL GAL PURGED

(125)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CAP

IS LARGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.4 PPM

WELL MOUTH 0.4 PPM

### WATER QUALITY DATA

TEST VOLUME	@ 25 GAL	@ 20 GAL	@ 15 GAL	@ 10 GAL	@ 25 GAL
TEMP, DEG C	9.4	8.2	8.2	8.0	6.3
PH, UNITS	7.94	7.6	7.6	7.6	7.4
SPECIFIC CONDUCTIVITY umhos/cm	376	804	784	809	814

SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING

PERISTALTIC PUMP

SUBMERSIBLE PUMP

BAILER

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

EQUIPMENT ID

ISCO # \_\_\_\_\_

GRUNDEOS# \_\_\_\_\_

2"  4"  # \_\_\_\_\_

DECON FLUIDS USED

POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

ANALYTICAL PARAMETERS	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	515	022280
CO	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CU	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
FE	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
MN	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NH3N	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NH3N2	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NO3	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NO2	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PO4	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
SE	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
SO4	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
SR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
TI	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
VA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
W	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
ZN	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	515	022280
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	516	022280
CL	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	517	
SO4	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	518	
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS	USEPA 160.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	519	520 521 022280
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	522	523 022280
NG	99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	524	022280
DNT	UN26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	525	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* p. 3e H2O containerized for VOC's  
 - used historical volumes

SIGNATURE: AKC/SL/AC  
 RECEIVED BY: Nancy E. Rosta

grd. elev = 882.9

riser elev = 884.99

GW elev = 770.51

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8202B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-82-02B

JOB NUMBER 6853-04

SAMPLING DATE 12.5.91

LOCATION ACTIVITY START 1430 END 1530\*

PROGRAM C

FILE NAME CGW

WEATHER Snow, 20°F

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.22 FT

PROTECTIVE CASING/WELL DIFF. -0.4 FT

WELL DEPTH 131.2 FT

MEASURED  
 HISTORICAL

WATER DEPTH 114.4 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 112.30

HEIGHT OF WATER COLUMN 16.72 FT  
X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (.4 IN)  
 1.5 GAL/FT (.6 IN)  
 GAL/FT ( \_ IN)

26 GAL/VOL (26)  
130 TOTAL GAL PURGED (130)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 1.0 PPM

WELL MOUTH 1.0 PPM

### PURGE DATA

PURGE VOLUME	@ 26 GAL	@ 52 GAL	@ 78 GAL	@ 104 GAL	@ 130 GAL
TEMP, DEG C	9.0	9.1	9.3	9.4	9.2
pH, UNITS	7.2	7.3	7.3	7.3	7.4
SPECIFIC CONDUCTIVITY umhos/cm	621	593	620	609	617

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
 2"  4" #

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2	500 ml poly		229	
NIT	YES	H2SO4 TO pH<2	500 ML POLY		230	0128101C
CL	YES	4 DEG C	500 ML POLY		231	
SO4	YES	4 DEG C	500 ML POLY		232	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		233	0212801C
BN/A	NO	4 DEG C	(2) 1 L AG		236	0128101C
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		238	0128101C
DNT	NO	4 DEG C	1 L AG		239	
TPH	NO	H2SO4 TO pH<2	1 L GUM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, X/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, X/NA:ICP)

\* purge H2O containerized for DNT

- used historical volumes

\* SAMPLES WERE COLLECTED @ 1630 - LABELS ON BOTTLES WERE NOT CHANGED

SIGNATURE: *Paul S. Hill/ABC*

RECEIVED BY: *Nancy E. Potra*

grd elev = 882.9

water elev = 885.22

Gw elev = 771.48

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

P B N 8 2 0 2 C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID P B N - 1 8 2 - 0 2 C

JOB NUMBER 6853-04

SAMPLING DATE 12 5 91

LOCATION ACTIVITY START 1350 END 1630 ★

PROGRAM C

FILE NAME CGW

WEATHER Snow, 20°F

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE TOP OF CASING CASING STICK-UP (FROM GROUND) 2.25 FT

PROTECTIVE CASING/WELL DIFF. - .10 FT

WELL DEPTH 141.5 FT  MEASURED  HISTORICAL

WATER DEPTH 113.8 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION (BGS) 111.65

HEIGHT OF WATER COLUMN 27.7 FT X  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN) = 18 GAL/VOL  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN) 90 TOTAL GAL PURGED (90)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR 1.0 PPM WELL MOUTH 1.0 PPM

### PURGE DATA

PURGE VOLUME	@ 18 GAL	@ 36 GAL	@ 54 GAL	@ 72 GAL	@ 90 GAL
TEMP, DEG C	25	25	25	9.7	9.1
PH, UNITS	7.5	7.4	7.4	7.5	7.5
SPECIFIC CONDUCTIVITY umhos/cm	563	553	542	556	524

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDEOS# \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2	500 ml poly		241	
<input checked="" type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY		242	042201C
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY		243	
<input checked="" type="checkbox"/> SO4	YES	4 DEG C			↓	
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY		244	
<input checked="" type="checkbox"/> TDS	NO	4 DEG C			↓	
<input checked="" type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		245 / 246 / 247	042201C
<input checked="" type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG		248 / 249	012212C
<input checked="" type="checkbox"/> NG	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM	NO	4 DEG C	1 L AG		350	012212C
<input checked="" type="checkbox"/> DNT	NO	4 DEG C	1 L AG		251	↓
<input checked="" type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\* purge h2o containerized for DNTS:

- USED HISTORICAL VOLUMES

★ WELL DID NOT GO DRY AS ANTICIPATED, COLLECTED SAMPLES

@ 1500 - DID NOT CHANGE BOTTLE LABELS

SIGNATURE: Paul C. Smith / ABC

RECEIVED BY: Nancy E. [Signature]

grid elev = 857.6

riser elev. = 859.94

GW elev. = 769.61

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN 8203A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 11-22-91

SITE ID PBN-82-03A

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1300 END 1400

PROGRAM C

WEATHER overcast, 30°S

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.20 FT

PROTECTIVE CASING/WELL DIFF. 0.08 FT

WELL DEPTH 95.9 FT

MEASURED  
 HISTORICAL

WATER DEPTH 90.93 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 88.21

HEIGHT OF WATER COLUMN 5.0 FT  
X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( \_ IN)

13 GAL/VOL

65 TOTAL GAL PURGED (63)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 1.8 PPM

WELL MOUTH 1.8 PPM

### PURGE DATA

PURGE VOLUME	@ 13 GAL	@ 20 GAL	@ 39 GAL	@ 52 GAL	@ 65 GAL
TEMP, DEG C	11.1	11.1	11.1	11.1	10.6
pH, UNITS	7.4	7.4	7.3	7.3	7.4
SPECIFIC CONDUCTIVITY umhos/cm	542	541	537	539	538

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY @ FIRST  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDEOS# \_\_\_\_\_  
2"  4"

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		253	0428101C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		254	
CL TT08	YES	4 DEG C	500 ML POLY		255	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		256	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		257 / 258 / 259	0128101C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		260 / 261	0128101C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		262	0128101C
DNT UW26	NO	4 DEG C	1 L AG		263	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\*purge H2o contained for VOC's  
-used historical volumes  
HANDLE OF BOTTOM SANDWELL BROKE & FELL DOWN THE WELL.

SIGNATURE: R. C. Smith  
RECEIVED BY: Nancy E. Rota

2nd elev = 357.6

1st elev = 860.16

FW elev = 769.56

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8203B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-82-03B

JOB NUMBER 6853-04

SAMPLING DATE 11-24-91

LOCATION ACTIVITY START 11:55 1430 END 1515

PROGRAM C

FILE NAME CGW

WEATHER cloudy, wind 20°F 0" W.C.

### WATER LEVEL / WELL DATA

WELL DEPTH 109.8 FT

MEASURED  
 HISTORICAL

TOP OF WELL

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.1 FT

PROTECTIVE CASING/WELL DIFF. -0.02 FT

WATER DEPTH 90.6 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 88.52

HEIGHT OF WATER COLUMN 19.2 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

12 GAL/VOL

60 TOTAL GAL PURGED (59)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR PPM

WELL MOUTH PPM

### PURGE DATA

PURGE VOLUME	@ 12 GAL	@ 24 GAL	@ 36 GAL	@ 48 GAL	@ 60 GAL
TEMP, DEG C	7.4	7.6	8.5	8.3	7.4
PH, UNITS	7.53	7.79	7.70	7.71	7.73
SPECIFIC CONDUCTIVITY umhos/cm	539	515	523	523	517

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURSID  
 OOCR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2	500 ml poly		265	042201C
<input checked="" type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY		266	
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY		267	
<input checked="" type="checkbox"/> SO4	YES	4 DEG C				
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY		268	
<input checked="" type="checkbox"/> TDS	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		269	0212301C
<input checked="" type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG		272	022201C
<input checked="" type="checkbox"/> NG	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM	NO	4 DEG C	1 L AG		274	022201C
<input checked="" type="checkbox"/> DNT	NO	4 DEG C	1 L AG		275	
<input checked="" type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for VOC's  
- used historical volumes  
- sample not collected until ~ 1630

SIGNATURE: [Signature]  
RECEIVED BY: [Signature]

gwl elev = 257.6

msl elev = 560.06

gwl elev = 767.52

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN8203C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

1124 31

SITE ID **PBN-82-03C**

JOB NUMBER **6853-04**

SAMPLING DATE **11-22-91**

LOCATION ACTIVITY START ~~1530~~ **1430** END ~~1630~~ **1530**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **cloudy with flurries 20° to 25°**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.41** FT PROJECTIVE CASING/WELL DIFF. **- .46** FT

WELL DEPTH **116.52** FT  MEASURED  HISTORICAL

WATER DEPTH **90.54** FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION **88.57**

HEIGHT OF WATER COLUMN **25.98** FT  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN)

**18** GAL/VOL **91** TOTAL GAL PURGED **(91)**

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR PPM WELL MOUTH PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO CONCRETE COLLAR INTACT  YES  NO WELL LOCKED  YES  NO OTHER: **cap**

### PURGE DATA

PURGE VOLUME	@ 18 GAL	@ 36 GAL	@ 54 GAL	@ 72 GAL	@ 91 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>7.3</u>	<u>7.7</u>	<u>7.9</u>	<u>8.0</u>	<u>7.9</u>	
pH, UNITS	<u>7.73</u>	<u>7.67</u>	<u>7.67</u>	<u>7.66</u>	<u>7.65</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>614</u>	<u>623</u>	<u>619</u>	<u>624</u>	<u>627</u>	

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_ ISCD # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDFOS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		277	072010C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		278	
CL TT08	YES	4 DEG C	500 ML POLY		279	
SO4 TT08	YES	4 DEG C			↓	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		280	
TDS USEPA 160.1	NO	4 DEG C			↓	
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		281	021230IC
BN/A UM16	NO	4 DEG C	(2) 1 L AG		284	012210IC
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		286	012210IC
DNT UW26	NO	4 DEG C	1 L AG		287	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for voc's  
-used historical volumes

SIGNATURE: Laura E. Cate

RECEIVED BY: Nancy E. Rotta

art. elev. = 773.0

riser elev. = 874.74

GW elev. = 769.20

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 01

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8204A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

12-7-91

SITE ID PBN-82-04A

JOB NUMBER 6853-04

SAMPLING DATE 12-7-91

LOCATION ACTIVITY START 0800 END 0830

PROGRAM C

FILE NAME CGW

WEATHER CLEAR 40°F

### WATER LEVEL / WELL DATA

WELL DEPTH 110.3 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) 1.25 FT

PROTECTIVE CASING/WELL DIFF. FLSH FT

WATER DEPTH 105.54 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 103.69

HEIGHT OF WATER COLUMN 4.74 FT X  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

GAL/VOL 1.5 TOTAL GAL PURGED 10

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR .6 PPM

WELL MOUTH .6 PPM

### PURGE DATA

PURGE VOLUME	@ 2 GAL	@ GAL	@ GAL	@ GAL	@ GAL
TEMP, DEG C	7.6				
pH, UNITS	7.8				
SPECIFIC CONDUCTIVITY umhos/cm					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED (Blue-Green)  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS#  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS Lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	H2SO4 TO pH<2	500 ML POLY	12-9-91 526		0222501C
CL	YES	4 DEG C	500 ML POLY	12-9-91 527		0222501C
SO4	YES	4 DEG C		12-9-91 528		
ALK	NO	4 DEG C	500 ML POLY	12-9-91 529		
TDS	NO	4 DEG C		12-9-91		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	NHCL, 4 DEG C	(3)40 ML VIAL	12-9-91 530	531	0222501C
BN/A	NO	4 DEG C	(2) 1 L AG	533	534	0222501C
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM	12-9-91 535		0222501C
				536		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,Py,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\* purge H2O containerized for DNT.  
CONDUCTIVITY METER NOT WORKING  
PURGED WITH BAILER - GOT ABOUT 2.5+ GALLONS OUT

SIGNATURE: \_\_\_\_\_  
RECEIVED BY: Nancy E. [Signature]

- COLLECTED VPAS & ALK/TDS ON 12-7-91 (0830) - well dry  
(0900) - 12-8-91 collected 2/3 of 1 L - very silty - well dry - DNT  
(1400) 12-9-91 collected 1 bailer from well - 500 ml to C/50, ~ 200 ml to Nit - well dry



3rd elev. = 873.0

7th elev. = 874.53

GW elev. = 769.21

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8204B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-82-04B

JOB NUMBER 6853-04

SAMPLING DATE 11.22.91

LOCATION ACTIVITY START 0800 END 0900

PROGRAM C

FILE NAME CGW

WEATHER overcast, 30's-40's

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.82 FT

PROTECTIVE CASING/WELL DIFF. +0.05 FT

WELL DEPTH 20.5 FT

MEASURED  
 HISTORICAL

WATER DEPTH 105.37 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 103.60

HEIGHT OF WATER COLUMN 15.13 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

11 GAL/VOL

55 TOTAL GAL PURGED (56)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CAP

RUDGE H2O CONTAINED? YES  NO

WELL MATERIAL PVC  SS

AMBIENT AIR 0.6 PPM

WELL MOUTH 0.6 PPM

### PURGE DATA

PURGE VOLUME	@ 11 GAL	@ 22 GAL	@ 33 GAL	@ 44 GAL	@ 55 GAL
TEMP, DEG C	10.6	10.6	10.6	10.6	10.6
pH, UNITS	7.7	7.7	7.6	7.6	7.6
SPECIFIC CONDUCTIVITY umhos/cm	615	608	618	607	608

### SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	FSS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2	500 ml poly		289	0428101C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		290	
CL	YES	4 DEG C	500 ML POLY		291	
SO4	YES	4 DEG C	500 ML POLY		292	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		293	021230.C
BN/A	NO	4 DEG C	(2) 1 L AG		296	0128101C
NG	NO	4 DEG C	1 L AG		297	
NAM	NO	4 DEG C	1 L AG		298	0128101C
DNT	NO	4 DEG C	1 L AG		299	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:JCP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:JCP)

\* purge H2O containerized for VOC's  
- used historical volumes

SIGNATURE: *[Signature]*  
RECEIVED BY: Nancy E. Roffa

well is above casing therefore does not lock

and  
AW = 875.0

maser  
elev. = 875.48

GW  
elev. = 767.11

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FBN2204C

PAGE

PROJECT USATHAMA-BAAP

FIELD SAMPLING NUMBER

FBN-82M

SITE ID PBN-182-04C

SITE TYPE WELL

SAMPLING DATE 11-22-91

LOCATION ACTIVITY START 0715 END 1030

JOB NUMBER 6853-04

FILE NAME CGW

PROGRAM C

WEATHER Overcast, 30's H

### WATER LEVEL / WELL DATA

WELL DEPTH 130 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND)

1.78 FT

PROTECTIVE CASING/WELL DIFF. +0.03 FT

WATER DEPTH 106.37 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 104.62

HEIGHT OF WATER COLUMN 23.63 FT X  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

GAL/VOL 85 TOTAL GAL PURGED 85

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.6 PPM

WELL MOUTH 0.6 PPM

### PURGE DATA

PURGE VOLUME	@ 17 GAL	@ 34 GAL	@ 51 GAL	@ 68 GAL	@ 85 GAL
TEMP, DEG C	12.0	11.1	11.1	11.2	11.1
PH, UNITS	7.6	7.5	7.5	7.3	7.5
SPECIFIC CONDUCTIVITY umhos/cm	600	605	604	605	604

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA	YES	HNO3 TO pH<2			
NA	YES	HNO3 TO pH<2			
CD	YES	HNO3 TO pH<2			
CR	YES	HNO3 TO pH<2			
HG	YES	HNO3 TO pH<2			
PB	YES	HNO3 TO pH<2			
NI	YES	HNO3 TO pH<2			
BA	YES	HNO3 TO pH<2			
HARD	YES	HNO3 TO pH<2	500 ml poly		
NIT	YES	H2SO4 TO pH<2	500 ML POLY		
CL	YES	4 DEG C	500 ML POLY		
SC4	YES	4 DEG C			
ALK	NO	4 DEG C	500 ML POLY		
TDS	NO	4 DEG C			
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		
BN/A	NO	4 DEG C	(2) 1 L AG		
NG	NO	4 DEG C	1 L AG		
NAM	NO	4 DEG C	1 L AG		
DNT	NO	4 DEG C	1 L AG		
TPH	NO	H2SO4 TO pH<2	1 L GUM		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:LEP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:LEP)

\*purge H2O containerized for VOC's  
-used historical volumes

SIGNATURE: [Signature]  
RECEIVED BY: Tracey E. Kotica

well above casing. Has lock but won't close all the way to lock it.  
POOR RECHARGE

2 *and*  
 elev = 875.2    rslp elev = 878.50    gw elev = 767.64

**ABB ENVIRONMENTAL SERVICES, INC.** PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER** FIELD SAMPLING NUMBER **PBN 205A**

PROJECT **USATHAMA-BAAP** SITE TYPE **WELL**

SITE ID **PBN-82-05A** JOB NUMBER **6853-04** SAMPLING DATE **12-5-91**

LOCATION ACTIVITY **START 1030 END 1100** PROGRAM **C** FILE NAME **CGW**

WEATHER **SNOW, 10°F**  
*windy*

**WATER LEVEL / WELL DATA**

TOP OF WELL    PROTECTIVE CASING STICK-UP (FROM GROUND) **2.5** FT    PROTECTIVE CASING/WELL DIFF. **-1.23** FT  
 TOP OF CASING

WELL DEPTH **112.2** FT     MEASURED     HISTORICAL  
 WATER DEPTH **108.8** FT    WELL DIAMETER  2 INCH    GROUNDWATER ELEVATION (BGS) **106.59**

HEIGHT OF WATER COLUMN **3.34** FT     .16 GAL/FT (2 IN)    GAL/VOL    TOTAL GAL PURGED **6**  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

PURGE H2O CONTAINED?  YES     NO    WELL MATERIAL  PVC     SS    AMBIENT AIR **1.0** PPM    WELL MOUTH **1.3** PPM

WELL INTEGRITY: PROT. CASING SECURE  YES     NO     N/A  
 CONCRETE COLLAR INTACT  YES     NO     N/A  
 WELL LOCKED  YES     NO     N/A  
 OTHER: **CGW**

**PURGE DATA**

PURGE VOLUME	@ 2 GAL	@ 6 GAL	@ GAL	@ GAL	@ GAL
TEMP, DEG C	<b>7.0</b>	<b>7.0</b>			
pH, UNITS	<b>8.98</b>	<b>8.1</b>			
SPECIFIC CONDUCTIVITY umhos/cm	<b>72.2</b>	<b>804</b>			

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING     SAMPLING   
 PERISTALTIC PUMP    EQUIPMENT ID    DECON FLUIDS USED    WATER LEVEL EQUIP. USED  
 SUBMERSIBLE PUMP    ISCO #     POTABLE WATER     ELECTRIC COND. PROBE  
 BAILER    GRUNDEOS#     LIQUINOX     FLOAT ACTIVATED  
 PVC/SILICON TUBING     2"     4" #     STEAM CLEANING     PRESSURE TRANSDUCER  
 IN-LINE/DISPOSABLE FILTER    NUMBER OF FILTERS USED **1**  
 OTHER **ISCO PCS**

**ANALYTICAL PARAMETERS**

	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
<input type="checkbox"/> CA	SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA	SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD	SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR	SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG	SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB	SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI	SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA	SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD	USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		<b>313</b>	<b>0703101C</b>
<input type="checkbox"/> NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		<b>314</b>	
<input type="checkbox"/> CL	TT08	YES	4 DEG C	500 ML POLY		<b>315</b>	
<input type="checkbox"/> SO4	TT08	YES	4 DEG C				
<input type="checkbox"/> ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		<b>316</b>	
<input type="checkbox"/> TDS	USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		<b>317</b>	<b>0212301C</b>
<input type="checkbox"/> BN/A	UM16	NO	4 DEG C	(2) 1 L AG		<b>320</b>	<b>0225101C</b>
<input type="checkbox"/> NG	99	NO	4 DEG C	1 L AG			
<input type="checkbox"/> NAM	UN06	NO	4 DEG C	1 L AG		<b>322</b>	<b>0125101C</b>
<input type="checkbox"/> DNT	UM26	NO	4 DEG C	1 L AG		<b>323</b>	
<input type="checkbox"/> TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for VOC's  
 Purged w/ Bailer on 12-4-91 (dry)

SIGNATURE: *Paul Smith 1/86*  
 RECEIVED BY: *Nancy E. Potter*

917  
2110 = 875.8

riser  
elov = 877.68

flow  
elov = 767.58

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8205B

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID PBN-82-05B

JOB NUMBER

6853-04

SAMPLING DATE

12-5-91

LOCATION ACTIVITY: START 1115 END 1145

PROGRAM

C

FILE NAME

CGW

WEATHER

SNOW, 10°F

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.0 FT

PROTECTIVE CASING/WELL DIFF.

-0.35 FT

WELL DEPTH 120.4 FT

MEASURED  
 HISTORICAL

WATER DEPTH 108.16 FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

106.51

HEIGHT OF WATER COLUMN

8.84 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

GAL/VOL

30.0 TOTAL GAL PURGED

WELL INTEGRITY:

PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: CAP

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 1.1 C PPM

WELL MOUTH 1.1 C PPM

### PURGE DATA

PURGE VOLUME	@ 22 GAL	@ 30 GAL	@ GAL	@ GAL	@ GAL
TEMP, DEG C	2.3	5.9			
pH, UNITS	8.65	7.63			
SPECIFIC CONDUCTIVITY umhos/cm	907	969			

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO #  
 GRUNDEOS#  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2	500 ml poly		325	0000000000
NIT	YES	H2SO4 TO pH<2	500 ML POLY		326	
CL	YES	4 DEG C	500 ML POLY		327	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		328	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		329	0000000000
BN/A	NO	4 DEG C	(2) 1 L AG		332	0000000000
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		334	0000000000
DNT	NO	4 DEG C	1 L AG		335	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, NG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for VOC's  
 PURGED DRY @ 30 GALLOUS ON 12-4-91

SIGNATURE: [Signature]

RECEIVED BY: Nancy E. [Signature]

QTCI  
Elev. = 875.8

ASPER  
Elev. = 878.18

GW  
Elev. = 769.75

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8205C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.6.91

SITE ID PBN-82-05C

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0930 END 1030

PROGRAM C

WEATHER CLEAR 20° BREEZY

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.12 FT

PROTECTIVE CASING/WELL DIFF. FLUSH FT

WELL DEPTH 133.5 FT

MEASURED  
 HISTORICAL

WATER DEPTH 108.43 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

106.31

HEIGHT OF WATER COLUMN 25.07 FT  
X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_\_\_ IN)

18 GAL/VOL

90 TOTAL GAL PURGED (90)

WELL INTEGRITY:

PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CAP

YES NO N/A

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR .8 PPM

WELL MOUTH .8 PPM

### PURGE DATA

PURGE VOLUME	@ 18 GAL	@ 36 GAL	@ 54 GAL	@ 72 GAL	@ 90 GAL
TEMP, DEG C	6.8	5.6	8.6	8.6	8.6
PH, UNITS	7.88	7.5	7.4	7.4	7.4
SPECIFIC CONDUCTIVITY umhos/cm	731	729	736	730	733

### SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDEOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		337	042201C
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		338	
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		339	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		340	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		341 / 342 / 343	021230C
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG		344 / 345	022810C
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG		346	012810C
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG		347	
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for DNT  
-used historical volumes

SIGNATURE: RESNAIS

RECEIVED BY: Nancy E. Poria

grd. elev. = 915.5 riser elev. = 917.51 GW elev. = 771.79

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE 1

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

L0m9101

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID L0m-91-01

JOB NUMBER

6853-04

SAMPLING DATE

11/7/91

LOCATION ACTIVITY

START 0830 END 1000

PROGRAM

C

FILE NAME

CGW

WEATHER

sunny, 10-10F

**WATER LEVEL / WELL DATA**

WELL DEPTH 152 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.12 FT

PROTECTIVE CASING/WELL DIFF.

-0.21 FT

WATER DEPTH 145.72 FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BAS)

143.81

HEIGHT OF WATER COLUMN

6.28 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

12.4 GAL/VOL

TOTAL GAL PURGED

62

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER:  YES  NO  N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.6 PPM

WELL MOUTH 0.6 PPM

**PURGE DATA**

PUMP RATE @  $\approx$  2.0 GAL/MIN

PURGE VOLUME	@ 12 GAL	@ 24 GAL	@ 36 GAL	@ 48 GAL	@ 60 GAL
TEMP, DEG C	10.5	10.3	10.3	10.1	9.9
PH, UNITS	8.5	7.9	7.8	7.7	7.7
SPECIFIC CONDUCTIVITY umhos/cm	648	654	652	645	640

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOUR  
 OTHER (SEE NOTES)

(SAMPLE CLEAN 1 = 10% #12)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

EQUIPMENT ID  
PERISTALTIC PUMP ISCO #  
SUBMERSIBLE PUMP GRUNDFOS#  
BAILER  2"  4" #  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot#
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			61	0428101C
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			61	0428101C
NIT	YES	HNO3 TO pH<2	500 ML POLY		62	0703101C
CL	YES	4 DEG C	500 ML POLY		63	
SO4	YES	4 DEG C			64	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		65	0212301C
BN/A	NO	4 DEG C	(2) 1 L AG		66	
NG	NO	4 DEG C	1 L AG		67	0428101C
NAM	NO	4 DEG C	1 L AG		70	0128101C
DNT	NO	4 DEG C	1 L AG		71	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES**

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\* see attached for volume calculation  
HAD DIFFICULTY INITIALLY DUE TO THE WIRE BEING SO DEEP FOR THE CABLE TO REACH. JUST BARELY ABLE TO PUMP.

SIGNATURE: *R.C. Smith*  
RECEIVED BY: *Nancy E. [Signature]*

\* sample was preserved w/ H2SO4

GW elev = 9103 riser elev = 910.30

GW elev = 773.36

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

LOM9102

PROJECT USATHAMA-BAAP

SITE TYPE WELL

12.12.91  
12.12.91 (M)

SITE ID LOM-91-02

JOB NUMBER 6853-04

SAMPLING DATE 12.5.91 (M)

LOCATION ACTIVITY START 1545 1300 END 1630 1400

PROGRAM C

FILE NAME CGW

WEATHER Partly 40°S  
RAIN

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.33 ± FT

PROTECTIVE CASING/WELL DIFF. - .11 FT

WELL DEPTH 146.05 FT

MEASURED  
 HISTORICAL

WATER DEPTH 138.44 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 136.22

HEIGHT OF WATER COLUMN 7.61 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

19 GAL/VOL

95 TOTAL GAL PURGED (93)

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

**PURGE DATA**

PURGE VOLUME	19 GAL	38 GAL	57 GAL	76 GAL	95 GAL
TEMP, DEG C	11.0	11.1	11.0	11.2	11.2
PH, UNITS	7.5	7.4	7.4	7.3	7.4
SPECIFIC CONDUCTIVITY umhos/cm	524	476	475	475	475

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	73	022280.C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	73	022280.C
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	74	070310.C
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	75	
SO4	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	76	
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	NO	NCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	77	021750.C
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	80	022510.C
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	83	

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used volumes from development

SIGNATURE: *Paul S. ...*  
RECEIVED BY: *Nancy E. Rora*

nd. elev. = 915.7

rise elev. = 917.86

GW elev. = 771.73

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 0

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

L O M 89 01

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID L O M - 89 - 01

JOB NUMBER

6853-04

SAMPLING DATE

11-23-91

LOCATION ACTIVITY START 1415 END 1530

PROGRAM

C

FILE NAME

CGW

WEATHER

snow/rain

### WATER LEVEL / WELL DATA



TOP OF WELL  
TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.47 FT

PROTECTIVE CASING/WELL DIFF. -0.33 FT

WELL DEPTH 157.3 FT

MEASURED  
 HISTORICAL

WATER DEPTH 146.08 FT

WELL DIAMETER  
 2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

144.94

HEIGHT OF WATER COLUMN 11.62 FT X  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

19.3 GAL/VOL

95 TOTAL GAL PURGED

WELL INTEGRITY:

PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: CAP

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR PPM

WELL MOUTH PPM

### PURGE DATA

PURGE VOLUME	@ 19 GAL	@ 38 GAL	@ 57 GAL	@ 76 GAL	@ 95 GAL
TEMP, DEG C	9.3	10.4	9.7	9.7	9.8
PH, UNITS	7.65	7.18	7.22	7.25	7.28
SPECIFIC CONDUCTIVITY umhos/cm	1623	624	790	1631	645

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
 SAMPLING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO #  
 GRUNDEOS#  
 2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	022201C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	022201C
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	022201C
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>	
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>	
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>	
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>	
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	022201C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	022201C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	022201C
DNT UN26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for VOC's  
 -see calculations for purge volumes

SIGNATURE: *R. C. Smith*  
 RECEIVED BY: *Nancy E.*



grd. elev. = 918.5    riser elev. = 920.59    GW elev. = 771.37

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

LON8902A

PROJECT USAYAMA-BAAP

SITE TYPE WELL

SITE ID LON-89-02A

JOB NUMBER 6853-04

SAMPLING DATE 12-7-91

LOCATION ACTIVITY START 0930 END 1030

PROGRAM C

FILE NAME CGW

WEATHER clear, 40's

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.92 FT

PROTECTIVE CASING/WELL DIFF. -0.13 FT

WELL DEPTH 157.3 FT

MEASURED  
 HISTORICAL

WATER DEPTH 149.22 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 147.43

HEIGHT OF WATER COLUMN 8.08 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

14 GAL/VOL

70 TOTAL GAL PURGED (40)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CMP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR .6 PPM

WELL MOUTH .6 PPM

**PURGE DATA**

PURGE VOLUME	14 GAL	28 GAL	42 GAL	56 GAL	70 GAL
TEMP, DEG C	11.1	11.4	11.4	11.4	11.4
pH, UNITS	7.5	7.4	7.4	7.4	7.4
SPECIFIC CONDUCTIVITY umhos/cm	826	605	593	600	596

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			13	022801C
<input type="checkbox"/> CA	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD	YES	HNO3 TO pH<2			13	022801C
<input type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY		14	042210C
<input type="checkbox"/> CL	YES	4 DEG C	500 ML POLY		15	
<input type="checkbox"/> SO4	YES	4 DEG C	500 ML POLY		16	
<input type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/> TDS	NO	4 DEG C				
<input type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		17	022801C
<input type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG		20	022801C
<input type="checkbox"/> NG	NO	4 DEG C	1 L AG			
<input type="checkbox"/> NAM	NO	4 DEG C	1 L AG			
<input type="checkbox"/> DNT	NO	4 DEG C	1 L AG		22	022801C
<input type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GWM		23	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* purge H2O containerized for VOCs  
- used historical volumes see attached for volumes  
SIGNATURE: *Rebecca L. ABC*  
RECEIVED BY: *Nancy E. Potts*

2nd Elev. = 918.9 riser elev. = 921.13 GW elev. = 771.35

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER **LON8902B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **LON-89-02B**

JOB NUMBER **6853-04**

SAMPLING DATE **12791**

LOCATION ACTIVITY **START 1045 END 1145**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **clear 40s**

**WATER LEVEL / WELL DATA**

TOP OF WELL PROTECTIVE TOP OF CASING CASING STICK-UP (FROM GROUND) **2.3** FT PROTECTIVE CASING/WELL DIFF. **-.19** FT

WELL DEPTH **200.6** FT  MEASURED  HISTORICAL

WATER DEPTH **149.78** FT WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION (BGS) **147.67**

HEIGHT OF WATER COLUMN **50.82** FT  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN)

**50** GAL/VOL **250** TOTAL GAL PURGED

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR **.5** PPM WELL MOUTH **.6** PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A CONCRETE COLLAR INTACT  YES  NO  N/A WELL LOCKED  YES  NO  N/A OTHER: **cap**

**PURGE DATA**

PURGE VOLUME	@ 50 GAL	@ 100 GAL	@ 150 GAL	@ 200 GAL	@ 250 GAL
TEMP, DEG C	<b>11.2</b>	<b>11.4</b>	<b>11.5</b>	<b>11.6</b>	<b>11.7</b>
pH, UNITS	<b>7.7</b>	<b>7.6</b>	<b>7.5</b>	<b>7.5</b>	<b>7.5</b>
SPECIFIC CONDUCTIVITY umhos/cm	<b>541</b>	<b>519</b>	<b>517</b>	<b>519</b>	<b>516</b>

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  PERISTALTIC PUMP EQUIPMENT ID \_\_\_\_\_ ISCO # \_\_\_\_\_

SAMPLING  SUBMERSIBLE PUMP  BRUNNENOS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	ESS lot #
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	25 / / / 02230.C
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	25 / / / 02230.C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	26 / / / 04230.C
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>	
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>	
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	29 / 30 / 31 / 02230.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	32 / 33 / / 02230.C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	34 / / / 02230.C
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	35 / / / ↓
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- see attached for volumes

SIGNATURE: *Paul S. Smith*  
 RECEIVED BY: *Nancy E. R...*

2nd elev = 919.2

riser elev. = 922.14

GW elev. = 771.14

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

LON8903A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.7.91

SITE ID LON-89-03A

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1200 END 1300

PROGRAM C

WEATHER clear, 40's

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.81 FT

PROTECTIVE CASING/WELL DIFF.

-0.16 FT

WELL DEPTH 160.0 FT

MEASURED  
 HISTORICAL

WATER DEPTH 151.00 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

148.35

HEIGHT OF WATER COLUMN 9.6 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

16 GAL/VOL

80 TOTAL GAL PURGED (160)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR .4 PPM

WELL MOUTH .4 PPM

### PURGE DATA

PURGE VOLUME	@ 16 GAL	@ 32 GAL	@ 48 GAL	@ 64 GAL	@ 80 GAL
TEMP, DEG C	11.7	11.7	11.7	11.6	11.7
PH, UNITS	7.7	7.5	7.4	7.4	7.5
SPECIFIC CONDUCTIVITY umhos/cm	505	506	505	502	504

#### SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	ESS lot #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	37 / 0222301C
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	37 / 0222301C
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	38 / 0422101C
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	39 /
ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>	40 /
TDS	NO	4 DEG C		<input type="checkbox"/>	
TOC	NO	H2SO4 TO pH<2 (3)40 ML VIAL		<input type="checkbox"/>	
NH3N2	NO	H2SO4 TO pH<2 500 ML POLY		<input type="checkbox"/>	
VOC	NO	HCL, 4 DEG C (3)40 ML VIAL		<input type="checkbox"/>	
BN/A	NO	4 DEG C (2) 1 L AG		<input type="checkbox"/>	41 / 42 / 43 / 0212301C
NG	NO	4 DEG C	1 L AG	<input type="checkbox"/>	44 / 45 / 0222101C
NAM	NO	4 DEG C	1 L AG	<input type="checkbox"/>	46 / 0122101C
DNT	NO	4 DEG C	1 L AG	<input type="checkbox"/>	47 /
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* purge H2O containerized for VOC's  
- used historical volumes (see attached for volume)

SIGNATURE: Paul CS tl/adc

RECEIVED BY: Nancy E. Rofka

gnd elev. = 919.5

riser elev. = 921.99

GW elev. = 771.33

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 01 OF 01

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER LON8903B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID LON-89-03B

JOB NUMBER 6853-04

SAMPLING DATE 1279

LOCATION ACTIVITY START 1315 END 1415

PROGRAM C

FILE NAME CGW

WEATHER clear, 40s

### WATER LEVEL / WELL DATA

WELL DEPTH 200.6 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.46 FT

PROTECTIVE CASING/WELL DIFF. -0.20 FT

WATER DEPTH 150.66 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 148.40

HEIGHT OF WATER COLUMN 49.94 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

55 GAL/VOL

275 TOTAL GAL PURGED

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: CAP

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR .4 PPM

WELL MOUTH A PPM

### PURGE DATA

PURGE VOLUME	@ 55 GAL	@ 110 GAL	@ 165 GAL	@ 220 GAL	@ 275 GAL
TEMP, DEG C	<u>11.4</u>	<u>11.4</u>	<u>11.3</u>	<u>11.2</u>	<u>11.4</u>
PH, UNITS	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	<u>7.5</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>549</u>	<u>547</u>	<u>546</u>	<u>548</u>	<u>562</u>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDFOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			49	022230.C
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			49	022230.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		50	042810.C
CL TT08	YES	4 DEG C	500 ML POLY		51	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		52	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		53	021230.C
BN/A UM16	NO	(2) 1 L AG			56	022810.C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		52	022810.C
DNT UW26	NO	4 DEG C	1 L AG		59	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MM, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* purge H2O contained for voc's (NE)  
- All attached for volumes

SIGNATURE: [Signature]  
RECEIVED BY: Nancy E. [Signature]

Jmt elev = 821.6  
 riser elev = 824.03  
 GW elev = 761.76

**ABB ENVIRONMENTAL SERVICES, INC.** PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER: **SPN9102D**  
 PROJECT: **USATHAMA-BAAP**  
 SITE ID: **SPN-91-02D**  
 LOCATION ACTIVITY: **START 1015 END 1200**  
 SITE TYPE: **WELL**  
 JOB NUMBER: **6853-04**  
 PROGRAM: **C**  
 SAMPLING DATE: **12-13-91**  
 FILE NAME: **CGW**  
 WEATHER: **Clear & Sunny 30"**

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND): **2.52 FT**  
 PROTECTIVE CASING/WELL DIFF.: **-.09 FT**  
 WELL DEPTH: **184.77 FT**  
 MEASURED  
 HISTORICAL  
 WATER DEPTH: **62.27 FT**  
 WELL DIAMETER:  2 INCH  
 4 INCH  
 6 INCH  
 GROUNDWATER ELEVATION (BGS): **59.84**  
 HEIGHT OF WATER COLUMN: **122.50 FT**  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
**107** GAL/VOL  
**535** TOTAL GAL PURGED **(530)**  
 WELL INTEGRITY:  
 PROT. CASING SECURE:  YES  NO  N/A  
 CONCRETE COLLAR INTACT:  YES  NO  N/A  
 WELL LOCKED:  YES  NO  N/A  
 OTHER: **CAP**  
 PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL:  PVC  SS  
 AMBIENT AIR: **.5** PPM  
 WELL MOUTH: **.5** PPM

**PURGE DATA**

PURGE VOLUME	2107 GAL	2214 GAL	2321 GAL	2428 GAL	2535 GAL
TEMP, DEG C	9.6	9.9	9.8	9.8	9.7
PH, UNITS	7.6	7.5	7.7	7.6	7.6
SPECIFIC CONDUCTIVITY umhos/cm	385	390	386	386	389

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING:  (2)  
 SAMPLING:   
 EQUIPMENT ID: **ISCO #**  
 DECON FLUIDS USED:  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER: \_\_\_\_\_  
 NUMBER OF FILTERS USED: **1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1324	022501C
CA	SS16	HNO3 TO pH<2				
NA	SS16	HNO3 TO pH<2				
CD	SS16	HNO3 TO pH<2				
CR	SS16	HNO3 TO pH<2				
HG	SB03	HNO3 TO pH<2				
PB	SD24	HNO3 TO pH<2				
NI	SS16	HNO3 TO pH<2				
BA	SS16	HNO3 TO pH<2				
HARD	USEPA 130.2	HNO3 TO pH<2			1324	022501C
NIT	TF10	H2SO4 TO pH<2	500 ML POLY		1325	0703101C
CL	TT08	4 DEG C	500 ML POLY		1326	
SO4	TT08	4 DEG C				
ALK	USEPA 310.1	4 DEG C	500 ML POLY		1327	
TDS	USEPA 160.1	4 DEG C				
TOC	USEPA 415.1	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	HCL, 4 DEG C	(3)40 ML VIAL		1328	0212301C
BN/A	UM16	4 DEG C	(2) 1 L AG		1329	0225101C
NG	99	4 DEG C	1 L AG			
NAM	UN06	4 DEG C	1 L AG		1330	
DNT	UN26	4 DEG C	1 L AG		1331	
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GWM		1332	

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- used volumes from development

SIGNATURE: Rec. Staff  
 RECEIVED BY: Wendy E. Poirer

ord. elev. = 816.7

riser elev. = 819.36

GW elev. = 761.02

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT USATHAMA-BAAP

SITE ID SPN-91-03D

LOCATION ACTIVITY START 0930 END 1200

FIELD SAMPLING NUMBER SPN9103D

SITE TYPE WELL

JOB NUMBER 6853-04

PROGRAM C

SAMPLING DATE 12-10-91

FILE NAME CGW

WEATHER 40° SWUY

### WATER LEVEL / WELL DATA

WELL DEPTH 203.28 FT  MEASURED  HISTORICAL

WATER DEPTH 58.34 FT

HEIGHT OF WATER COLUMN 144.94 FT

PROTECTIVE CASING/WELL DIFF. 2.30 FT

PROTECTIVE CASING STICK-UP (FROM GROUND) -.13 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) 56.17

HEIGHT OF WATER COLUMN  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)

TOTAL GAL PURGED (621)

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

OTHER: CAP

### PURGE DATA

PURGE VOLUME	<u>124</u> GAL	<u>246</u> GAL	<u>372</u> GAL	<u>496</u> GAL	<u>620</u> GAL
TEMP, DEG C	<u>9.4</u>	<u>9.3</u>	<u>9.3</u>	<u>9.5</u>	<u>9.4</u>
pH, UNITS	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	<u>7.7</u>	<u>7.6</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>664</u>	<u>663</u>	<u>667</u>	<u>664</u>	<u>664</u>

- SAMPLE OBSERVATIONS
- CLEAR
  - CLOUDY
  - COLORED
  - TURBID
  - ODOR
  - OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP

SAMPLING  SUBMERSIBLE PUMP

BAILER

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

EQUIPMENT ID

ISCO # \_\_\_\_\_

GRUNDEOS# \_\_\_\_\_

2"  4" # \_\_\_\_\_

DECON FLUIDS USED

POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1336	02280.C
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CO	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1336	02280.C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1337	070310.C
CL	YES	4 DEG C	500 ML POLY		1338	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		1339	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		1340	021230.C
BN/A	NO	4 DEG C	(2) 1 L AG		1343	022810.C
NG	NO	4 DEG C	1 L AG		1345	
NAM	NO	4 DEG C	1 L AG		1346	
DNT	NO	4 DEG C	1 L AG		1347	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, NG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used volumes from development

SIGNATURE: [Signature]

RECEIVED BY: Nancy E. R.

grd elev = 800.8

riser elev. = 800.58

GW elev. = 761.38

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT: **USATHAMA-BAAP**

SITE ID: **SPN-91-04D**

LOCATION ACTIVITY: **START 0800 END 1130**

FIELD SAMPLING NUMBER: **SPN9104D**

SITE TYPE: **WELL**

JOB NUMBER: **6853-04**

PROGRAM: **C**

SAMPLING DATE: **12 13 91**

FILE NAME: **CGW**

WEATHER: **Sunny 75°**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING TOP OF WELL (FROM GROUND) **2.0 FT**

MEASURED HISTORICAL

WELL DEPTH: **204 FT**

WATER DEPTH: **40.70 FT**

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS): **39.04**

PROTECTIVE CASING/WELL DIFF.: **-0.34 FT**

HEIGHT OF WATER COLUMN: **163 FT**

PURGE VOLUMES:  0.65 GAL/FT (2 IN)  1.5 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)

TOTAL GAL PURGED: **775**

WELL INTEGRITY:  PROT. CASING SECURE  CONCRETE COLLAR INTACT  WELL LOCKED

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL:  PVC  SS

AMBIENT AIR:  PPM

WELL MOUTH:  PPM

### PURGE DATA

PURGE VOLUME	0945	0945	0945	1048	1048	1159
PURGE VOLUME	0.155 GAL	0.310 GAL	0.465 GAL	0.620 GAL	0.775 GAL	
TEMP, DEG C	9.4	9.4	9.0	7.3	8.7	
PH, UNITS	7.3	7.5	7.7	7.6	7.6	
SPECIFIC CONDUCTIVITY umhos/cm	467	452	450	458	445	

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

SAMPLING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

EQUIPMENT ID: ISCO # \_\_\_\_\_ GRUNDFOSS #  2"  4" # \_\_\_\_\_

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED: \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		1348	022280.C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	HNO3 TO pH<2				
NA	SS16	HNO3 TO pH<2				
CD	SS16	HNO3 TO pH<2				
CR	SS16	HNO3 TO pH<2				
HG	SB03	HNO3 TO pH<2				
PB	SD24	HNO3 TO pH<2				
NI	SS16	HNO3 TO pH<2				
BA	SS16	HNO3 TO pH<2				
HARD	USEPA 130.2	HNO3 TO pH<2			1348	022280.C
NIT	TF10	H2SO4 TO pH<2	500 ML POLY		1349	070310.C
CL	TT08	4 DEG C	500 ML POLY		1350	
SO4	TT08	4 DEG C				
ALK	USEPA 310.1	4 DEG C	500 ML POLY		1351	
TDS	USEPA 160.1	4 DEG C				
TOC	USEPA 415.1	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	HCL, 4 DEG C	(3)40 ML VIAL		1352	0212301.C
BN/A	UM16	4 DEG C	(2) 1 L AG		1353	0126101.C
NG	99	4 DEG C	1 L AG		1357	
NAM	UN06	4 DEG C	1 L AG		1358	
DNT	UN26	4 DEG C	1 L AG		1359	
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GWM			

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SB24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used volumes from development

SIGNATURE: *[Signature]*

RECEIVED BY: *Nancy E. Roka*

31

155

5 | 774

and elev = 827.8

riser elev = 830.04

GW elev = 761.84

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SPN8901C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **SPN-89-01C**

JOB NUMBER **6853-04**

SAMPLING DATE **12-10-91**

LOCATION ACTIVITY **START 0745 END 0920**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **WIND 40°**

### WATER LEVEL / WELL DATA

WELL DEPTH **121.7** FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.47** FT

PROTECTIVE CASING/WELL DIFF. **-0.27** FT

WATER DEPTH **68.20** FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) **66.00**

HEIGHT OF WATER COLUMN **53.5** FT X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

**46** GAL/VOL  
**230** TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: **CAF**

PURGE H2O CONTAINED?  YES  NO  
WELL MATERIAL  PVC  SS  
AMBIENT AIR — PPM  
WELL MOUTH — PPM

### PURGE DATA

PURGE VOLUME	<b>246</b> GAL	<b>912</b> GAL	<b>138</b> GAL	<b>104</b> GAL	<b>230</b> GAL
TEMP, DEG C	<b>8.6</b>	<b>9.1</b>	<b>9.2</b>	<b>9.3</b>	<b>9.3</b>
CONDUCTIVITY umhos/cm	<b>7.5</b>	<b>7.6</b>	<b>7.6</b>	<b>7.5</b>	<b>7.5</b>
	<b>639</b>	<b>640</b>	<b>634</b>	<b>639</b>	<b>641</b>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID  ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS# \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	H2SO4 TO pH<2	500 ML POLY			
CL	YES	4 DEG C	500 ML POLY			
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	MCL, 4 DEG C	(3)40 ML VIAL			
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

Handwritten sample IDs and lot numbers in the table:

- 1204 / / / 022280C
- 1204 / / / 022280C
- 1205 / / / 022280C
- 1206 / / / 022280C
- 1207 / / /
- 1208 / 1209 / 1210 / 022280C
- 1211 / 1212 / / 022280C
- 1213 / / /
- 1214 / / /
- 1215 / / /

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

.. see attached for volumes

SIGNATURE: Paul G. Hill

RECEIVED BY: Nancy E. Hill



grid elev. = 820.8 riser elev. = 823.67 GW elev. = 761.74

**ABB ENVIRONMENTAL SERVICES, INC.**

**FIELD DATA RECORD - GROUNDWATER** FIELD SAMPLING NUMBER SPN8702A

PROJECT USATHAMA-BAAP SITE TYPE WELL SAMPLING DATE 11-19-91

SITE ID SPN-89-02A JOB NUMBER 6853-04 FILE NAME CGW

LOCATION ACTIVITY START 1100 END 1215 PROGRAM C WEATHER overcast, 50°S

**WATER LEVEL / WELL DATA**

WELL DEPTH 73 ± FT  MEASURED  HISTORICAL TOP OF WELL  TOP OF CASING PROTECTIVE CASING/WELL DIFF. - .10 FT

WATER DEPTH 61.93 FT  .16 GAL/FT (2 IN) 31 GAL/VOL  2 INCH WELL DIAMETER  4 INCH GROUNDWATER ELEVATION (BGS) 59.58

HEIGHT OF WATER COLUMN 11 FT  .65 GAL/FT (4 IN) 155 TOTAL GAL PURGED  6 INCH

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR .02 PPM WELL MOUTH .02 PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A CONCRETE COLLAR INTACT  YES  NO  N/A WELL LOCKED  YES  NO  N/A OTHER: cap

**PURGE DATA**

PURGE VOLUME	<u>231</u> GAL	<u>42</u> GAL	<u>93</u> GAL	<u>124</u> GAL	<u>155</u> GAL
TEMP, DEG C	<u>9.7</u>	<u>9.5</u>	<u>9.6</u>	<u>9.7</u>	<u>9.6</u>
PH, UNITS	<u>7.2</u>	<u>7.3</u>	<u>7.3</u>	<u>7.3</u>	<u>7.2</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>1011</u>	<u>1002</u>	<u>1011</u>	<u>998</u>	<u>1002</u>

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  OODR  OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  PERISTALTIC PUMP ISCO # \_\_\_\_\_ DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

SAMPLING  SUBMERSIBLE PUMP GRUNDEOS# \_\_\_\_\_ WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

BAILER  2"  4" # \_\_\_\_\_  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER \_\_\_\_\_ NUMBER OF FILTERS USED 1

OTHER \_\_\_\_\_

**ANALYTICAL PARAMETERS**

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			<u>1216</u>	<u>0222601C</u>
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	S803	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			<u>1216</u>	<u>0222601C</u>
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>1217</u>	<u>0425101C</u>
CL	TT08	YES	4 DEG C	500 ML POLY		<u>1218</u>	
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>1219</u>	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>1220</u> / <u>1221</u> / <u>1222</u>	<u>022301C</u>
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		<u>1223</u> / <u>1224</u>	<u>0225101C</u>
NG	99	NO	4 DEG C	1 L AG		<u>1225</u>	
NAM	UN06	NO	4 DEG C	1 L AG		<u>1226</u>	
DNT	UV26	NO	4 DEG C	1 L AG		<u>1227</u>	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

\*used historical volumes

SIGNATURE: R. C. Smith / mm

RECEIVED BY: Nancy E. Potha

grnd elev = 820.3

riser elev = 823.53

GW elev = 761.75

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SPN 89 02B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **11-17-91**

SITE ID **SPN-89-02B**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1245 END 1445**

PROGRAM **C**

WEATHER **Overcast, 50's**

### WATER LEVEL / WELL DATA

WELL DEPTH **100.5 FT**

TOP OF WELL PROTECTIVE  
 TOP OF CASING CASING STICK-UP (FROM GROUND) **2.80 FT**

PROTECTIVE CASING/WELL DIFF. **-0.15 FT**

WATER DEPTH **61.78 FT**

MEASURED  
 HISTORICAL

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) **59.13**

HEIGHT OF WATER COLUMN **38.72 FT**

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

**35** GAL/VOL

**175** TOTAL GAL PURGED **(173)**

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: **cap**

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **0** PPM

WELL MOUTH **0** PPM

### PURGE DATA

PURGE VOLUME	@ 35 GAL	@ 70 GAL	@ 105 GAL	@ 140 GAL	@ 175 GAL
TEMP, DEG C	9.6	9.6	9.5	9.5	9.5
pH, UNITS	7.8	7.8	7.8	7.8	7.8
SPECIFIC CONDUCTIVITY umhos/cm	640	646	646	646	644

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODDR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING  
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDEFS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	1237	0227501C
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1228	0227501C
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1229	0428101C
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1230	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1231	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1232	0212301C
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1235	0123101C
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1237	
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1238	
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1239	
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:IC)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:IC)

\*purge h2o containerized for VOC's  
-used historical volumes

SIGNATURE: *[Signature]*  
RECEIVED BY: *Nancy E. [Signature]*

elev = 220.0 riser elev = 822.60 GW elev = 761.70

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PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER **SPN 89 02 C**

PROJECT **USATHAMA-BAAP**  
 SITE ID **SPN-89-02C**  
 LOCATION ACTIVITY **START 1500 END 1630**

SITE TYPE **WELL**  
 JOB NUMBER **6853-04**  
 PROGRAM **C**

SAMPLING DATE **11.19.91**  
 FILE NAME **CGW**  
 WEATHER **Sunny, 50° S**

**WATER LEVEL / WELL DATA**

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.3 FT**  
 MEASURED HISTORICAL  
 PROTECTIVE CASING/WELL DIFF. **-0.11 FT**  
 WELL DEPTH **132.75 FT**  
 WATER DEPTH **60.90 FT**  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION (BGS) **635.71**  
 HEIGHT OF WATER COLUMN **71.85 FT**  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
**52 GAL/VOL**  
**260 TOTAL GAL PURGED (258)**  
 PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0 PPM** WELL MOUTH **0 PPM**  
 WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: **lap**

**PURGE DATA**

PURGE VOLUME	a 58 GAL	a 104 GAL	a 150 GAL	a 200 GAL	a 260 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODCR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.7	9.5	9.4	9.3	9.2	
pH, UNITS	7.8	7.8	7.8	7.8	7.8	
SPECIFIC CONDUCTIVITY umhos/cm	660	658	658	656	656	

**EQUIPMENT DOCUMENTATION**

PURGING  PERISTALTIC PUMP  
 SAMPLING  SUBMERSIBLE PUMP  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDFOS# \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED **1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		1240	022280.C
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1240	022280.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1241	042210.C
CL TT08	YES	4 DEG C	500 ML POLY		1242	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1243	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH342 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1244	021230.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1247	012810.C
NG 99	NO	4 DEG C	1 L AG		1249	
NAM UN06	NO	4 DEG C	1 L AG		1250	
DNT UW26	NO	4 DEG C	1 L AG		1251	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for VOC's  
 -used historical volumes

SIGNATURE: *[Signature]*  
 RECEIVED BY: *Nancy E. Rofa*

and elev. = 815.1 riser elev = 818.09 Gw elev = 762.13

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PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER **SPN8903B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **SPN-89-03B**

JOB NUMBER **6853-04**

SAMPLING DATE **12 10 91**

LOCATION ACTIVITY **START 0930 END 1100**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **304-44 40"**

**WATER LEVEL / WELL DATA**

TOP OF WELL TOP OF CASING  PROTECTIVE CASING STICK-UP (FROM GROUND) **2.94 FT** PROTECTIVE CASING/WELL DIFF. **-.13 FT**

WELL DEPTH **96.49 FT**  MEASURED  HISTORICAL

WATER DEPTH **55.94 FT** WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION (BGS) **53.15**

HEIGHT OF WATER COLUMN **40.53 FT** X  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN)

**37.5 GAL/VOL** **180 TOTAL GAL PURGED**

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR \_\_\_\_\_ PPM WELL MOUTH \_\_\_\_\_ PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A CONCRETE COLLAR INTACT  YES  NO  N/A WELL LOCKED  YES  NO  N/A OTHER: **CAF**

**PURGE DATA**

PURGE VOLUME	@ 37.5 GAL	@ 75 GAL	@ 112.5 GAL	@ 150 GAL	@ 187.5 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOUR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.1	9.1	9.1	9.3	9.3	
PH, UNITS	7.6	7.6	7.6	7.6	7.5	
SPECIFIC CONDUCTIVITY umhos/cm	630	631	635	630	631	

**EQUIPMENT DOCUMENTATION**

PURGING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

SAMPLING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_ GRUNDFOS# \_\_\_\_\_ 2"  4"  # \_\_\_\_\_

RECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1252/	02228010
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1252/	02228010
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1253/	0703:010
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1254/	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>	1255/	
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input type="checkbox"/>	1256/ 1257/ 1258/	02123010
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>	1259/ 1260/	0128:010
NG 99	NO	4 DEG C	1 L AG	<input type="checkbox"/>	1261/	
NAM UN06	NO	4 DEG C	1 L AG	<input type="checkbox"/>	1262/	
DNT UW26	NO	4 DEG C	1 L AG	<input type="checkbox"/>	1263/	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\* purge H2O containerized for ~~USEPA~~ DNT  
- see attached for volumes

SIGNATURE: *Paul G. Smith / ABC*  
RECEIVED BY: *Nancy E. [Signature]*

ord elev. = 815.3 riser elev. = 813.25 GW elev. = 762.09

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_ OF \_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER: **SPN8903C**

PROJECT: **USATHAMA-BAAP** SITE TYPE: **WELL**

SITE ID: **SPN-89-03C** JOB NUMBER: **6853-04** SAMPLING DATE: **11-20-91**

LOCATION ACTIVITY: **START 0945 END 1130** PROGRAM: **C** FILE NAME: **CGW**

WEATHER: **Sunny, 40's-50's**

**WATER LEVEL / WELL DATA**

WELL DEPTH: **130.7 FT**  MEASURED  HISTORICAL

WATER DEPTH: **56.16 FT**

HEIGHT OF WATER COLUMN: **74.04 FT**

TOP OF WELL:  TOP OF CASING:  PROTECTIVE CASING STICK-UP (FROM GROUND): **3.15 FT**

PROTECTIVE CASING/WELL DIFF.: **-0.51 FT**

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS): **53.52**

HEIGHT OF WATER COLUMN:  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (IN)

**55** GAL/VOL **275** TOTAL GAL PURGED (**276**)

PURGE H<sub>2</sub>O CONTAINED?  YES  NO

WELL MATERIAL:  PVC  SS

AMBIENT AIR: **0.6** PPM WELL MOUTH: **0.6** PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

OTHER: **CCP**

**PURGE DATA**

PURGE VOLUME	55 GAL	110 GAL	165 GAL	220 GAL	275 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	9.7	9.9	9.9	10.1	10.1	<input type="checkbox"/> CLEAR
pH, UNITS	7.4	7.3	7.3	7.3	7.4	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	643	643	643	643	643	<input type="checkbox"/> COLORED
						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

SAMPLING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

EQUIPMENT ID: ISCO # \_\_\_\_\_ GRUNDOS# \_\_\_\_\_ 2" \_\_\_\_\_ 4" \_\_\_\_\_

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED: **1**

**ANALYTICAL PARAMETERS**

PARAMETER	METHOD	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			1264	0222801C
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			1264	0222801C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		1265	0428101C
CL	TT08	YES	4 DEG C	500 ML POLY		1266	
SO4	TT08	YES	4 DEG C	500 ML POLY		1267	
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		1268	0212301C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		1271	0128101C
NG	99	NO	4 DEG C	1 L AG		1273	
NAM	UN06	NO	4 DEG C	1 L AG		1274	
DNT	UM26	NO	4 DEG C	1 L AG		1275	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03 (TL:GFAA, K/NA:ICP)

\*purge H<sub>2</sub>O contained for VOCs

- used historical volumes

SIGNATURE: *[Signature]* RECEIVED BY: *Jammy E. Post*

and elev = 801.6

riser elev = 804.21

GW elev = 761.74

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PAGE 01

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SPN8904B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID SPN-89-04B

JOB NUMBER 6853-04

SAMPLING DATE 11 20 91

LOCATION ACTIVITY START 1130 END 1230

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 50° S

### WATER LEVEL / WELL DATA

WELL DEPTH 75.4 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.48 FT

PROTECTIVE CASING/WELL DIFF. 0.20 FT

WATER DEPTH 42.47 FT

WELL DIAMETER 4 INCH

GROUNDWATER ELEVATION (BGS) 40.25

HEIGHT OF WATER COLUMN 32.93 FT

29 GAL/VOL

145 TOTAL GAL PURGED (145)

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  
CONCRETE COLLAR INTACT  YES  NO  
WELL LOCKED  YES  NO  
OTHER: Cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0.2 PPM

### PURGE DATA

PURGE VOLUME

29 GAL	50 GAL	87 GAL	110 GAL	145 GAL
10.1	10.0	9.9	10.0	9.9
7.2	7.1	7.3	7.1	7.2
744	710	709	700	706

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODCR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEDS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	ESS lot #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1276 / / / 0222801
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1276 / / / 0222801
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1277 / / / 0426101
SO4	YES	4 DEG C		<input checked="" type="checkbox"/>	1278 / / /
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1279 / / /
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>	
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>	
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1280 / 1281 / 1282 / 0212301
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1283 / 1284 / / 0123101
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1285 / / /
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1286 / / /
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1287 / / /
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NN/ACP)  
TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NN/ACP)  
\* purge H2O contained for vocs  
- used historical volumes  
SIGNATURE: [Signature]  
RECEIVED BY: Nancy E.

pt. elev. = 200.7

riser elev. = 803.17

GW elev. = 761.89

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SPN8904C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **12 13 91**

SITE ID **SPN-89-04C**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0915 END 1030**

PROGRAM **C**

WEATHER

### WATER LEVEL / WELL DATA

WELL DEPTH **1105** FT

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.58** FT

PROTECTIVE CASING/WELL DIFF. **-0.36** FT

WATER DEPTH **41.23** FT

MEASURED  
 HISTORICAL

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGD) **39.06**

HEIGHT OF WATER COLUMN **69** FT

1.6 GAL/FT (2 IN)  
 1.65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

**56** GAL/VOL  
**28.7** TOTAL GAL PURGED

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER:

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **0** PPM

WELL MOUTH **0** PPM

### PURGE DATA

PURGE VOLUME	12:00	10:08	10:20	10:32	10:44
<b>256</b> GAL	<b>212</b> GAL	<b>169</b> GAL	<b>234</b> GAL	<b>282</b> GAL	
TEMP, DEG C	<b>8.7</b>	<b>9.1</b>	<b>7.8</b>	<b>8.6</b>	<b>9.0</b>
pH, UNITS	<b>7.9</b>	<b>7.3</b>	<b>7.6</b>	<b>7.7</b>	<b>7.5</b>
SPECIFIC CONDUCTIVITY umhos/cm	<b>578</b>	<b>602</b>	<b>584</b>	<b>534</b>	<b>605</b>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDFOS #   
2" 4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			1288	0222801C
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1288	0222801C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1289	0703101C
CL TT08	YES	4 DEG C	500 ML POLY		1290	
SO4 TT08	YES	4 DEG C	500 ML POLY		1291	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1292	0212301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1295	012801C
NG 99	NO	4 DEG C	1 L AG		1297	
NAM UN06	NO	4 DEG C	1 L AG		1298	
DNT UW26	NO	4 DEG C	1 L AG		1299	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,HG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- see attached for volumes

SIGNATURE: [Signature]  
RECEIVED BY: Nancy E. Pope

gnd elev = 204.6

rise elev = 804.25

GW elev = 762.72

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SPN8905A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 11 23 91

SITE ID SPN-89-05A

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1300 END 1415

PROGRAM C

WEATHER Snow/rain

### WATER LEVEL / WELL DATA

WELL DEPTH 54.00 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.0 FT

PROTECTIVE CASING/WELL DIFF. 2.20 FT

WATER DEPTH 41.53 FT

WELL DIAMETER 2 INCH 4 INCH 6 INCH

GROUNDWATER ELEVATION (BGS) 39.13

HEIGHT OF WATER COLUMN 13.47 FT

32 GAL/VOL

TOTAL GAL PURGED 160

160

WELL INTEGRITY: PROT. CASING SECURE CONCRETE COLLAR INTACT WELL LOCKED OTHER: cap

PURGE H2O CONTAINED? YES NO

WELL MATERIAL PVC SS

AMBIENT AIR PPM

WELL MOUTH PPM

### PURGE DATA

PURGE VOLUME	232 GAL	64 GAL	96 GAL	122 GAL	160 GAL
TEMP, DEG C	8.3	7.9	7.4	8.3	7.7
PH, UNITS	7.6	7.7	7.2	7.5	7.4
SPECIFIC CONDUCTIVITY umhos/cm	261	488	465	411	414

SAMPLE OBSERVATIONS CLEAR CLOUDY COLORED TURBID OOR OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER

EQUIPMENT ID ISCO # GRUNDEOS# 4" #

DECON FLUIDS USED POTABLE WATER LIQUINOX STEAM CLEANING

WATER LEVEL EQUIP. USED ELECTRIC COND. PROBE FLOAT ACTIVATED PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		1300	022280.C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG S803	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1300	022280.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1301	042810.C
CL TT08	YES	4 DEG C	500 ML POLY		1302	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1303	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC I .17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1304	021230.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1307	012810.C
NG 99	NO	4 DEG C	1 L AG		1307	
NAM UN06	NO	4 DEG C	1 L AG		1310	
DNT UW26	NO	4 DEG C	1 L AG		1311	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP) TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: [Signature] RECEIVED BY: [Signature]

- No HPL readings



rd elev = 801.6

riser elev = 804.02

GW elev = 762.67

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

3PN8905B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID 3PN-89-05B

JOB NUMBER 6853-04

SAMPLING DATE 11.23.91

LOCATION ACTIVITY START 1430 END 1545

PROGRAM C

FILE NAME CGW

WEATHER Snow/rain

### WATER LEVEL / WELL DATA

WELL DEPTH 98.95 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND)

27.2 FT

PROTECTIVE CASING/WELL DIFF. 0.2 FT

WATER DEPTH 41.35 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 38.83

HEIGHT OF WATER COLUMN 47.6 FT

0.16 GAL/FT (2 IN)  
 0.65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

38 GAL/VOL

190 TOTAL GAL PURGED (190)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: *cap*

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

### PURGE DATA

PURGE VOLUME	2 3/4 GAL	2 7/8 GAL	2 11/4 GAL	2 15/2 GAL	2 11/0 GAL
TEMP, DEG C	7.9	8.3	8.2	8.3	7.9
pH, UNITS	7.6	7.5	7.5	7.6	7.5
SPECIFIC CONDUCTIVITY umhos/cm	440	494	493	494	480

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS#  
2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2			1312	022280:C
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1312	022280:C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1313	042810:C
CL	YES	4 DEG C	500 ML POLY		1314	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		1315	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		1316	021230:C
BN/A	NO	4 DEG C	(2) 1 L AG		1319	022810:C
NG	NO	4 DEG C	1 L AG		1321	
NAM	NO	4 DEG C	1 L AG		1322	
DNT	NO	4 DEG C	1 L AG		1323	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: *[Signature]*

RECEIVED BY: *Nancy E. Rora*

- use H2O readings

271  
2120 = 893.6

2120 = 895.99

GW  
2120 = 780.41

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

DBM89011

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID DBM-89-011

JOB NUMBER

6853-04

SAMPLING DATE

12.10.91

LOCATION ACTIVITY START 1030 END 1200

PROGRAM

C

FILE NAME

CGW

WEATHER

30's, sunny

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.58 FT

PROTECTIVE CASING/WELL DIFF.

-1.16 FT

WELL DEPTH 125.0 FT

MEASURED  
 HISTORICAL

WATER DEPTH 115.58 FT

WELL DIAMETER  
 2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION

113.16

HEIGHT OF WATER COLUMN

9.4 FT

.16 GAL/FT (2 IN)  
.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)  
GAL/FT ( IN)

16 GAL/VOL

80 TOTAL GAL PURGED

WELL INTEGRITY:  
FROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER:

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.2 PPM

WELL MOUTH 0.4 PPM

### PURGE DATA

PURGE VOLUME	16 GAL	32 GAL	48 GAL	64 GAL	80 GAL
TEMP, DEG C	11.7	11.6	11.9	12.0	12.0
pH, UNITS	7.7	7.7	7.6	7.7	7.7
SPECIFIC CONDUCTIVITY umhos/cm	465	427	428	430	417

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
CRUNFOS#  
2" 1/4" #

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		1183 / / / 022250.C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG S803	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2			
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1183 / / / 022250.C
CL TT08	YES	4 DEG C	500 ML POLY		1184 / / / 022250.C
SO4 TT08	YES	4 DEG C			1185 / / / 022250.C
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1186 / / / 022250.C
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
MH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1187 / 1188 / 1189 / 021730.C
NG 99	NO	4 DEG C	1 L AG		1190 / 1191 / / 012310.C
NAM UN06	NO	4 DEG C	1 L AG		
DNT UV26	NO	4 DEG C	1 L AG		1192 / 1193 / / 022810.C
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM		1193 / / / *

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

- see attached for volumes  
\*recopy of originals

SIGNATURE: N. Roka / mm / PC

RECEIVED BY: Nancy E. [Signature]

W 2248

MSR elev. = 887.10

GW elev. = 772.25

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

DBN 89028A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12-12-91

SITE ID DBN-89-02A

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0815 END 0930

PROGRAM C

WEATHER 3:55 rain

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE TOP OF CASING CASING STICK-UP (FROM GROUND) 225 FT

PROTECTIVE CASING/WELL DIFF. -0.16

WELL DEPTH 122.65 FT

MEASURED HISTORICAL

WELL DIAMETER 3 INCH 4 INCH 6 INCH

GROUNDWATER ELEVATION (BGS) 112.76

WATER DEPTH 114.65 FT

1.6 GAL/FT (2 IN) 12 GAL/VOL

HEIGHT OF WATER COLUMN 7 FT

1.5 GAL/FT (6 IN) 60 TOTAL GAL PURGED

WELL INTEGRITY: PROT. CASING SECURE YES NO N/A CONCRETE COLLAR INTACT YES NO N/A WELL LOCKED YES NO N/A OTHER: cap

PURGE H2O CONTAINED? YES NO WELL MATERIAL PVC SS AMBIENT AIR PPM WELL MOUTH PPM

### PURGE DATA

	45	52	56	00	04
PURGE VOLUME	@ 12 GAL	@ 24 GAL	@ 36 GAL	@ 48 GAL	@ 60 GAL
TEMP, DEG C	10.4	11.0	10.9	11.0	11.0
PH, UNITS	7.8	7.7	7.7	7.7	7.7
SPECIFIC CONDUCTIVITY umhos/cm	413	414	411	415	412

SAMPLE OBSERVATIONS CLEAR CLOUDY COLORED TURBID ODOR OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER EQUIPMENT ID ISCO # GROUNDOS# 2" 4" # DECON FLUIDS USED POTABLE WATER LIQUINOX STEAM CLEANING WATER LEVEL EQUIP. USED ELECTRIC COND. PROBE FLOAT ACTIVATED PRESSURE TRANSDUCER NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		790	022801C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	HNO3 TO pH<2				
NA	SS16	HNO3 TO pH<2				
CO	SS16	HNO3 TO pH<2				
CR	SS16	HNO3 TO pH<2				
HG	SB03	HNO3 TO pH<2				
PB	SD24	HNO3 TO pH<2				
NI	SS16	HNO3 TO pH<2				
BA	SS16	HNO3 TO pH<2				
HARD	USEPA 130.2	HNO3 TO pH<2			790	022801C
NIT	TF10	H2SO4 TO pH<2	500 ML POLY		791	070310C
CL	TT08	4 DEG C	500 ML POLY		792	
SO4	TT08	4 DEG C	500 ML POLY		793	
ALK	USEPA 310.1	4 DEG C	500 ML POLY		794	
TDS	USEPA 160.1	4 DEG C				
TOC	USEPA 415.1					
MN3M2	USEPA 350.2	H2SO4 TO pH<2	(3) 40 ML VIAL			
VOC	UM17	HCL, 4 DEG C	(3) 40 ML VIAL		794	022801C
BN/A	UM16	4 DEG C	(2) 1 L AG		797	022810C
NG	99	4 DEG C	1 L AG		798	
NAM	UN06	4 DEG C	1 L AG		799	022810C
DNT	UM26	4 DEG C	1 L AG		800	
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:TOP) TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:TOP) - see attached for volumes - could not use flow or bottom sampler due to precipitation SIGNATURE: Nancy E Roper RECEIVED BY: Nancy E Roper

grid elev = 824.8

riser elev = 886.90

GW elev = 777.16

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER DBN 89 02 B

ECT USATHAMA-BAAP

SITE TYPE WELL

ID DBN-89-02B

JOB NUMBER 6853-04

SAMPLING DATE 12-12-91

LOCATION ACTIVITY START 0800 END 1000

PROGRAM C

FILE NAME CGW

WEATHER 30's RAINY!

### WATER LEVEL / WELL DATA

TOP OF WELL MEASURED  TOP OF CASING HISTORICAL

WELL DEPTH 155' OPTICAL PROTECTIVE CASING STICK-UP (FROM GROUND) 227 FT

WATER DEPTH 109.74 FT PROTECTIVE CASING/WELL DIFF. -0.17 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION (BGS) 107.64

HEIGHT OF WATER COLUMN 45 FT

16 GAL/FT (2 IN)  41 GAL/VOL

65 GAL/FT (4 IN) = 205 TOTAL GAL PURGED

1.5 GAL/FT (6 IN)

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR - PPM WELL MOUTH - PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

OTHER: cap

### PURGE DATA

	41	03	17	31	45	SAMPLE OBSERVATIONS
PURGE VOLUME	41 GAL	82 GAL	123 GAL	169 GAL	205 GAL	<input checked="" type="checkbox"/> CLEAR
TEMP, DEG C	11.2	11.6	11.7	12.0	12.0	<input type="checkbox"/> CLOUDY
pH, UNITS	7.9	7.9	7.9	7.8	7.8	<input type="checkbox"/> COLORED
SPECIFIC CONDUCTIVITY umhos/cm	340	305	342	343	343	<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODCR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

SAMPLING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

EQUIPMENT ID ISCO # \_\_\_\_\_ GRUNDEFS# \_\_\_\_\_ 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY		801	0222801C
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			801	0222801C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		802	0222801C
CL	TT08	YES	4 DEG C	500 ML POLY		803	
CO3	TT08	YES	4 DEG C				
CK	USEPA 310.1	NO	4 DEG C	500 ML POLY		804	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		805	0222801C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		806	0222801C
NG	99	NO	4 DEG C	1 L AG		807	0222801C
NAM	UN06	NO	4 DEG C	1 L AG			
DNT	UW26	NO	4 DEG C	1 L AG		810	0222801C
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM		811	

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA: MCP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA: MCP)

- see attached for volumes

- could not use H2O2 or bottom sampler due to precipitation

SIGNATURE: [Signature]

RECEIVED BY: Nancy E. [Signature]

gtw elev. = 296.4

riser elev. = 298.85

GW elev. = 777.26

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

DBM8903

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12-10-91

SITE ID DBM-89-03

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0900 END 1015

PROGRAM C

WEATHER Sunny, 30's windy

### WATER LEVEL / WELL DATA

WELL DEPTH 132.11 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.39 FT

PROTECTIVE CASING/WELL DIFF. -.15 FT

WATER DEPTH 121.58 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 119.34

HEIGHT OF WATER COLUMN 10.53 FT x .16 GAL/FT (2 IN)  
.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)

18 GAL/VOL  
90 TOTAL GAL PURGED

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.6 PPM

WELL MOUTH 0.6 PPM

### PURGE DATA

PURGE VOLUME	18 GAL	36 GAL	54 GAL	72 GAL	90 GAL
TEMP, DEG C	11.2	11.4	11.4	11.3	10.8
pH, UNITS	7.6	7.5	7.5	7.6	7.6
SPECIFIC CONDUCTIVITY umhos/cm	459	444	462	430	422

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
BRUNNIDPS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

CON FLUIDS USED  
 POTABLE WATER  
 LIQUIDIX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		1194 / / / ESS lot #1 022801C
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
PC S803	YES	HNO3 TO pH<2			
FB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2			
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	1194	022801C
CL TT08	YES	4 DEG C	500 ML POLY	1195	0703101C
SC4 TT08	YES	4 DEG C		1196	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	1197	
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	1198	1199 1200 0212301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	1201	1202 0125101C
NG 99	NO	4 DEG C	1 L AG		
NAM UN06	NO	4 DEG C	1 L AG	1203	0125101C
DNT UN26	NO	4 DEG C	1 L AG	1204	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,PC,PE,AD,NA,TL,V,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)

- see attached for volumes  
+ copy of originals

SIGNATURE: N. Roka / mm / PC  
RECEIVED BY: Nancy E. Roka

grd. elev = 917.7 riser elev = 930.14 GW elev = 776.73

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE      OF     

**FIELD DATA RECORD - GROUNDWATER**

PROJECT USATHAMA-BAAP  
 SITE ID DBN-89-04B  
 LOCATION ACTIVITY START 1053 END 1215

FIELD SAMPLING NUMBER DBN8904B  
 SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C

SAMPLING DATE 12.7.91  
 FILE NAME CGW  
 WEATHER 30s sunny

**WATER LEVEL / WELL DATA**

WELL DEPTH 129.2 FT  MEASURED  HISTORICAL  
 WATER DEPTH 143.3 FT  
 HEIGHT OF WATER COLUMN 16 FT  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( \_ IN)  
 TOP OF WELL  TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.47 FT  
 PROTECTIVE CASING/WELL DIFF. -0.18 FT  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION (BGS) 141.07  
 TOTAL GAL PURGED 200  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: cap

**PURGE DATA**

PURGE VOLUME	@ <u>40</u> GAL	@ <u>60</u> GAL	@ <u>80</u> GAL	@ <u>100</u> GAL	@ <u>200</u> GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11.3</u>	<u>11.1</u>	<u>11.2</u>	<u>11.2</u>	<u>11.0</u>	
pH, UNITS	<u>7.7</u>	<u>7.6</u>	<u>7.7</u>	<u>7.6</u>	<u>7.6</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>517</u>	<u>501</u>	<u>495</u>	<u>497</u>	<u>491</u>	

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
 EQUIPMENT ID ISCO #       
 SUBMERSIBLE PUMP  GRUNDFOS #       
 BAILER  2"  4" #       
 PVC/SILICOM TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		867 / / / 0222801C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2			867 / / / 0222801C
NI TFI0	YES	H2SO4 TO pH<2	500 ML POLY		868 / / / 0222801C
CL TT08	YES	4 DEG C	500 ML POLY		869 / / /
SO4 TT08	YES	4 DEG C			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		870 / / /
TDS USEPA 160.1	NO	4 DEG C			
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		871 / 872 / 873 / 0212301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		874 / 875 / / 0222801C
NG 99	NO	4 DEG C	1 L AG		
NAM UN06	NO	4 DEG C	1 L AG		
DNT UW26	NO	4 DEG C	1 L AG		876 / / / 0222801C
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		877 / / /

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA/CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA/CP)  
 see attached for calculations  
 - No HNU readings  
 SIGNATURE: Nancy E. [Signature]  
 RECEIVED BY: Nancy E. [Signature]

grid elev = 897.7

riser elev = 900.43

GW elev = 733.94

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

DBM8905

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12 28 91

SITE ID DBM-89-05

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1100 END 1700

PROGRAM C

WEATHER FOGGY 50"

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.44 FT

PROTECTIVE CASING/WELL DIFF. -.18 FT

WELL DEPTH 135.0 FT

MEASURED  
 HISTORICAL

WATER DEPTH 116.49 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (EGS) 114.23

HEIGHT OF WATER COLUMN 18.51 FT  
X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

31 GAL/VOL

155 TOTAL GAL PURGED

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR --- PPM

WELL MOUTH --- PPM

### PURGE DATA

PURGE VOLUME	@ 31 GAL	@ 62 GAL	@ 93 GAL	@ 124 GAL	@ 155 GAL
TEMP, DEG C	11.1	11.1	11.1	11.1	11.2
PH, UNITS	7.8	7.7	7.7	7.7	7.7
SPECIFIC CONDUCTIVITY umhos/cm	528	528	527	527	529

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICOM TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	823	022501C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	823	022501C
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	824	0703101C
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	825	
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	826	
ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS	NO	4 DEG C		<input type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	827	0212301C
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	830	0129101C
NG	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input type="checkbox"/>	832	0129101C
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>	833	

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,HG,MN,HG,NI,X,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\* purge H2O containerized for VOC's  
- see attached for volumes  
BOLT FOR BOTTOM SCOURER TORE OFF & FELL DOWN WELL  
(REMOVED BY MASTRO)

SIGNATURE: Paul C. Sattler  
RECEIVED BY: Nancy E. Roka

2nd = 9170      1st = 91872      GW = 77736  
 2nd = 9170      1st = 91872      GW = 77736

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **DEME201**

PROJECT **USATHAMA-BAAP**  
 SITE ID **DBM-82-011**  
 LOCATION ACTIVITY **START 1215 END 1430**

SITE TYPE **WELL**  
 JOB NUMBER **6853-04**  
 PROGRAM **C**

SAMPLING DATE **12-10-91**  
 FILE NAME **CGW**  
 WEATHER **clear 40°S**

### WATER LEVEL / WELL DATA

WELL DEPTH **173** FT  MEASURED  HISTORICAL  
 WATER DEPTH **141.30** FT  
 HEIGHT OF WATER COLUMN **31.64** FT  
 .16 GAL/FT (2 IN) = **47** GAL/VOL  
 .65 GAL/FT (4 IN) = **235** TOTAL GAL PURGED (**235**)  
 1.5 GAL/FT (6 IN) = \_\_\_\_\_ GAL/FT (\_\_\_ IN)  
 PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.2** PPM      WELL MOUTH **0.4** PPM  
 TOP OF WELL  TOP OF CASING \_\_\_\_\_  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **1.77** FT  
 PROTECTIVE CASING/WELL DIFF. **0.00** FT  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION (BGS) **139.59**  
 WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: **cap**

### PURGE DATA

	55	51	67	23	31	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
PURGE VOLUME	<b>47</b> GAL	<b>94</b> GAL	<b>141</b> GAL	<b>182</b> GAL	<b>235</b> GAL	
TEMP, DEG C	<b>12.3</b>	<b>12.4</b>	<b>12.4</b>	<b>12.5</b>	<b>12.3</b>	
PH, UNITS	<b>7.2</b>	<b>7.3</b>	<b>7.3</b>	<b>7.3</b>	<b>7.7</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>555</b>	<b>533</b>	<b>532</b>	<b>529</b>	<b>510</b>	

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
 BAILER  GRINDERS# \_\_\_\_\_  
 PVC/SILICON TUBING  2"  4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER  \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY		757 / / /	022301C
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2			/ / /	
CA	SS16	YES	HNO3 TO pH<2			/ / /	
NA	SS16	YES	HNO3 TO pH<2			/ / /	
CD	SS16	YES	HNO3 TO pH<2			/ / /	
CR	SS16	YES	HNO3 TO pH<2			/ / /	
HG	S803	YES	HNO3 TO pH<2			/ / /	
PB	SD24	YES	HNO3 TO pH<2			/ / /	
NI	SS16	YES	HNO3 TO pH<2			/ / /	
BA	SS16	YES	HNO3 TO pH<2			/ / /	
HARD	USEPA 130.2	YES	HNO3 TO pH<2			757 / / /	022301C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		752 / / /	022301C
CL	TT08	YES	4 DEG C	500 ML POLY		759 / / /	
SO4	TT08	YES	4 DEG C	500 ML POLY		760 / / /	
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		/ / /	
TDS	USEPA 160.1	NO	4 DEG C	500 ML POLY		/ / /	
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		/ / /	
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		/ / /	
VOC	UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		761 / 762 / 763	022301C
BN/A	UM16	NO	(2) 1 L AG			764 / 765	022301C
NG	99	NO	4 DEG C	1 L AG		/ / /	
NAM	UN06	NO	4 DEG C	1 L AG		766 / / /	022301C
DNT	UW26	NO	4 DEG C	1 L AG		767 / / /	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		/ / /	

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA/ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA/ICP)

-used historical volumes

SIGNATURE: \_\_\_\_\_  
 RECEIVED BY: **Stacey E.**



Q11  
Elev. = 918.2

riser  
Elev. = 920.16

GW  
Elev. = 781.77

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **DBM3202**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **12.9.91**

SITE ID **DBM-82-02**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0800 END 0930**

PROGRAM **C**

WEATHER **28° F CLOUDY  
MPLY SUNNY**

### WATER LEVEL / WELL DATA

WELL DEPTH **142.75 FT**

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.09 FT**

PROTECTIVE CASING/WELL DIFF. **FLUSH FT**

WATER DEPTH **138.39 FT**

MEASURED  
 HISTORICAL

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) **138.30**

HEIGHT OF WATER COLUMN **3.5 FT**

**46** GAL/VOL  
**230** TOTAL GAL PURGED (**230**)

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
OTHER: **cap**

PURGE H2O CONTAINED?  YES  NO  
WELL MATERIAL  PVC  SS  
AMBIENT AIR  PPM  
WELL MOUTH  PPM

### PURGE DATA

PURGE VOLUME	2 46 GAL	2 92 GAL	2 138 GAL	2 184 GAL	2 230 GAL
TEMP, DEG C	12.3	11.9	11.9	11.7	11.7
PH, UNITS	7.1	7.1	7.0	7.1	7.1
SPECIFIC CONDUCTIVITY umhos/cm	1090	1078	1079	1075	1072

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING   
PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	768 /	0222801C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	768	0222801C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	769	0703101C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	770	
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	771	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	772 / 773 / 774	0212301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	775 / 776	012861C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	777	012861C
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	778	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*contained/purged H2O for DNT  
-used historical volumes

SIGNATURE: Paul C. Sullivan  
RECEIVED BY: Nancy E. Rosta

ord. elev. = 905.5

riser elev. = 907.80

GW. elev. = 777.38

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

DBN 82 01 B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID DBN-82-01B

JOB NUMBER 6853-04

SAMPLING DATE 12-7-91

LOCATION ACTIVITY START 1245 END 1345

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 50's

### WATER LEVEL / WELL DATA

WELL DEPTH 156.80 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 237 FT

PROTECTIVE CASING/WELL DIFF. 0.06"

WATER DEPTH 130.42 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 128.09

HEIGHT OF WATER COLUMN 26.38 FT  
x  1.6 GAL/FT (2 IN)  
 1.65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_\_\_ IN)

29 GAL/VOL

145 TOTAL GAL PURGED (145)

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 1 PPM

WELL MOUTH 1 PPM

### PURGE DATA

PURGE VOLUME	2 <sup>00</sup> @ 29 GAL	5 <sup>00</sup> @ 50 GAL	8 <sup>00</sup> @ 87 GAL	11 <sup>00</sup> @ 116 GAL	14 <sup>00</sup> @ 145 GAL
TEMP, DEG C	10.9	11.4	11.5	11.4	11.0
PH, UNITS	8.1	7.7	7.4	7.7	7.6
SPECIFIC CONDUCTIVITY umhos/cm	426	430	433	430	434

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOCR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID

ISCO #  
GROUNDOS#  
12" 4" #

DECON FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		834	0222801C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	H2SO4 TO pH<2	500 ML POLY		824	0222801C
CL	YES	4 DEG C	500 ML POLY		835	0703101C
SO4	YES	4 DEG C			836	
ALK	NO	4 DEG C	500 ML POLY		837	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A	NO	4 DEG C	(2) 1 L AG		838 841	0222801C
NG	NO	4 DEG C	1 L AG		842	0222801C
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG		843	0222801C
TPH	NO	H2SO4 TO pH<2	1 L GWM		844	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA/ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA/ICP)

-used historical volumes

SIGNATURE: *[Signature]*  
RECEIVED BY: Nancy E. [Signature]

orig Elev. = 905.0

Riser Elev. = 907.36

GW Elev. = 777.14

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

DBN8201C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12 9 91

SITE ID DBN-82-01C

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0950 END 1045

PROGRAM C

WEATHER cloudy 30°

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.35 FT

PROTECTIVE CASING/WELL DIFF.

-0.01 FT

WELL DEPTH 169.3 FT

MEASURED  
 HISTORICAL

WATER DEPTH 130.22 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

127.88

HEIGHT OF WATER COLUMN 39.08 FT  
X .16 GAL/FT (2 IN)  
X .65 GAL/FT (4 IN)=  
X 1.5 GAL/FT (6 IN)  
X GAL/FT ( IN)

43 GAL/VOL  
215 TOTAL GAL PURGED (215)

WELL INTEGRITY: YES NO NA  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO  
WELL MATERIAL  PVC  SS  
AMBIENT AIR — PPM  
WELL MOUTH — PPM

### PURGE DATA

PURGE VOLUME	@ 43 GAL	@ 86 GAL	@ 129 GAL	@ 172 GAL	@ 215 GAL
TEMP, DEG C	11.9	11.7	12.0	12.2	12.0
PH, UNITS	7.6	7.8	7.3	7.3	7.8
SPECIFIC CONDUCTIVITY umhos/cm	349	318	315	318	316

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID ISCO #  
GRUNDEOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		845	022350.C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			845	022350.C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		846	070310.C
CL	YES	4 DEG C	500 ML POLY		847	
SO4	YES	4 DEG C	500 ML POLY		848	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		849	021230.C
BN/A	NO	4 DEG C	(2) 1 L AG		852	012310.C
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		854	017810.C
DNT	NO	4 DEG C	1 L AG		855	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MC,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\*containerized purge H2O for DNT  
- used historical volumes

SIGNATURE: RLCS/ML  
RECEIVED BY: Nancy E. Rotza

3.0 = 917.5      1.021 = 919.39      Gu = 780.31  
 2.20 = 917.5      1.021 = 919.39      2.20 = 780.31

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE 1

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

DBN2904A

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID DBN-189-04A

JOB NUMBER

6853-04

SAMPLING DATE

12.7.91

LOCATION ACTIVITY START 1050 END 1115

PROGRAM

C

FILE NAME

CGW

WEATHER

30's sunny

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.50 FT

PROTECTIVE CASING/WELL DIFF.

0.22 FT

WELL DEPTH 154.65 FT

MEASURED  
 HISTORICAL

WATER DEPTH 131.58 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

137.30

HEIGHT OF WATER COLUMN 15 FT

25 GAL/VOL

125 TOTAL GAL PURGED

WELL INTEGRITY:

PROT. CASING SECURE   
 CONCRETE COLLAR INTACT   
 WELL LOCKED   
 OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR - PPM

WELL MOUTH - PPM

**PURGE DATA**

	50	07	14	25	34
PURGE VOLUME	@ 25 GAL	@ 50 GAL	@ 75 GAL	@ 100 GAL	@ 125 GAL
TEMP, DEG C	11.4	11.2	11.0	10.8	10.9
pH, UNITS	7.9	7.4	7.4	7.4	7.3
SPECIFIC CONDUCTIVITY umhos/cm	584	581	571	575	572

**SAMPLE OBSERVATIONS**

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
 PERISTALTIC PUMP   
 SUBMERSIBLE PUMP   
 BAILER   
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDFOS# \_\_\_\_\_  
 2" 4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 QUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

ANALYTICAL PARAMETERS	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY		856 / / /
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2			856 / / /
CA	SS16	YES	HNO3 TO pH<2			856 / / /
NA	SS16	YES	HNO3 TO pH<2			856 / / /
CD	SS16	YES	HNO3 TO pH<2			856 / / /
CR	SS16	YES	HNO3 TO pH<2			856 / / /
HG	SB03	YES	HNO3 TO pH<2			856 / / /
PB	SD24	YES	HNO3 TO pH<2			856 / / /
NI	SS16	YES	HNO3 TO pH<2			856 / / /
BA	SS16	YES	HNO3 TO pH<2			856 / / /
HARD	USEPA 130.2	YES	HNO3 TO pH<2			856 / / /
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		857 / / /
CL	TT08	YES	4 DEG C	500 ML POLY		858 / / /
SO4	TT08	YES	4 DEG C	500 ML POLY		859 / / /
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		859 / / /
TDS	USEPA 160.1	NO	4 DEG C			859 / / /
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		860 / / /
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		860 / / /
VOC	UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		863 / / /
BN/A	UM16	NO	(2) 1 L AG			863 / / /
NG	99	NO	4 DEG C	1 L AG		863 / / /
NAM	UN06	NO	4 DEG C	1 L AG		863 / / /
DNT	UW26	NO	4 DEG C	1 L AG		863 / / /
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		863 / / /

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL: GFAA, K/NA: ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL: GFAA, K/NA: ICP)

- see attached for calculations
- No HAD readings

SIGNATURE: *[Signature]*

RECEIVED BY: *[Signature]*

grl. elev. = 875.5 nser elev. = 897.65 GW elev. = 777.10

**ABB ENVIRONMENTAL SERVICES, INC.**

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER **ELN9107A**

PROJECT **USATHAMA-BAAP**  
 SITE ID **ELN-91-07A**  
 LOCATION ACTIVITY **START 0830 END 0930**

SITE TYPE **WELL**  
 JOB NUMBER **6853-04**  
 PROGRAM **C**  
 SAMPLING DATE **12 8 91**  
 FILE NAME **CGW**  
 WEATHER **3:00 to 4:00**

**WATER LEVEL / WELL DATA**

TOP OF WELL MEASURED  
 TOP OF CASING HISTORICAL  
 WELL DEPTH **128 FT**  
 WATER DEPTH **120.5 FT**  
 HEIGHT OF WATER COLUMN **7 FT**  
 PROTECTIVE CASING/WELL DIFF. **-10 FT**  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **1.58 FT**  
 WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH  
 GROUNDWATER ELEVATION (BGS) **119.07**  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)  
**27** GAL/VOL  
**135** TOTAL GAL PURGED  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 OTHER: **cep**  
 PURGE H2O CONTAINED? YES  NO   
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **6** PPM  
 WELL MOUTH **0.6** PPM

**PURGE DATA**

	46	55	04	13	22	SAMPLE OBSERVATIONS
PURGE VOLUME	<b>27</b> GAL	<b>54</b> GAL	<b>21</b> GAL	<b>102</b> GAL	<b>135</b> GAL	<input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input checked="" type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>10.5</b>	<b>10.6</b>	<b>10.6</b>	<b>10.7</b>	<b>10.7</b>	
PH, UNITS	<b>7.0</b>	<b>7.5</b>	<b>7.6</b>	<b>7.5</b>	<b>7.5</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>604</b>	<b>525</b>	<b>523</b>	<b>523</b>	<b>523</b>	

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
 EQUIPMENT ID  
 PERISTALTIC PUMP ISCO #  
 SUBMERSIBLE PUMP GRUNDFOS#  
 BAILER 2" 4"  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER  
 DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED **1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			1150	0222801C
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG S803	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1150	0222801C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1151	0703101C
CL TT08	YES	4 DEG C	500 ML POLY		1152	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1153	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1154	1155
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1157	1158
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		1159	
DNT UW26	NO	4 DEG C	1 L AG		1160	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

- used volumes from development  
 - could not get well bottom elev.

SIGNATURE: *[Signature]*  
 RECEIVED BY: *Nancy E. Potea*

grd. elev. = 893.9      elev. = 895.33      Gw elev. = 777.13

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 01 OF 01

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **ELN9107B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **ELN-91-07B**

JOB NUMBER **6853-04**

SAMPLING DATE **12-8-91**

LOCATION ACTIVITY **START 0800 END 1000**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **30's mostly**

### WATER LEVEL / WELL DATA

TOP OF WELL     PROTECTIVE CASING STICK-UP (FROM GROUND) **1.58** FT  
 TOP OF CASING     PROTECTIVE CASING/WELL DIFF. **-0.09** FT

WELL DEPTH **147** FT  MEASURED    WELL DIAMETER  2 INCH  
 HISTORICAL     4 INCH    GROUNDWATER ELEVATION (BGS) **117.21**  
 6 INCH

WATER DEPTH **187.0** FT  
 HEIGHT OF WATER COLUMN **28** FT

PURGE VOLUMES: **30** GAL/VOL    **100** TOTAL GAL PURGED

PURGE H2O CONTAINED?  YES  NO    WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.2** PPM    WELL MOUTH **3** PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: **cap**

### PURGE DATA

	59	72	23	35	47	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODCR <input type="checkbox"/> OTHER (SEE NOTES)
PURGE VOLUME	<b>30</b> GAL	<b>72</b> GAL	<b>100</b> GAL	<b>144</b> GAL	<b>180</b> GAL	
TEMP, DEG C	<b>10.7</b>	<b>10.8</b>	<b>10.8</b>	<b>10.5</b>	<b>11.3</b>	
pH, UNITS	<b>7.5</b>	<b>7.5</b>	<b>7.5</b>	<b>7.5</b>	<b>7.4</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>505</b>	<b>501</b>	<b>508</b>	<b>499</b>	<b>500</b>	

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP    EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP    ISCO # \_\_\_\_\_  
 BAILER    GRUNDFOS# \_\_\_\_\_  
 PVC/SILICON TUBING     2"  4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

RECON FLUIDS USED:  POTABLE WATER    WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 LIQUINOX     FLOAT ACTIVATED  
 STEAM CLEANING     PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1161
NA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CD	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HG	SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
PB	SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NI	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
BA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HARD	USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1161
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1162
CL	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1163
SO4	TT08	YES	4 DEG C		<input checked="" type="checkbox"/>	
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1164
TDS	USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>	
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>	
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	
VOC	UM17	NO	NHCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1165
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1166
NG	99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1167
NAM	UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
DNT	UN26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1170
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	1171

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used volumes from development  
 -due to weather conditions (well seals wet) could not get bottom of well view

SIGNATURE: *[Signature]*  
 RECEIVED BY: *[Signature]*

922 elev = 920.8 ~~920.8~~ elev. = 923.04 GW elev. = 777.39

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP

SITE ID: ELM-911-10

LOCATION ACTIVITY: START 1315 END 1415

FIELD SAMPLING NUMBER: ELM9110

SITE TYPE: WELL

JOB NUMBER: 6853-04

PROGRAM: C

SAMPLING DATE: 12.8.71

FILE NAME: CGW

WEATHER: foggy, 40°S

### WATER LEVEL / WELL DATA

WELL DEPTH: 157 FT  MEASURED  HISTORICAL

WATER DEPTH: 105.65 FT

HEIGHT OF WATER COLUMN: 11.4 FT

PURGE H<sub>2</sub>O CONTAINED?  YES  NO

NEAL MATERIAL  PVC  SS

AMBIENT AIR: 0.2 PPM

WELL MOUTH: 0.2 PPM

TOP OF WELL:  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 1.45 FT

PROTECTIVE CASING/WELL DIFF.: 0.11 FT

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (EGS): 144.31

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

OTHER: cap

### PURGE DATA

PURGE VOLUME	29 GAL	50 GAL	57 GAL	46 GAL	145 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	11.5	11.6	11.4	11.5	11.3	<input type="checkbox"/> CLEAR
pH, UNITS	7.2	7.2	7.2	7.1	7.1	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	1085	1082	1090	1087	1079	<input type="checkbox"/> COLORED
						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID: ISCO #

SUBMERSIBLE PUMP  POTABLE WATER

BAILER  LIQUINOX

PVC/SILICON TUBING  STEAM CLEANING

IN-LINE/DISPOSABLE FILTER

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			1172	0222501C
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			1172	0222501C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		1173	0702101C
CL	TT08	YES	4 DEG C	500 ML POLY		1174	
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		1175	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		1176	0212301C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		1179	0.28101C
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG		1181	0.28101C
DNT	UW26	NO	4 DEG C	1 L AG		1182	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used volumes from well development

SIGNATURE: [Signature]  
 RECEIVED BY: Wendy E. Rofa

grip elev = 920.5

riser elev = 922.73

GW elev = 778.70

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **ELM89011**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **12.4.91**

SITE ID **ELM-89-01**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1230 END 1400**

PROGRAM **C**

WEATHER **Sunny 15°F**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.13** FT

PROTECTIVE CASING/WELL DIFF. **- 1.5** FT

WELL DEPTH **166.1** FT  MEASURED  HISTORICAL

WATER DEPTH **141.05** FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) **142.05**

HEIGHT OF WATER COLUMN **22** FT

0.16 GAL/FT (2 IN)  
 0.65 GAL/FT (4 IN) = **37** GAL/VOL  
 1.5 GAL/FT (6 IN) = **18.5** TOTAL GAL PURGED **(280)**  
 GAL/FT ( IN)

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR - PPM

WELL MOUTH - PPM

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 OTHER: **Lat**

### PURGE DATA

PURGE VOLUME	a <b>37</b> GAL	a <b>74</b> GAL	a <b>111</b> GAL	a <b>148</b> GAL	a <b>185</b> GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>10.3</b>	<b>9.7</b>	<b>8.5</b>	<b>9.2</b>	<b>7.9</b>	
PH, UNITS	<b>7.4</b>	<b>7.3</b>	<b>7.3</b>	<b>7.4</b>	<b>7.5</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>1033</b>	<b>1033</b>	<b>1001</b>	<b>1033</b>	<b>1028</b>	

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  SERVOFOS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DEGON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	Esc lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			<b>829</b>	<b>022381 C</b>
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			<b>829</b>	<b>022381 C</b>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<b>840</b>	<b>022381 C</b>
CL TT08	YES	4 DEG C	500 ML POLY		<b>841</b>	
SO4 TT08	YES	4 DEG C			<b>842</b>	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	NCL, 4 DEG C	(3)40 ML VIAL		<b>843</b>	<b>022381 C</b>
BN/A UM16	NO	4 DEG C	(2) 1 L AG		<b>846</b>	<b>022381 C</b>
NG 99	NO	4 DEG C	1 L AG			
NAM 99	NO	4 DEG C	1 L AG			
DNT UM26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

ES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA: 100)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA: 100)

\* see attached for volume calculations

APV or functioning correctly

SIGNATURE: *[Signature]*

RECEIVED BY: *Nancy E. Korte*



ord. elev = 919.4

riser elev = 921.10

GW elev = 773.94

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN8902A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

12.12.91

SITE ID ELN-89-02A

JOB NUMBER 6853-04

SAMPLING DATE 12.6.91

LOCATION ACTIVITY START END 0900

PROGRAM C

FILE NAME CGW

WEATHER

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.10 FT

PROTECTIVE CASING/WELL DIFF. - 70 FT

WELL DEPTH 147.20 FT

MEASURED  
 HISTORICAL

WATER DEPTH 147.16 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (EGS) 145.52

HEIGHT OF WATER COLUMN 1 FT  
 1.6 GAL/FT (2 IN)  
 1.5 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

GAL/VOL  
TOTAL GAL PURGED

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: 119

### PURGE DATA

PURGE VOLUME	0.75 GAL	0 GAL	0 GAL	0 GAL	0 GAL
TEMP, DEG C					
pH, UNITS	7.50				
SPECIFIC CONDUCTIVITY umhos/cm	4.97				

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2			1051	
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	HNO3 TO pH<2			1051	
CL	YES	H2SO4 TO pH<2	500 ML POLY		1052	
SO4	YES	4 DEG C	500 ML POLY		1053	
ALK	NO	4 DEG C	500 ML POLY		1054	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		1055	1056
BN/A	NO	4 DEG C	(2) 1 L AG		1058	1059
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- see calculations for volumes
- purge dry @ 1.5 gal. on 12/16/91 - white solids (grout)
- Do not sample per J Bus

SIGNATURE: N. Ruka  
RECEIVED BY: Nancy E. Roka

grd elev. = 918.0 riser elev. = 920.17 GW elev. = 776.59

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER **ELN8902B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **12-6-91**

SITE ID **ELN-89-02B**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1400 END 1530**

PROGRAM **C**

WEATHER **partly sunny, 20**

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **3.5 FT**  
 PROTECTIVE CASING/WELL DIFF. **-1.32 FT**  
 WELL DEPTH **12.65 FT**  
 MEASURED  
 HISTORICAL  
 WATER DEPTH **13.60 FT**  
 WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH  
 GROUNDWATER ELEVATION (BGS) **141.87**  
 HEIGHT OF WATER COLUMN **34 FT**  
 16 GAL/FT (2 IN)  
 65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)  
**300** GAL/VOL  
**180** TOTAL GAL PURGED  
 PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0** PPM  
 WELL MOUTH **1** PPM  
 WELL INTEGRITY:  
 PROT. CASING SECURE   
 CONCRETE COLLAR INTACT   
 WELL LOCKED   
 OTHER: **cup**

**PURGE DATA**

PURGE VOLUME	2.0 GAL	2.2 GAL	10.2 GAL	4.4 GAL	18.0 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	9.9	9.4	10.0	11.2	9.3	<input checked="" type="checkbox"/> CLEAR
PH, UNITS	7.4	7.0	7.0	7.5	7.2	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	149	450	400	465	400	<input type="checkbox"/> COLORED
						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
 BAILER  GROUNDOS# \_\_\_\_\_  
 PVC/SILICON TUBING  2"  4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 RECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED **1**

**ANALYTICAL PARAMETERS**

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1060	022801C
CA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1060	022801C
IT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1061	042801C
	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1062	
	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1063	
	USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>	1064	
	USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input type="checkbox"/>		
VR3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC	UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input type="checkbox"/>	1064	022801C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>	1067	022801C
AS	99	NO	4 DEG C	1 L AG	<input type="checkbox"/>	1068	
AM	UN06	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
DNT	UM26	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:TCP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:TCP)

- see calculations for volumes

SIGNATURE: \_\_\_\_\_  
 RECEIVED BY: **Nancy E. Poma**

917. elev = 910.0

riser elev = 916.28

GW elev = 777.28

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELM8703

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12-8-91

SITE ID ELM-87-03

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1145 END 1245

PROGRAM C

WEATHER foggy, 40's

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 257 FT

PROTECTIVE CASING/WELL DIFF. -0.9 FT

WELL DEPTH 152 FT

MEASURED HISTORICAL

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) 136.62

WATER DEPTH 144.0 FT  
HEIGHT OF WATER COLUMN 8.0 FT  
1.16 GAL/FT (2 IN)  
1.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)

22 GAL/VOL  
110 TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: cap

PURGE H2O CONTAINED?  YES  NO  
WELL MATERIAL  PVC  SS  
AMBIENT AIR 0 PPM  
WELL MOUTH 0 PPM

### PURGE DATA

	32	40	43	50	04
PURGE VOLUME	22 GAL	44 GAL	66 GAL	88 GAL	110 GAL
TEMP, DEG C	11.4	11.2	11.2	11.1	10.9
PH, UNITS	7.4	7.3	7.4	7.3	7.4
SPECIFIC CONDUCTIVITY umhos/cm	542	539	539	529	546

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

SAMPLING  ISCO #  
 GRUNDFOS#  
 2"  4" #

EQUIPMENT ID

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				022280.C
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			022280.C
CL TT08	YES	4 DEG C	500 ML POLY			070310.C
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GMM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- see attached for volumes

SIGNATURE: *[Signature]*  
RECEIVED BY: Nancy E. Roper

well elev = 924.1

riser elev = 926.28

GW elev = 777.24

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN 89 04 A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELN-89-04A

JOB NUMBER 6853-04

SAMPLING DATE 12.5.91

LOCATION ACTIVITY START 1100 END 1200\*

PROGRAM C

FILE NAME CGW

WEATHER Snow 20°F

### WATER LEVEL / WELL DATA

WELL DEPTH 163.7 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) 2.77 FT

PROTECTIVE CASING/WELL DIFF. -3.8

WATER DEPTH 151.2 FT

WELL DIAMETER 2 INCH  
4 INCH  
6 INCH

GROUNDWATER ELEVATION (BGS) 146.90

HEIGHT OF WATER COLUMN 14.7 FT x  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

25 GAL/VOL  
125 TOTAL GAL PURGED (180)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: WS

PURGE H2O CONTAINED? YES NO

WELL MATERIAL PVC SS

AMBIENT AIR PPM

WELL MOUTH PPM

### PURGE DATA

PURGE VOLUME	25 GAL	50 GAL	75 GAL	100 GAL	125 GAL
TEMP, DEG C	8.9	4.1	1.0	7.2	7.0
pH, UNITS	7.3	7.2	7.1	7.0	7.0
SPECIFIC CONDUCTIVITY umhos/cm	145	135	154	144	132

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS #  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	Ess lot #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1069 / 02220 C
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2			1069 / 02220 C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1070 / 070310 C
CL TT08	YES	4 DEG C	500 ML POLY		1071
SC4 TT08	YES	4 DEG C			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1072
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1073 / 1074 / 1075 / 02220 L
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1076 / 1077 / 02220 C
NG 99	NO	4 DEG C	1 L AG		
NAM UN06	NO	4 DEG C	1 L AG		
DNT UW26	NO	4 DEG C	1 L AG		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- see attached for volume calculations

- cap broken when removing PVC riser in well

SIGNATURE: [Signature]

RECEIVED BY: [Signature]

\*sampled at 1430  
(over)- returned on 12.10.91 to recollect metals/Hard - hadn't been filtered in field

grd. elev = 924.8

riser elev = 926.63

GW elev = 776.41

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN 89 04 B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELN-89-04B

JOB NUMBER 6853-04

SAMPLING DATE 12 5 91

LOCATION ACTIVITY START 1215 END 1330\*

PROGRAM C

FILE NAME CGW

WEATHER Snow 20°F

### WATER LEVEL / WELL DATA

WELL DEPTH 200.2 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.75 FT

PROTECTIVE CASING/WELL DIFF. -0.20 FT

WATER DEPTH 152.72 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGD) 148.67

HEIGHT OF WATER COLUMN 50 FT  
x 1.6 GAL/FT (2 IN)  
x 1.65 GAL/FT (4 IN)  
x 1.5 GAL/FT (6 IN)  
x \_\_\_\_ GAL/FT (IN)

45 GAL/VOL

225 TOTAL GAL PURGED (220)

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: *CP*

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR \_\_\_\_ PPM

WELL MOUTH \_\_\_\_ PPM

### PURGE DATA

PURGE VOLUME	45 GAL	90 GAL	135 GAL	180 GAL	225 GAL
TEMP, DEG C	7.7	9.5	7.4	9.0	6.7
PH, UNITS	7.6	7.8	7.8	8.5	6.0
SPECIFIC CONDUCTIVITY umhos/cm	475	446	441	621	587

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
SUBMERSIBLE PUMP  GROUNDOS# \_\_\_\_\_  
BAILER  2"  4" # \_\_\_\_\_  
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	ESS lot #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1078 / / / 022280.C
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1078 / / / 022280.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1079 / / / 070310.C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1080 / / /
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1081 / / /
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>	
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>	
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1082 / 1083 / 1084 / 021730.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1085 / 1086 / / 012810.C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (FL:GFAA, K/NA:ICP)

- see attached for volume calculations.  
\* sample 1262 89-04A @ 1330

SIGNATURE: *Nancy E. Pota*  
RECEIVED BY: *Nancy E. Pota*

grd elev = 290.2

riser elev = 900.95

GW elev = 777.68

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 01 OF 01

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **ELM8905**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **12-8-91**

SITE ID **ELM-89-05**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1530 END 1615**

PROGRAM **C**

WEATHER **clear, 50°s**

*Windy*

### WATER LEVEL / WELL DATA

TOP OF WELL     PROTECTIVE CASING STICK-UP (FROM GROUND) **2.54 FT**     PROTECTIVE CASING/WELL DIFF. **10.01 FT**

WELL DEPTH **129.5 FT**     MEASURED     HISTORICAL

WATER DEPTH **127 FT**    WELL DIAMETER  2 INCH     4 INCH     6 INCH    GROUNDWATER ELEVATION (BGS) **120.74**

HEIGHT OF WATER COLUMN **6.2 FT**     .16 GAL/FT (2 IN)     .65 GAL/FT (4 IN) = **11 GAL/VOL**     1.5 GAL/FT (6 IN)     GAL/FT (IN)

**55 TOTAL GAL PURGED**

PURGE H2O CONTAINED?  YES     NO    WELL MATERIAL  PVC     SS    AMBIENT AIR **0.4 PPM**    WELL MOUTH **0.4 PPM**

WELL INTEGRITY: PROT. CASING SECURE  YES     NO     NA  
 CONCRETE COLLAR INTACT  YES     NO     NA  
 WELL LOCKED  YES     NO     NA  
 OTHER: **Cap**

### PURGE DATA

	59	03	07	11	15	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLGRED <input checked="" type="checkbox"/> TURBID <input type="checkbox"/> ODR <input type="checkbox"/> OTHER (SEE NOTES)
PURGE VOLUME	@ 11 GAL	@ 22 GAL	@ 33 GAL	@ 44 GAL	@ 55 GAL	
TEMP, DEG C	9.5	9.7	9.8	9.8	9.6	
pH, UNITS	7.4	7.4	7.4	7.4	7.4	
SPECIFIC CONDUCTIVITY umhos/cm	576	550	559	558	554	

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP    EQUIPMENT ID \_\_\_\_\_    DECON FLUIDS USED  POTABLE WATER    WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE

SAMPLING  SUBMERSIBLE PUMP    ISCO # \_\_\_\_\_    LIQUINOX     FLOAT ACTIVATED

BAILER    GRUNDEPS# \_\_\_\_\_    STEAM CLEANING     PRESSURE TRANSDUCER

PVC/SILICON TUBING    2"  4" # \_\_\_\_\_

IN-LINE/DISPOSABLE FILTER    NUMBER OF FILTERS USED **1**

OTHER \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	907	0022851C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	907	0022851C
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	908	070301C
SO4	YES	4 DEG C		<input checked="" type="checkbox"/>	909	
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	910	
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	911	0012301C
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	914	0022851C
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/M/ACP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/M/ACP)

- see attached for volumes

SIGNATURE: *[Signature]*

RECEIVED BY: *Wendy E. [Signature]*

grl. elev. = 906.1

miser elev. = 908.22

GW elev. = 776.34

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT USATHAMA-BAAP

FIELD SAMPLING NUMBER ELN8906B

SITE ID ELN-89-06B

SITE TYPE WELL

SAMPLING DATE 12.8.91

LOCATION ACTIVITY START 0900 END 1030

JOB NUMBER 6853-04

FILE NAME CGW

PROGRAM C

WEATHER Partly 50°

### WATER LEVEL / WELL DATA

WELL DEPTH 182.0 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.70 FT

PROTECTIVE CASING/WELL DIFF. -.75 FT

WATER DEPTH 131.38 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BG5) 129.43

HEIGHT OF WATER COLUMN 50.82 FT X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

45 GAL/VOL

225 TOTAL GAL PURGED

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

### PURGE DATA

PURGE VOLUME	<u>45</u> GAL	<u>90</u> GAL	<u>135</u> GAL	<u>180</u> GAL	<u>225</u> GAL
TEMP, DEG C	<u>10.6</u>	<u>10.4</u>	<u>10.3</u>	<u>10.4</u>	<u>10.6</u>
pH, UNITS	<u>7.3</u>	<u>7.4</u>	<u>7.5</u>	<u>7.5</u>	<u>7.5</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>651</u>	<u>638</u>	<u>640</u>	<u>643</u>	<u>642</u>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDEOS# \_\_\_\_\_  
2"  4"  # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

PARAMETERS	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1087</u>	<u>0222501C</u>
NA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1087</u>	<u>0222501C</u>
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1088</u>	<u>0703101C</u>
CL	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1089</u>	
SO4	TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1090</u>	
TDS	USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>1091</u>	<u>0212301C</u>
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>1094</u>	<u>0225101C</u>
NG	99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	UN26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* containerized purge H2O for VOC's  
- see attached for volumes

SIGNATURE: R. C. Smith / ABC  
RECEIVED BY: Nancy E. Poika

3rd elev = 913.7

RISER elev = 916.19

GW elev = 776.47

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 01 OF 01

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **ELM8907**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **12.9.91**

SITE ID **ELM-89-107**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1315 END 1415**

PROGRAM **C**

WEATHER **Sunny, 30°S**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.35 FT**  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. **0.29 FT**

WELL DEPTH **15.4 FT**  
WATER DEPTH **139.72 FT**

WELL DIAMETER  2 INCH GROUNDWATER ELEVATION (BGS) **137.46**  
 4 INCH  
 6 INCH

HEIGHT OF WATER COLUMN **12.7 FT**  
PURGE VOLUME:  1.6 GAL/FT (2 IN) **21** GAL/VOL  
 0.65 GAL/FT (4 IN) = **105** TOTAL GAL PURGED  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: **cap**

PURGE H2O CONTAINED? YES  NO   
WELL MATERIAL  PVC  SS  
AMBIENT AIR **0.8** PPM  
WELL MOUTH **0.8** PPM

### PURGE DATA

	34	41	40	55	02
PURGE VOLUME	@ <b>21</b> GAL	@ <b>42</b> GAL	@ <b>63</b> GAL	@ <b>84</b> GAL	@ <b>105</b> GAL
TEMP, DEG C	<b>9.3</b>	<b>9.4</b>	<b>10.1</b>	<b>9.2</b>	<b>9.4</b>
PH, UNITS	<b>7.9</b>	<b>7.7</b>	<b>7.6</b>	<b>7.3</b>	<b>7.5</b>
SPECIFIC CONDUCTIVITY umhos/cm	<b>532</b>	<b>559</b>	<b>560</b>	<b>560</b>	<b>564</b>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 COOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP ISCO # \_\_\_\_\_  
 BAILER GROUNDOS# \_\_\_\_\_  
 PVC/SILICON TUBING 2"  4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2			916 / 022285 C
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2			
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2			
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2			
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2			
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2			
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2			
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2			
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2			
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	916	022285 C
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	917	020310 C
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C		918	
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	919	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C			
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	920	021230 C
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	923	022285 C
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG		
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG		
<input checked="" type="checkbox"/> DNT UM26	NO	4 DEG C	1 L AG		
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- see attached for volumes

SIGNATURE: *Nancy E. [Signature]*  
RECEIVED BY: **Nancy E.**



grd. elev. = 903.0

riser elev. = 906.04

GW elev. = 777.13

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELM8902

PROJECT USATHAMA-BAAP

SITE TYPE WEL

SAMPLING DATE 12.9.91

SITE ID ELM-89-02

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1430 END 1530

PROGRAM C

WEATHER Sunny, 30°S

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE TOP OF CASING CASING STICK-UP (FROM GROUND) **2.85 FT** PROTECTIVE CASING/WELL DIFF. **0.20 FT**

WELL DEPTH **148** FT MEASURED  HISTORICAL

WATER DEPTH **128.9** FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION (BGS) **126.26**

HEIGHT **19** FT

WATER COLUMN **19** FT

16 GAL/FT (2 IN)  65 GAL/FT (4 IN) = **32** GAL/VOL

1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN)

TOTAL GAL PURGED **160**

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR **0.6** PPM WELL MOUTH **0.6** PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  NA CONCRETE COLLAR INTACT  YES  NO  NA WELL LOCKED  YES  NO  NA OTHER: **cap**

### PURGE DATA

	24	37	48	51	10	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
PURGE VOLUME	@ <b>32</b> GAL	@ <b>64</b> GAL	@ <b>96</b> GAL	@ <b>128</b> GAL	@ <b>160</b> GAL	
TEMP, DEG C	<b>11.0</b>	<b>10.4</b>	<b>11.7</b>	<b>11.9</b>	<b>12.2</b>	
PH, UNITS	<b>7.4</b>	<b>7.8</b>	<b>7.6</b>	<b>7.5</b>	<b>7.6</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>513</b>	<b>510</b>	<b>520</b>	<b>521</b>	<b>517</b>	

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_ GRUNDEOS# \_\_\_\_\_ 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	ESS lot #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	925 / 022280.C
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	925 / 022280.C
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	926 / 020318.C
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	927 /
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	928 /
ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>	
TPS	NO	4 DEG C		<input type="checkbox"/>	
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>	
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>	
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input type="checkbox"/>	929 / 930 / 931 / 021230.C
BN/A	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>	932 / 933 / 022280.C
NG	NO	4 DEG C	1 L AG	<input type="checkbox"/>	
NAM	NO	4 DEG C	1 L AG	<input type="checkbox"/>	
DNT	NO	4 DEG C	1 L AG	<input type="checkbox"/>	
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>	

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K:NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K:NA:ICP)

- see attached for calculations

SIGNATURE: *[Signature]*  
 RECEIVED BY: Nancy E. Portia

grd. elev. = 919.6 riser elev. = 921.79 GW elev. = 779.44

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE   

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER E L M 2 9 0 9

PROJECT USATHAMA-BAAP  
 SITE ID E L M - 2 9 - 0 9  
 LOCATION ACTIVITY START 1500 END 1600

SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C

SAMPLING DATE 12 15 91  
 FILE NAME CGW  
 WEATHER Sunny, 40's, Windy

**WATER LEVEL / WELL DATA**

TOP OF WELL     TOP OF CASING    PROTECTIVE CASING/WELL DIFF. 3.19 FT  
 MEASURED     HISTORICAL    (FROM GROUND)  
 WELL DEPTH 152.70 FT  
 WATER DEPTH 142.35 FT  
 WELL DIAMETER  2 INCH     4 INCH     6 INCH    GROUNDWATER ELEVATION 140.39 (BGS)  
 HEIGHT OF WATER COLUMN AA FT X  .16 GAL/FT (2 IN)     .65 GAL/FT (4 IN)     1.5 GAL/FT (6 IN)     GAL/FT ( IN)  
24 GAL/VOL    120 TOTAL GAL PURGED  
 PURGE H2O CONTAINED?  YES     NO    WELL MATERIAL  PVC     SS    AMBIENT AIR 02 PPM    WELL MOUTH 0.2 PPM  
 WELL INTEGRITY: PROT. CASING SECURE  YES     NO     N/A  
 CONCRETE COLLAR INTACT  YES     NO     N/A  
 WELL LOCKED  YES     NO     N/A  
 OTHER: Cap

**PURGE DATA**

	10	15	24	34	42	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
PURGE VOLUME	@ 24 GAL	@ 40 GAL	@ 72 GAL	@ 96 GAL	@ 120 GAL	
TEMP, DEG C	12.4	13.3	12.4	12.0	12.3	
pH, UNITS	7.1	7.0	7.1	7.1	7.0	
SPECIFIC CONDUCTIVITY umhos/cm	1085	1165	1135	1167	1138	

**EQUIPMENT DOCUMENTATION**

PURGING     SAMPLING   
 PERISTALTIC PUMP     ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP     GRUNDFOS# \_\_\_\_\_  
 BAILER     2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED:  POTABLE WATER     LIQUINOX     STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE     FLOAT ACTIVATED     PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS			ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY					
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			934			0122801C
<input checked="" type="checkbox"/> CA	YES	HNO3 TO pH<2						
<input checked="" type="checkbox"/> NA	YES	HNO3 TO pH<2						
<input checked="" type="checkbox"/> CD	YES	HNO3 TO pH<2						
<input checked="" type="checkbox"/> CR	YES	HNO3 TO pH<2						
<input checked="" type="checkbox"/> HG	YES	HNO3 TO pH<2						
<input checked="" type="checkbox"/> PB	YES	HNO3 TO pH<2						
<input checked="" type="checkbox"/> NI	YES	HNO3 TO pH<2						
<input checked="" type="checkbox"/> BA	YES	HNO3 TO pH<2						
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2			934			0221501C
<input checked="" type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY		935			0705131C
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY		936			
<input checked="" type="checkbox"/> SO4	YES	4 DEG C	500 ML POLY		937			
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY					
<input checked="" type="checkbox"/> TDS	NO	4 DEG C						
<input checked="" type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL					
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY					
<input checked="" type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		938	939	940	0217301C
<input checked="" type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG		941	942		0225101C
<input checked="" type="checkbox"/> NG	NO	4 DEG C	1 L AG					
<input checked="" type="checkbox"/> NAM	NO	4 DEG C	1 L AG					
<input checked="" type="checkbox"/> DNT	NO	4 DEG C	1 L AG					
<input checked="" type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GWM					

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:CC)  
 - see attached for volumes  
 SIGNATURE: *[Signature]*  
 RECEIVED BY: Nancy E. [Signature]

grd. elev = 902.8

riser elev = 905.02

GW elev = 777.87

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN8201A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELN-82-01A

JOB NUMBER 6853-04

SAMPLING DATE 11 25 91

LOCATION ACTIVITY START 1000 END 1230

PROGRAM C

FILE NAME CGW

WEATHER overcast cold 15°

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE TOP OF CASING CASING STICK-UP (FROM GROUND) **2.14** FT PROTECTIVE CASING/WELL DIFF. **0.0** FT

WELL DEPTH **133.48** FT  MEASURED  HISTORICAL

WATER DEPTH **127.15** FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION (BGS) **125.01**

HEIGHT OF WATER COLUMN **6.33** FT X  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN)

**4.1** GAL/VOL **6** TOTAL GAL PURGED **(137)**

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR PPM WELL MOUTH PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A CONCRETE COLLAR INTACT  YES  NO  N/A WELL LOCKED  YES  NO  N/A OTHER: \_\_\_\_\_

### PURGE DATA

PURGE VOLUME	a 3 GAL	a 6 GAL	a GAL	a GAL	a GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	10.5	9.1				<input checked="" type="checkbox"/> CLEAR
PH, UNITS	6.5	6.5				<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	546	502				<input type="checkbox"/> COLORED
						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PLUGGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDEDS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER-LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	943	022280.C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	943	022280.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	944	072310.C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	945	
SC4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	946	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL		<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY		<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C (3)40 ML VIAL		<input checked="" type="checkbox"/>	947	021350.C
BN/A UM16	NO	4 DEG C (2) 1 L AG		<input checked="" type="checkbox"/>	950	017510.C
NG 99	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>	951	
NAM UN06	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2 1 L GWM		<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes  
 Ran dry at 4 gallons well at bottom of well  
 Ran dry at 17.5 min Ran dry to two more gallons will wait 20 min & sample  
 Signature: *DRD*  
 RECEIVED BY: *Nancy E. Rota*  
 Let recharge again & sample

Flow = 9024

Flow = 90475

GW elev = 777.61

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 0

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN8201B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELN-82-01B

JOB NUMBER 6853-04

SAMPLING DATE 11-27-91

LOCATION ACTIVITY START 1030 END 1300

PROGRAM C

FILE NAME CGW

WEATHER

### WATER LEVEL / WELL DATA

WELL DEPTH 145.40 FT

MEASURED HISTORICAL

TOP OF WELL PROTECTIVE TOP OF CASING CASING STICK-UP (FROM GROUND) 2.50 FT

PROTECTIVE CASING/WELL DIFF. 4.11 FT

WATER DEPTH 126.94 FT

WELL DIAMETER 2 INCH 4 INCH 6 INCH

GROUNDWATER ELEVATION (BGS) 124.75

HEIGHT OF WATER COLUMN 18.54 FT x .16 GAL/FT (2 IN) .65 GAL/FT (4 IN) 1.5 GAL/FT (6 IN)

12 GAL/VOL 11.5 TOTAL GAL PURGED (6.1)

WELL INTEGRITY: PROT. CASING SECURE YES NO YES NO CONCRETE COLLAR INTACT YES NO YES NO WELL LOCKED YES NO YES NO OTHER: Feathers in well

PURGE H2O CONTAINED? YES NO

WELL MATERIAL PVC SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

### PURGE DATA

PURGE VOLUME	@ 10 GAL	@ Recharge water GAL	@ GAL	@ GAL	@ GAL
TEMP, DEG C	9.6	8.2			
pH, UNITS	7.56	7.65			
SPECIFIC CONDUCTIVITY umhos/cm	674	531			
	See Notes				

SAMPLE OBSERVATIONS: CLEAR CLOUDY COLORED black TURBID ODOR leachate OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID ISCO #

SAMPLING  SUBMERSIBLE PUMP GRUNDFOS# H200

BAILER 2" 4" #

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER Gelman

OTHER

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		952	022280.C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			952	022280.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		953	070310.C
CL TT08	YES	4 DEG C	500 ML POLY		954	
SC4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		955	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		956	021230.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		959	2.2810.C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes  
-not dry at 10 gallons let recharge 15 min  
& pulled out 1/2 gallon with let recharge 1/2 hr & sample  
Note 2 - water purged was dark in color and smelled

SIGNATURE: [Signature]  
RECEIVED BY: Nancy E. [Signature]

After 1 hr of 8 m well was sampled 1 gallon recharge only

ard. elev. = 9027 riser elev. = 905.06 GW elev. = 777.46

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER **ELN8201C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **11-25-91**

SITE ID **ELN-82-01C**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1100 END 1330**

PROGRAM **C**

WEATHER **Overcast 15° Pluvius**

**WATER LEVEL / WELL DATA**

TOP OF WELL TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) **2.27 FT** PROTECTIVE CASING/WELL DIFF. **-0.03 FT**

WELL DEPTH **155.30 FT**  MEASURED HISTORICAL

WATER DEPTH **127.60 FT** WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION (BGS) **125.36**

HEIGHT OF WATER COLUMN **27.70 FT** X  16 GAL/FT (2 IN)  6.5 GAL/FT (4 IN) = **18** GAL/VOL  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN) **64** TOTAL GAL PURGED **(170)**

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR **0** PPM WELL MOUTH **0** PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A CONCRETE COLLAR INTACT  YES  NO  N/A WELL LOCKED  YES  NO  N/A OTHER: \_\_\_\_\_

**PURGE DATA**

PURGE VOLUME	<b>@ 18 GAL</b>	<b>@ 36 GAL</b>	<b>@ 48 GAL</b>	<b>@ 64 GAL</b>	<b>@ _____ GAL</b>	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>10.0</b>	<b>9.3</b>	<b>10.0</b>	<b>11.0</b>		
PH, UNITS	<b>7.6</b>	<b>7.5</b>	<b>7.0</b>	<b>7.0</b>		
SPECIFIC CONDUCTIVITY umhos/cm	<b>461</b>	<b>445</b>	<b>466</b>	<b>499</b>		

**EQUIPMENT DOCUMENTATION**

PURGING  PERISTALTIC PUMP ISCO # \_\_\_\_\_ EQUIPMENT ID \_\_\_\_\_ DECON FLUIDS USED  POTABLE WATER WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 SUBMERSIBLE PUMP GRUNDEOS# **E3** LIQUINOX  FLOAT ACTIVATED  
 BAILER 2"  4" # \_\_\_\_\_ STEAM CLEANING  PRESSURE TRANSDUCER  
 PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER **6el man** NUMBER OF FILTERS USED **1**  
 OTHER \_\_\_\_\_

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<b>961</b>	<b>0222501C</b>
<input checked="" type="checkbox"/> NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<b>961</b>	<b>0222501C</b>
<input checked="" type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<b>962</b>	<b>0703101C</b>
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<b>963</b>	
<input checked="" type="checkbox"/> SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<b>964</b>	
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC	NO	H2SO4 TO pH<2 (3)40 ML VIAL		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2 500 ML POLY		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC	NO	HCL, 4 DEG C (3)40 ML VIAL		<input checked="" type="checkbox"/>	<b>965</b>	<b>0212301C</b>
<input checked="" type="checkbox"/> BN/A	NO	4 DEG C (2) 1 L AG		<input checked="" type="checkbox"/>	<b>968</b>	<b>0212301C</b>
<input checked="" type="checkbox"/> NG	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>	<b>969</b>	
<input checked="" type="checkbox"/> NAM	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> DNT	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TPH	NO	H2SO4 TO pH<2 1 L GWM		<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- used historical volumes  
 pump 4 ~~gallons~~ volumes from well by purging  
 10 gallons waiting 10 min and purging 18.

SIGNATURE: *Daniel A. Doral*  
 RECEIVED BY: *Nancy E. Rosta*

grnd. elev. = 913.8

riser elev. = 916.00

GW elev. = 777.65

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN8202A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.9.91

SITE ID ELN-82-02A

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0800 END 0900

PROGRAM C

WEATHER prt. sunny, 30°S

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.19 FT

PROTECTIVE CASING/WELL DIFF. 40.02 FT

WELL DEPTH 144.65 FT

MEASURED  
 HISTORICAL

WELL DIAMETER 4 INCH

GROUNDWATER ELEVATION (BGS) 136.24

WATER DEPTH 138.35 FT

0.16 GAL/FT (2 IN) 27 GAL/VOL

HEIGHT OF WATER COLUMN 6.3 FT

1.65 GAL/FT (4 IN) = 135 TOTAL GAL PURGED (131)

1.5 GAL/FT (6 IN)

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  
CONCRETE COLLAR INTACT  YES  NO  
WELL LOCKED  YES  NO  
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.8 PPM

WELL MOUTH 0.8 PPM

### PURGE DATA

PURGE VOLUME

51	27	54	81	108	135
GAL	GAL	GAL	GAL	GAL	GAL

TEMP, DEG C

pH, UNITS

SPECIFIC CONDUCTIVITY umhos/cm

9.6	9.8	9.3	9.3	10.2
6.9	6.9	6.7	6.7	6.6
1.327	1.302	1.325	1.320	1.320

SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

URGING SAMPLING

- PERISTALTIC PUMP
- SUBMERSIBLE PUMP
- BAILER
- PVC/SILICON TUBING
- IN-LINE/DISPOSABLE FILTER
- OTHER

EQUIPMENT ID

ISCO #  
GRUNDEFS#  
2" 4" #

DECON FLUIDS USED

- POTABLE WATER
- LIQUINOX
- STEAM CLEANING

WATER LEVEL EQUIP. USED

- ELECTRIC COND. PROBE
- FLOAT ACTIVATED
- PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

3 ppm

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			970	022850.C
CA	SS16	YES	HNO3 TO pH<2			
NA	SS16	YES	HNO3 TO pH<2			
CD	SS16	YES	HNO3 TO pH<2			
CR	SS16	YES	HNO3 TO pH<2			
HG	SB03	YES	HNO3 TO pH<2			
PB	SD24	YES	HNO3 TO pH<2			
NI	SS16	YES	HNO3 TO pH<2			
BA	SS16	YES	HNO3 TO pH<2			
HARD	USEPA 130.2	YES	HNO3 TO pH<2		970	022850.C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	971	0703.0.C
CL	TT08	YES	4 DEG C	500 ML POLY	972	
SC4	TT08	YES	4 DEG C			
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	973	
TDS	USEPA 160.1	NO	4 DEG C			
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	974	022850.C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	977	022850.C
NG	99	NO	4 DEG C	1 L AG		
NAM	UN06	NO	4 DEG C	1 L AG		
DNT	UW26	NO	4 DEG C	1 L AG		
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes  
-after pumping 133 gal., recharge? seemed unusable  
flow markings on inside of well labeled it dog.

SIGNATURE: *[Signature]*  
RECEIVED BY: Nancy E. *[Signature]*

and  
elev = 914.6

Riser  
elev = 916.62

GW  
elev = 777.62

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **ELN8202B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **12.29.91**

SITE ID **ELN-82-02B**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0815 END 0930**

PROGRAM **C**

WEATHER **prt. sunny, 30's**

### WATER LEVEL / WELL DATA

WELL DEPTH **152.20 FT**

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) **2.10 FT**

PROTECTIVE CASING/WELL DIFF. **0.02 FT**

WATER DEPTH **138.94 FT**

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) **136.80**

HEIGHT OF WATER COLUMN **13.26 FT**

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

**28** GAL/VOL

**140** TOTAL GAL PURGED **(138)**

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: **cap**

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **0.8** PPM

WELL MOUTH **0.8** PPM

### PURGE DATA

	25	35	45	55	65
PURGE VOLUME	<b>280</b> GAL	<b>50</b> GAL	<b>84</b> GAL	<b>112</b> GAL	<b>140</b> GAL
TEMP, DEG C	<b>9.3</b>	<b>9.6</b>	<b>9.5</b>	<b>9.2</b>	<b>9.2</b>
PH, UNITS	<b>6.9</b>	<b>6.9</b>	<b>7.0</b>	<b>6.9</b>	<b>6.8</b>
SPECIFIC CONDUCTIVITY umhos/cm	<b>143</b>	<b>144</b>	<b>142</b>	<b>142</b>	<b>145</b>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

SAMPLING  ISCO #  
 BRUNNEN#  
 2"  4" #

EQUIPMENT ID

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	FSS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CR	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> SO4	YES	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> TDS	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
<input checked="" type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG			
<input checked="" type="checkbox"/> NG	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> DNT	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: *Nancy E. Rofa*  
RECEIVED BY: Nancy E. Rofa

Card  
Elev = 914.2

Riser  
elev. = 916.19

GW  
elev = 777.63

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 0

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN8202C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELN-82-02C

JOB NUMBER 6853-04

SAMPLING DATE 12-9-91

LOCATION ACTIVITY START 0730 END 0800

PROGRAM C

FILE NAME CGW

WEATHER 30's, prt. sunny

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 0.15 FT

PROTECTIVE CASING/WELL DIFF. -0.01 FT

WELL DEPTH 163.85 FT  MEASURED  HISTORICAL

WATER DEPTH 138.56 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION (EGS) 136.42

HEIGHT OF WATER COLUMN 25.3 FT x  1.6 GAL/FT (2 IN)  0.65 GAL/FT (4 IN) = 33 TOTAL GAL PURGED

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.7 PPM

WELL MOUTH 0.7 PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: cap

### PURGE DATA

PURGE VOLUME	@ 6 GAL	@ 15 GAL	@ 27 GAL	@ GAL	@ GAL
TEMP, DEG C	8.7	10.2	10.6		
PH, UNITS	6.8	6.8	6.8		
SPECIFIC CONDUCTIVITY umhos/cm	947	997	969		

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID  
PERISTALTIC PUMP ISCO #  
SUBMERSIBLE PUMP GRNDFOS#  
BAILER 2" 4" #  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2			988	02250.C
<input checked="" type="checkbox"/> CA	SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA	SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD	SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CR	SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG	SB03	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB	SD24	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI	SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA	SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD	USEPA 130.2	YES	HNO3 TO pH<2			988	02250.C
<input checked="" type="checkbox"/> NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		989	07050.C
<input checked="" type="checkbox"/> CL	TT08	YES	4 DEG C	500 ML POLY		990	
<input checked="" type="checkbox"/> SO4	TT08	YES	4 DEG C				
<input checked="" type="checkbox"/> ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		991	
<input checked="" type="checkbox"/> TDS	USEPA 160.1	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC	USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL				
<input checked="" type="checkbox"/> NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY				
<input checked="" type="checkbox"/> VOC	UM17	NO	HCL, 4 DEG C (3)40 ML VIAL			992	02250.C
<input checked="" type="checkbox"/> BN/A	UM16	NO	4 DEG C (2) 1 L AG			993	02250.C
<input checked="" type="checkbox"/> NG	99	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM	UN06	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> DNT	UN26	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- dry @ 33 yd 12-8-91  
- used historical volumes  
(12-13-91) 1530 Resampled for TAL/Hard + Nit

SIGNATURE: *[Signature]*  
RECEIVED BY: Nancy E. [Signature]

because these samples arrived at lab unpreserved.



2nd. elev = 925.7 riser elev. = 927.68 GW elev. = 777.38  
 elev. = 925.7 riser elev. = 927.68 GW elev. = 777.38

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_ OF \_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER **ELN8203A**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **11-25-91**

SITE ID **ELN-82-103A**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0830 END 1300**

PROGRAM **C**

WEATHER

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **2.36 FT**  
 PROTECTIVE CASING/WELL DIFF. **-0.02**

WELL DEPTH **157.4 FT**

MEASURED  
 HISTORICAL

WATER DEPTH **150.3 FT**

WELL DIAMETER  2 INCH  3 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) **147.96**

HEIGHT OF WATER COLUMN **7 FT**  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)=  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

GAL/VOL **~1** TOTAL GAL PURGED **(146)**

WELL INTEGRITY: YES  NO   
 PROT. CASING SECURE  NO   
 CONCRETE COLLAR INTACT  NO   
 WELL LOCKED  NO   
 OTHER: **cap**

PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR - PPM **-** WELL MOUTH - PPM **-**

**PURGE DATA**

PURGE VOLUME	@ 25.05 GAL	@ GAL	@ GAL	@ GAL	@ GAL
TEMP, DEG C	<b>7.4</b>				
pH, UNITS	<b>7.2</b>				
SPECIFIC CONDUCTIVITY umhos/cm	<b>216</b>				

SAMPLE OBSERVATIONS: YES  NO   
 CLEAR  CLOUDY   
 COLORED  TURBID   
 ODOR  OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
 BAILER  GROUNDOS# \_\_\_\_\_  
 PVC/SILICON TUBING  2"  4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 REGION FLUIDS USED:  POTABLE WATER  LIQUIDIX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED \_\_\_\_\_

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		997
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA	YES	HNO3 TO pH<2			
NA	YES	HNO3 TO pH<2			
CD	YES	HNO3 TO pH<2			
CR	YES	HNO3 TO pH<2			
HG	YES	HNO3 TO pH<2			
PB	YES	HNO3 TO pH<2			
NI	YES	HNO3 TO pH<2			
BA	YES	HNO3 TO pH<2			
HARD	YES	HNO3 TO pH<2			
NIT	YES	H2SO4 TO pH<2	500 ML POLY		997
CL	YES	4 DEG C	500 ML POLY		998
SC4	YES	4 DEG C	500 ML POLY		999
ALK	NO	4 DEG C	500 ML POLY		1000
TDS	NO	4 DEG C			
TOC	NO	H2SO4 TO pH<2 (3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2 500 ML POLY			
VOC	NO	HCL, 4 DEG C (3)40 ML VIAL			1001 / 1002 / 1003
BN/A	NO	4 DEG C (2) 1 L AG			1004 / 1005
NG	NO	4 DEG C	1 L AG		
NAM	NO	4 DEG C	1 L AG		
DNT	NO	4 DEG C	1 L AG		
TPH	NO	H2SO4 TO pH<2	1 L GUM		

**NOTES**

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 - used historical volumes  
 - purged ~ 1/4 gal and could not get any more. 3/4 gal. very thick with ash and rocks.  
 Signature: \_\_\_\_\_  
 RECEIVED BY: **Nancy E. Rosta**

find Battery lead, lost but retrieved  
 bailer **See other side?**

arel elev = 925.3

riser elev = 926.93

GW elev = 777.13

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN8203C

PROJECT: USATHAMA-BAAP

SITE TYPE

WELL

SITE ID: EILN-82-03C

JOB NUMBER

6853-04

SAMPLING DATE

11/25/91

LOCATION ACTIVITY: START ~~0830~~ ~~1030~~ END ~~1130~~ ~~1150~~

PROGRAM

C

FILE NAME

CSW

WEATHER

clearcast 20's

### WATER LEVEL / WELL DATA

WELL DEPTH: 177.0 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.74 FT

PROTECTIVE CASING/WELL DIFF. 7.02 FT

WATER DEPTH: 179.75 FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

148.03

HEIGHT OF WATER COLUMN: 27.3 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

33 GAL/VOL

145 TOTAL GAL PURGED

162

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CCP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR \_\_\_\_\_ PPM

WELL MOUTH \_\_\_\_\_ PPM

### PURGE DATA

PURGE VOLUME	@ 33 GAL	@ 66 GAL	@ 99 GAL	@ 132 GAL	@ 165 GAL
TEMP, DEG C	8.5	9.6	9.1	8.8	9.1
PH, UNITS	7.5	7.4	7.5	7.5	7.5
SPECIFIC CONDUCTIVITY umhos/cm	592	582	572	571	561

SAMPLE OBSERVATIONS

CLEAR

CLOUDY

COLORED

TURBID

ODCR

OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID

PERISTALTIC PUMP ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP GROUNDFOS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING \_\_\_\_\_

IN-LINE/DISPOSABLE FILTER \_\_\_\_\_

OTHER \_\_\_\_\_

DISCON FLUIDS USED

POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		ESS (w/ #)
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			10.5 / 0227801C
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2			10.5 / 0723101C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		10.6 /
CL TT08	YES	4 DEG C	500 ML POLY		10.7 /
SO4 TT08	YES	4 DEG C			10.8 /
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		10.9 / 10.20 / 10.21 / 0212301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		10.22 / 10.23 / 0228101C
NG 99	NO	4 DEG C	1 L AG		
NAM UN06	NO	4 DEG C	1 L AG		
DNT UW26	NO	4 DEG C	1 L AG		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:CP)

-used historical volumes

SIGNATURE: *[Signature]*

RECEIVED BY: Nancy E. [Signature]

HNO getting Dark

sampled 02-03C to be 02-03B  
Time: 2:10:35

orig. elev = 721.7

user elev. = 903.72

GW elev = 778.20

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **ELN8204A**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **12.5.91**

SITE ID **ELN-82-04A**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0800 END 0830**

PROGRAM **C**

WEATHER **Snow 20°F**

### WATER LEVEL / WELL DATA

WELL DEPTH **152.32 FT**

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) **1.97 FT**

PROTECTIVE CASING/WELL DIFF. **-0.06 FT**

WATER DEPTH **145.52 FT**

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) **143.61**

HEIGHT OF WATER COLUMN **6.8 FT** x  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

GAL/VOL **1/4** TOTAL GAL PURGED **(137)**

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: **cap**

PURGE H2O CONTAINED?  YES  NO  
WELL MATERIAL  PVC  SS  
AMBIENT AIR | PPM | WELL MOUTH | PPM

### PURGE DATA

PURGE VOLUME	D. 25 GAL	D. GAL	D. GAL	D. GAL	D. GAL
TEMP, DEG C					
pH, UNITS (pH paper)	<b>6</b>				
SPECIFIC CONDUCTIVITY umhos/cm	<b>601</b>				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERGIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRINDIOS# \_\_\_\_\_  
2" 4" # \_\_\_\_\_

REC'D FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY		ESS 1st #
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2			
CA	SS16	YES	HNO3 TO pH<2		12.5.91	1024 / 0222801C
NA	SS16	YES	HNO3 TO pH<2			
CD	SS16	YES	HNO3 TO pH<2			
CR	SS16	YES	HNO3 TO pH<2			
HG	SB03	YES	HNO3 TO pH<2			
PB	SD24	YES	HNO3 TO pH<2			
NI	SS16	YES	HNO3 TO pH<2			
BA	SS16	YES	HNO3 TO pH<2			
HARD	USEPA 130.2	YES	HNO3 TO pH<2		12.8.91	1024 / 0222801C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	12.6.91	1025 / 0222801C
CL	TT08	YES	4 DEG C	500 ML POLY	12.5.91	1026 / 0222801C
SO4	TT08	YES	4 DEG C			
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	12.6.91	1027 /
TDS	USEPA 160.1	NO	4 DEG C			
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	UM17	NO	4 DEG C	(3)40 ML VIAL	12.6.91	1028 / 1029 / 1030 / 0212301C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	12.8.91	1031 / 1032 / 0228101C
NG	99	NO	4 DEG C	1 L AG		
NAH	UN06	NO	4 DEG C	1 L AG		
DHT	UN26	NO	4 DEG C	1 L AG		
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 \* copy of original - see attached  
 - would not purge w/ pump  
 - retrieved 1 bailer full then no more (too sitty) 12.4.91

SIGNATURE: *[Signature]*  
 RECEIVED BY: **Nancy E. Rofa**

830) - ~~attempts~~ attempts on bailing, only retrieved 500 ml -> Cl/SO4 12.5.91  
 130) - 12.6.91 returned for one more attempt. was able to collect VOC's but they were not pre-preserved with HCl. Also got NIT and ALK/TDS.  
 00) - 12.8.91 N Rofa + T Vaughn returned to finish sampling. collected rest of parameters

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 01 OF 01

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN8204A

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID ELN-82-04A

JOB NUMBER

6853-04

SAMPLING DATE

12 5 91

LOCATION ACTIVITY START 0800 END 0830

PROGRAM

C

FILE NAME

CSW

WEATHER

Snow 20F  
windy

### WATER LEVEL / WELL DATA

WELL DEPTH 153.32 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.97 FT

PROTECTIVE CASING/WELL DIFF. -206 FT

WATER DEPTH 495.2 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 143.61

HEIGHT OF WATER COLUMN 6.8 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

GAL/VOL 1/4 TOTAL GAL PURGED (139)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR PPM

WELL MOUTH PPM

### PURGE DATA

PURGE VOLUME	@ 2.5 GAL	@ GAL	@ GAL	@ GAL	@ GAL
TEMP, DEG C					
PH, UNITS (PH PAPER)	6.0				
SPECIFIC CONDUCTIVITY umhos/cm	601				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE DISPOSABLE FILTER   
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEDS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		ESS 107 #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			022351C
CA SS16	YES	HNO3 TO pH<2			1024
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2			1024
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1025
CL TT08	YES	4 DEG C	500 ML POLY		1026
SO4 TT08	YES	4 DEG C	500 ML POLY		1027
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1028
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1031
NG 99	NO	4 DEG C	1 L AG		1032
NAM UN06	NO	4 DEG C	1 L AG		
DNT UW26	NO	4 DEG C	1 L AG		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

would not pump w/ pump  
retrieved 1 bucket full then no more  
dry well 12-4-91

SIGNATURE: William E. [Signature]  
RECEIVED BY: William E. [Signature]

\*contract # 51000 was cancelled resulting

grd. elev. = 921.9

riser elev = 924.18

GW elev = 777.95

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN8204B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELN-82-04B

JOB NUMBER 6853-04

SAMPLING DATE 12.5.91

LOCATION ACTIVITY START 0845 END 0930

PROGRAM C

FILE NAME CGW

WEATHER Snow, 20°F  
windy

### WATER LEVEL / WELL DATA

WELL DEPTH 162.6 FT

TOP OF WELL  
TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.22 FT

PROTECTIVE CASING/WELL DIFF. -0.07 FT

WATER DEPTH 146.33 FT

WELL DIAMETER 2 INCH  
4 INCH  
6 INCH

GROUNDWATER ELEVATION (BGS) 777.95 (144.08)

HEIGHT OF WATER COLUMN 21.6 FT  
1.6 GAL/FT (2 IN)  
65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)

GAL/VOL TOTAL GAL PURGED 193

WELL INTEGRITY: PROT. CASING SECURE YES NO N/A  
CONCRETE COLLAR INTACT YES NO N/A  
WELL LOCKED YES NO N/A  
OTHER: cap

PURGE H2O CONTAINED? YES NO

WELL MATERIAL PVC SS

AMBIENT AIR PPM

PPM

WELL MOUTH PPM

### PURGE DATA

PURGE VOLUME	a	b	c	d	e
TEMP, DEG C					
pH, UNITS (pH paper)	6.5				
SPECIFIC CONDUCTIVITY umhos/cm	350				

SAMPLE OBSERVATIONS  
CLEAR  
CLOUDY  
COLORED  
TURBID  
ODOR  
OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID ISCO #  
GRUNDFOS #  
2" 4" #

REC'D FLUIDS USED  
POTABLE WATER  
LIQUINOX  
STEAM CLEANING

WATER LEVEL EQUIP. USED  
ELECTRIC COND. PROBE  
FLOAT ACTIVATED  
PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1033	022801C
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1033	022801C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1034	022801C
CL	YES	4 DEG C	500 ML POLY		1035	022801C
SO4	YES	4 DEG C	500 ML POLY		1036	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2 (3)40 ML VIAL				
NH3N2	NO	H2SO4 TO pH<2 500 ML POLY				
VOC	NO	MCL, 4 DEG C (3)40 ML VIAL			1037	022801C
BN/A	NO	4 DEG C (2) 1 L AG			1040	022801C
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (JL:GFAA, K/NA:ICP)

Temp 6 gal. - try 12.4.91

SIGNATURE: [Signature] / PC  
RECEIVED BY: Nancy E. Rota

\* submitted 5 min w/ 10 min waiting

orig. elev. = 921.5

riser elev. = 923.73

GW elev. = 777.39

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN8204C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELN-82-04C

JOB NUMBER 6853-04

SAMPLING DATE 12-5-91

LOCATION ACTIVITY START 0950 END 1030

PROGRAM C

FILE NAME CGW

WEATHER Snow, 20°F

### WATER LEVEL / WELL DATA

TOP OF WELL     PROTECTIVE CASING STICK-UP (FROM GROUND)    2.10 FT     PROTECTIVE CASING/WELL DIFF.    0.02 FT

WELL DEPTH 175.2 FT     MEASURED     HISTORICAL

WATER DEPTH 146.39 FT     2 INCH     4 INCH     6 INCH    GROUNDWATER ELEVATION (BGS) 144.26

HEIGHT OF WATER COLUMN 28.9 FT     1.6 GAL/FT (2 IN)     1.65 GAL/FT (4 IN)     1.5 GAL/FT (6 IN)     GAL/FT (\_\_\_ IN)

GAL/VOL 43    TOTAL GAL PURGED 213

PURGE H2O CONTAINED?  YES     NO    WELL MATERIAL  PVC     SS    AMBIENT AIR    PPM    WELL MOUTH    PPM

WELL INTEGRITY: PROT. CASING SECURE  YES     NO     N/A  
 CONCRETE COLLAR INTACT  YES     NO     N/A  
 WELL LOCKED  YES     NO     N/A  
 OTHER: windy

### PURGE DATA

PURGE VOLUME	@ 25 GAL	@ 35 GAL	@ ___ GAL	@ ___ GAL	@ ___ GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODCR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C						
pH, UNITS (pH paper)	6	6				
SPECIFIC CONDUCTIVITY umhos/cm	411	412				

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP    EQUIPMENT ID  ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP     GRUNDFOS# \_\_\_\_\_  
 BAILER     2"     4" # \_\_\_\_\_  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER    WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 LIQUINOX     FLOAT ACTIVATED  
 STEAM CLEANING     PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	1042	022260
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1042	022260
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1043	020310
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1044	
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1045	
ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS	NO	4 DEG C		<input type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	1046 / 1047 / 1048	021230
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1049 / 1050	012610
NG	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

43 gal 12/1/91  
 \* submit 5' from well indicator reading

SIGNATURE: mm/ps  
 RECEIVED BY: Nancy E.

Well elev. = 925.5

Water elev. = 927.45

GW elev. = 777.20

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN8203B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELN-82-03B

JOB NUMBER 6853-04

SAMPLING DATE 11-25-91

LOCATION ACTIVITY START 0850 (M) END 0915

PROGRAM C

FILE NAME USW

WEATHER OVERCAST 20%

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE  
 TOP OF CASING CASING STICK-UP (FROM GROUND)

PROTECTIVE CASING/WELL DIFF. 2.04 FT

WELL DEPTH 151.95 FT

MEASURED  
 HISTORICAL

2.04 FT

WATER DEPTH 150.25 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 148.22

HEIGHT OF WATER COLUMN 4.7 FT

34 GAL/VOL  
88 TOTAL GAL PURGED (171)

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

### PURGE DATA

PURGE VOLUME	a 34 GAL	a 48 GAL	a 88 GAL	a GAL	a GAL
TEMP, DEG C	9.1	7.5	-00.1		
pH, UNITS	7.2	7.4	7.4		
SPECIFIC CONDUCTIVITY umhos/cm	906	843	802		

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID ISCO #  
GROUND PDS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	ESS lot #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1006 / 0222801C
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1006 / 0222801C
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1007 / 0793101C
SO4	YES	4 DEG C		<input checked="" type="checkbox"/>	1008
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1009
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>	
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>	
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1010 / 1011 / 1012 / 0212301C
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1013 / 1014 / 0228101C
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volume

SIGNATURE: [Signature]  
RECEIVED BY: Nancy E. Potter

See other side  
HW battery dead  
sampled 0003 C before  
082-03B Time: 1300

chrt  
elev. = 871.8

riser  
elev. = 873.96

GW  
elev. = 774.07

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

PROJECT USATHAMA-BAAP

SITE ID RPM-91-01

LOCATION ACTIVITY START 1430 END 1530

FIELD SAMPLING NUMBER RPM9101

SITE TYPE WELL

JOB NUMBER 6853-04

PROGRAM C

SAMPLING DATE 12-12-91

FILE NAME CGW

WEATHER Rain 40°

### WATER LEVEL / WELL DATA

WELL DEPTH 108.1 FT  MEASURED  HISTORICAL

WATER DEPTH 99.8 FT

HEIGHT OF WATER COLUMN 8 FT X  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (IN)

PROTECTIVE TOP OF WELL CASING STICK-UP (FROM GROUND) 2.5± FT

PROTECTIVE CASING/WELL DIFF. - .19 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) 97.58

HEIGHT OF WATER COLUMN 11 GAL/VOL

TOTAL GAL PURGED 55

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR      PPM

WELL MOUTH      PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

OTHER:     

### PURGE DATA

PURGE VOLUME	@ 11 GAL	@ 22 GAL	@ 33 GAL	@ 44 GAL	@ 55 GAL
TEMP, DEG C	<u>10.3</u>	<u>10.4</u>	<u>10.3</u>	<u>10.4</u>	<u>10.6</u>
PH, UNITS	<u>7.4</u>	<u>7.5</u>	<u>7.5</u>	<u>7.5</u>	<u>7.5</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>555</u>	<u>552</u>	<u>568</u>	<u>561</u>	<u>570</u>

- SAMPLE OBSERVATIONS
- CLEAR
  - CLOUDY when bar 25
  - COLORED
  - TURBID
  - ODOR
  - OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER     

SAMPLING  EQUIPMENT ID ISCO #      GRUNDEOS#  2"  4" #     

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	/ / /	
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1626 / /	0222501C
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1686 / /	0222301C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1687 / /	0703101C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1688 / /	
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1689 / /	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>	/ / /	
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>	/ / /	
TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL		<input type="checkbox"/>	/ / /	
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY		<input type="checkbox"/>	1690 / /	0703101C
VOC UM17	NO	NCL, 4 DEG C (3)40 ML VIAL		<input type="checkbox"/>	1691 / 1692 / 1693	0212201C
BN/A UM16	NO	4 DEG C (2) 1 L AG		<input type="checkbox"/>	1694 / 1695	0125101C
NG 99	NO	4 DEG C 1 L AG		<input type="checkbox"/>	1696 / /	
NAM UN06	NO	4 DEG C 1 L AG		<input type="checkbox"/>	1697 / /	
DNT UW26	NO	4 DEG C 1 L AG		<input type="checkbox"/>	1698 / /	
TPH USEPA 418.1	NO	H2SO4 TO pH<2 1 L GWM		<input type="checkbox"/>	/ / /	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- used volumes from development

SIGNATURE: [Signature]

RECEIVED BY: Nancy E. [Signature]



grd. elev. = 775.2 riser elev. = 888.65 GW elev. = 775.12

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

RPM8901

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.12.91

SITE ID RPM-89-01

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1100 END 1230

PROGRAM C

WEATHER rain, 40's

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.61 FT

PROTECTIVE CASING/WELL DIFF.

- .18 FT

WELL DEPTH 124± FT

MEASURED

WATER DEPTH 113.53 FT

HISTORICAL

WELL DIAMETER 2 INCH

GROUNDWATER ELEVATION (BGS)

111.11

HEIGHT OF WATER COLUMN 11 FT

.16 GAL/FT (2 IN)  
.65 GAL/FT (4 IN)=  
1.5 GAL/FT (6 IN)  
GAL/FT (IN)

18 GAL/VOL

90 TOTAL GAL PURGED (91)

WELL INTEGRITY:

PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: cap

YES NO N/A

PURGE H2O CONTAINED? YES NO

WELL MATERIAL PVC SS

AMBIENT AIR 0.3 PPM

WELL MOUTH 0.3 PPM

**PURGE DATA**

PURGE VOLUME	at 18 GAL	at 36 GAL	at 54 GAL	at 72 GAL	at 90 GAL
TEMP, DEG C	N/A	11.1	12.9	11.0	12.7
pH, UNITS	N/A	7.5	7.6	7.0	7.6
SPECIFIC CONDUCTIVITY umhos/cm	N/A	480	486	476	474

**SAMPLE OBSERVATIONS**

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BALLER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS W #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2			1660	022280.C
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1660	022280.C
NI-T TF10	YES	H2SO4 TO pH<2	500 ML POLY		1661	070310.C
CL TT08	YES	4 DEG C	500 ML POLY		1662	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1663	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		1664	070310.C
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1665	021230.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1666	
NG 99	NO	4 DEG C	1 L AG		1667	022810.C
NAM UN06	NO	4 DEG C	1 L AG		1670	
DNT UW26	NO	4 DEG C	1 L AG		1671	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		1672	

**NOTES**

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- see attached for volumes  
- tremendous air pressure coming out of well. cap present, but was hanging on bucking post

SIGNATURE: Nancy E. Roripa  
RECEIVED BY: Nancy E. Roripa

grl. elev. = 875.0

riser elev. = 874.76

GW elev. = 775.02

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 01 OF 01

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

RPM3902

PROJECT USATHANA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.12.91

SITE ID RPM-89-02

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0800 END 1000

PROGRAM C

WEATHER Rain 41

### WATER LEVEL / WELL DATA

WELL DEPTH 144 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.07 FT

PROTECTIVE CASING/WELL DIFF. -0.19 FT

WATER DEPTH 94.74 FT

.16 GAL/FT (2 IN)  
.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)  
GAL/FT (IN)

24 GAL/VOL

WELL DIAMETER 2 INCH 4 INCH 6 INCH

GROUNDWATER ELEVATION (BGD) 97.86

HEIGHT OF WATER COLUMN 14.66 FT

121 TOTAL GAL PURGED 121 gal

WELL INTEGRITY: PROT. CASING SECURE YES NO N/A  
CONCRETE COLLAR INTACT YES NO N/A  
WELL LOCKED YES NO N/A  
OTHER: CAP

PURGE H2O CONTAINED? YES NO

WELL MATERIAL PVC SS

AMBIENT AIR 1.5 PPM

WELL MOUTH 2.0 PPM

### PURGE DATA

PURGE VOLUME	22 GAL	48 GAL	00 GAL	55 GAL	121 GAL
TEMP, DEG C	10.1	10.5	10.4	10.3	10.3
pH, UNITS	8.3	8.27	8.3	8.34	8.24
SPECIFIC CONDUCTIVITY umhos/cm	650	650	650	637	652

SAMPLE OBSERVATIONS: CLEAR, CLOUDY, COLORED, TURBID, ODOR, OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING: PERISTALTIC PUMP, SUBMERSIBLE PUMP, BAILER, PVC/SILICON TUBING, IN-LINE/DISPOSABLE FILTER, OTHER

EQUIPMENT ID: ISCO #, GRUNDFOS #, 2" 4" #

DECON FLUIDS USED: POTABLE WATER, LIQUINOX, STEAM CLEANING

WATER LEVEL EQUIP. USED: ELECTRIC COND. PROBE, FLOAT ACTIVATED, PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	H2SO4 TO pH<2	500 ML POLY			
CL	YES	4 DEG C	500 ML POLY			
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GUM			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-see attached for volumes

SIGNATURE: *[Signature]*

RECEIVED BY: *[Signature]*

grd elev. = 861.5

MSPR elev. = 862.77

GW elev. = 776.04

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

PROJECT USATHAMA-BAAP

FIELD SAMPLING NUMBER NPM87011

SITE ID NPM-87-011

SITE TYPE WELL

SAMPLING DATE 11-25-91

LOCATION ACTIVITY START 0745 END 0900

JOB NUMBER 6853-04

FILE NAME CGW

PROGRAM C

WEATHER (11/25, 10'S)

### WATER LEVEL / WELL DATA

WELL DEPTH 100.43 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.7 FT

PROTECTIVE CASING/WELL DIFF. -0.32 FT

WATER DEPTH 86.73 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 85.35

HEIGHT OF WATER COLUMN 13.70 FT X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

22.6 GAL/VOL  
113 TOTAL GAL PURGED

WELL INTEGRITY: YES  NO  N/A   
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER:

PURGE H2O CONTAINED? YES  NO

WELL MATERIAL PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

### PURGE DATA

	08:15	08:19.5	08:24	08:28.5	08:33
PURGE VOLUME	22 GAL	45 GAL	67 GAL	90 GAL	113 GAL
TEMP, DEG C	9.1	10.0	9.8	10.3	10.2
PH, UNITS	7.5	7.0	7.0	7.0	7.0
SPECIFIC CONDUCTIVITY umhos/cm	970	976	667	670	673

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS# X  
22" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS Lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TDC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GLW			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- see attached for volume calculations

SIGNATURE: [Signature]

RECEIVED BY: Nancy E. Kspa

rd. elev. = 908.32

riser elev. = 913.50

GW elev. = 777.23

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

NAN8101A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID NAN-81-01A

JOB NUMBER 6853-04

SAMPLING DATE 12/1/91

LOCATION ACTIVITY START 1245 END 1345

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 40's

### WATER LEVEL / WELL DATA

WELL DEPTH 144 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.33 FT

PROTECTIVE CASING/WELL DIFF. +0.31 FT

WATER DEPTH 130.27 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 134.25

HEIGHT OF WATER COLUMN 8 FT  
16 GAL/FT (2 IN)  
6.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)

15 GAL/VOL

75 TOTAL GAL PURGED

(75)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: CAP

PURGE H2O CONTAINED? YES  NO

WELL MATERIAL PVC  SS

AMBIENT AIR 0.4 PPM

WELL MOUTH 0.6 PPM

### PURGE DATA

PURGE VOLUME	05	08	08	08	08
	15 GAL	30 GAL	45 GAL	60 GAL	75 GAL
TEMP, DEG C	10.3	10.3	10.4	10.4	10.7
pH, UNITS	7.9	7.8	7.7	7.7	7.6
SPECIFIC CONDUCTIVITY umhos/cm	635	639	641	639	639

SAMPLE OBSERVATIONS  
 CLEAR (pump)  
 CLOUDY  
 COLORED  
 TURBID (bubbler)  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

EQUIPMENT ID  
ISCO #  
GROUNDOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	HNO3 TO pH<2			1768	022801C
NA	SS16	HNO3 TO pH<2			↓	
CD	SS16	HNO3 TO pH<2			↓	
CR	SS16	HNO3 TO pH<2			↓	
HG	S803	HNO3 TO pH<2			↓	
PB	S024	HNO3 TO pH<2			1768	022801C
NI	SS16	HNO3 TO pH<2			↓	
BA	SS16	HNO3 TO pH<2			↓	
HARD	USEPA 130.2	HNO3 TO pH<2			1768	022801C
NIT	TF10	H2SO4 TO pH<2	500 ML POLY		1769	0705101C
CL	TT08	4 DEG C	500 ML POLY		1770	
S04	TT08	4 DEG C			↓	
ALK	USEPA 310.1	4 DEG C	500 ML POLY		1771	
TDS	USEPA 160.1	4 DEG C			↓	
TOC	USEPA 415.1	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	HCL, 4 DEG C	(3) 40 ML VIAL		1772 / 1773 / 1774	022801C
BN/A	UM16	4 DEG C	(2) 1 L AG			
NG	99	4 DEG C	1 L AG			
NAM	UN06	4 DEG C	1 L AG			
DNT	UN26	4 DEG C	1 L AG			
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, S024, S803, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, S024, S803, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: *[Signature]*

RECEIVED BY: *[Signature]*

2nd elev = ~912.5 riser elev. = 914.99 GW elev. = 777.14

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

NAN8102B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID NAN-81-02B

JOB NUMBER 6853-04

SAMPLING DATE 12-11-91

LOCATION ACTIVITY START 0800 END 0845

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 40's

**WATER LEVEL / WELL DATA**

WELL DEPTH 145 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 1.14 FT

PROTECTIVE CASING/WELL DIFF. 6.50 FT

WATER DEPTH 137.65 FT

WELL DIAMETER  4 INCH

GROUNDWATER ELEVATION (BGS) 137.21

HEIGHT OF WATER COLUMN 7.15 FT

0.65 GAL/FT (4 IN) 40 GAL/VOL

1.5 GAL/FT (6 IN) 30 TOTAL GAL PURGED 30

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 OTHER: CWP

PURGE H2O CONTAINED? YES  NO

WELL MATERIAL PVC  SS

AMBIENT AIR 0.4 PPM

WELL MOUTH 0 A PPM

**PURGE DATA**

PURGE VOLUME	0.6 GAL	1.0 GAL	1.5 GAL	2.4 GAL	3.0 GAL
TEMP, DEG C	9.8	10.5	10.7	10.8	10.8
pH, UNITS	8.0	7.8	7.7	7.6	7.5
SPECIFIC CONDUCTIVITY umhos/cm	258	407	724	723	737

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
 PERISTALTIC PUMP   
 SUBMERSIBLE PUMP   
 BAILER   
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER

EQUIPMENT ID ISCO # \_\_\_\_\_  
 DECON FLUIDS USED POTABLE WATER   
 LIQUINOX   
 STEAM CLEANING

WATER LEVEL EQUIP. USED ELECTRIC COND. PROBE   
 FLOAT ACTIVATED   
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED \_\_\_\_\_

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			1775 / 0222801C
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			1775 / 0222801C
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2			1775 / 0222801C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	1776	0703121C
CL TT08	YES	4 DEG C	500 ML POLY	1777	
SO4 TT08	YES	4 DEG C			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	1778	
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C (3)40 ML VIAL		1779	1780 / 1781 / 0212301C
BN/A UM16	NO	4 DEG C (2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG		
NAM UN06	NO	4 DEG C	1 L AG		
DNT UW26	NO	4 DEG C	1 L AG		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE *[Signature]*  
 RECEIVED BY: Nancy E. Potea

2nd elev = 913.1

1st elev = 915.21

GW elev. = 777.04

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

NAN 8103B

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID NAN-81-03B

JOB NUMBER

6853-04

SAMPLING DATE

12-11-91

LOCATION ACTIVITY START 0900 END 0945

PROGRAM

C

FILE NAME

CGW

WEATHER

Sunny, 40°S

### WATER LEVEL / WELL DATA

WELL DEPTH 145 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.02 FT

PROTECTIVE CASING/WELL DIFF.

10.31 FT

WATER DEPTH 132.17 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

137.46

HEIGHT OF WATER COLUMN 6.83 FT

1.6 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

GAL/VOL

0

TOTAL GAL PURGED

30

WELL INTEGRITY: PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.4 PPM

WELL MOUTH 0.4 PPM

### PURGE DATA

PURGE VOLUME	16 GAL	12 GAL	18 GAL	24 GAL	30 GAL
TEMP, DEG C	10.1	10.8	11.1	11.0	11.0
pH, UNITS	7.4	7.8	7.7	7.7	7.7
SPECIFIC CONDUCTIVITY umhos/cm	519	520	520	520	521

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GROUNDOS# \_\_\_\_\_  
2" 4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2			1782	0222601C
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2			1782	0222601C
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1782	0222601C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1783	0203101C
CL	YES	4 DEG C	500 ML POLY		1784	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		1785	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	NCL, 4 DEG C	(3)40 ML VIAL			
BN/A	NO	4 DEG C	(2) 1 L AG		1786 / 1787 / 1788	0212301C
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICF)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICF)

-used historical volumes

SIGNATURE:

RECEIVED BY:

Jancy E. [Signature]

ord elev = 913.2

riser elev. = 915.02

GW elev. = 777.10

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **NAN8103C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **NAN-81-03C**

JOB NUMBER **6853-04**

SAMPLING DATE **12-11-91**

LOCATION ACTIVITY **START 1000 END 1130**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **Sunny, 40° S**

### WATER LEVEL / WELL DATA

WELL DEPTH **170** FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) **1.38** FT

PROTECTIVE CASING/WELL DIFF. **-0.31** FT

WATER DEPTH **137.92** FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH  
GROUNDWATER ELEVATION (BGS) **136.85**

HEIGHT OF WATER COLUMN **32.08** FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN) = **22** GAL/VOL  
 1.5 GAL/FT (6 IN) = **110** TOTAL GAL PURGED  
 GAL/FT ( \_ IN)

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: \_\_\_\_\_

PURGE H2O CONTAINED? YES  NO   
WELL MATERIAL  PVC  SS

AMBIENT AIR **0.4** PPM  
WELL MOUTH PPM

### PURGE DATA

	21	29	37	45	53
PURGE VOLUME	<b>22</b> GAL	<b>44</b> GAL	<b>66</b> GAL	<b>88</b> GAL	<b>110</b> GAL
TEMP, DEG C	<b>10.9</b>	<b>11.4</b>	<b>11.5</b>	<b>11.7</b>	<b>11.4</b>
pH, UNITS	<b>7.8</b>	<b>7.8</b>	<b>7.7</b>	<b>7.7</b>	<b>7.7</b>
SPECIFIC CONDUCTIVITY umhos/cm	<b>780</b>	<b>798</b>	<b>822</b>	<b>797</b>	<b>796</b>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDEFS# \_\_\_\_\_  
2" 4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			1789	0222801C
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2			1789	0222801C
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1789	0222801C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1790	0703101C
CL TT08	YES	4 DEG C	500 ML POLY		1791	
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1792	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		1793	0212301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UN26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICF)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICF)

-used historical volumes

SIGNATURE: *[Signature]*

RECEIVED BY: *Nancy E. Poira*

amt 2220 = 922.1

rise elev = 925.91

GW elev = 777.33

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP      FIELD SAMPLING NUMBER: NAN-81-04B

SITE ID: NAN-81-04B      SITE TYPE: WELL      SAMPLING DATE: 12/1/91

LOCATION ACTIVITY: START 1500 END 1545      JOB NUMBER: 6853-04      FILE NAME: CGW

PROGRAM: C      WEATHER: sunny, 40° S

**WATER LEVEL / WELL DATA**

WELL DEPTH: 160 FT       MEASURED       HISTORICAL      TOP OF WELL TOP OF CASING: 1.45 FT      PROTECTIVE CASING STICK-UP (FROM GROUND): 0.32 FT

WATER DEPTH: 148.58 FT      WELL DIAMETER: 6 INCH      GROUNDWATER ELEVATION (BGS): 147.45

HEIGHT OF WATER COLUMN: 11 FT       16 GAL/FT (2 IN)      5 GAL/VOL       65 GAL/FT (4 IN)      25 TOTAL GAL PURGED      25

PURGE H2O CONTAINED?      YES  NO       WELL MATERIAL:  PVC       SS      AMBIENT AIR: 0.4 PPM      WELL MOUTH: 0.4 PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: cap

**PURGE DATA**

PURGE VOLUME	@ 5 GAL	@ 10 GAL	@ 15 GAL	@ 20 GAL	@ 25 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	<u>11.4</u>	<u>11.4</u>	<u>11.8</u>	<u>12.0</u>	<u>12.2</u>	<input checked="" type="checkbox"/> CLEAR
PH, UNITS	<u>7.4</u>	<u>7.8</u>	<u>7.7</u>	<u>7.7</u>	<u>7.7</u>	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	<u>617</u>	<u>614</u>	<u>605</u>	<u>545</u>	<u>510</u>	<input type="checkbox"/> COLORED
						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING:  PERISTALTIC PUMP      EQUIPMENT ID: ISCO #      DECON FLUIDS USED:  POTABLE WATER      WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE

SAMPLING:  SUBMERSIBLE PUMP      GRUNDEOS#: 2" 4" #      LIQUINOX      FLOAT ACTIVATED

BAILER:       STEAM CLEANING      PRESSURE TRANSDUCER

PVC/SILICON TUBING      IN-LINE/DISPOSABLE FILTER      NUMBER OF FILTERS USED: 1

OTHER:     

**ANALYTICAL PARAMETERS**

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			<u>1796</u>	<u>0222801C</u>
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	S803	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2			<u>1796</u>	<u>0222801C</u>
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			<u>1796</u>	<u>0222801C</u>
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>1797</u>	<u>0222801C</u>
CL	TT08	YES	4 DEG C	500 ML POLY		<u>1798</u>	
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>1799</u>	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		<u>1800</u>	<u>0222801C</u>
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		<u>1801</u>	<u>0222801C</u>
NG	99	NO	4 DEG C	1 L AG		<u>1802</u>	<u>0222801C</u>
NAM	UN06	NO	4 DEG C	1 L AG			
DNT	UW26	NO	4 DEG C	1 L AG			
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GLW			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: William P. ...  
 RECEIVED BY: Nancy E. ...



917  
elev. = 922.8

riser  
elev. = 925.25

GW  
elev. = 777.14

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

NAN8104C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.11.91

SITE ID NAN-81-04C

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1600 END 1700

PROGRAM C

WEATHER Sunny 40°S

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.12 FT

PROTECTIVE CASING/WELL DIFF. -0.36 FT

WELL DEPTH 166 FT

MEASURED  
 HISTORICAL

WATER DEPTH 148.11 FT

WELL DIAMETER 2 INCH  
4 INCH  
6 INCH

GROUNDWATER ELEVATION (BGS) 146.35

HEIGHT OF WATER COLUMN 18 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( \_ IN)

19 GAL/VOL

TOTAL GAL PURGED 95

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.4 PPM

WELL MOUTH 0.4 PPM

### PURGE DATA

PURGE VOLUME	19 GAL	39 GAL	57 GAL	76 GAL	95 GAL
TEMP, DEG C	12.5	10.7	10.7	10.4	10.6
pH, UNITS	8.0	7.8	7.0	7.8	7.8
SPECIFIC CONDUCTIVITY umhos/cm	402	467	467	467	470

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING  
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEDS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			1803	0222501C
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2			1803	0222501C
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1803	0222501C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1804	0703101C
CL TT08	YES	4 DEG C	500 ML POLY		1805	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1806	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1807	0222301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GLM			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:1CP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:1CP)

- used historical volumes  
- conc. around well all broken up.

SIGNATURE: *[Signature]*  
RECEIVED BY: Nancy E. Pota

7th elev. = 924.3

riser elev. = 925.99

GW elev. = 860.36

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER OPM 8701

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID OPM-89-01

JOB NUMBER 6853-04

SAMPLING DATE 12.5.91

LOCATION ACTIVITY START 1200 END 1630

PROGRAM C

FILE NAME CGW

WEATHER SNOW 20°F  
*windy*

### WATER LEVEL / WELL DATA

WELL DEPTH 88 FT

TOP OF WELL  
 MEASURED  
 HISTORICAL

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.98 FT

PROTECTIVE CASING/WELL DIFF. -0.25 FT

WATER DEPTH 65.63 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 63.90

HEIGHT OF WATER COLUMN 22.37 FT

37 GAL/VOL  
34 TOTAL GAL PURGED

WELL INTEGRITY: PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
OTHER: LOP

YES NO N/A

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  AL  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

### PURGE DATA \*

PURGE VOLUME	<u>237</u> GAL	<u>274</u> GAL	<u>111</u> GAL	<u>198</u> GAL	<u>186</u> GAL
TEMP, DEG C					
pH, UNITS					
SPECIFIC CONDUCTIVITY umhos/cm					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED Brown  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP   
 SUBMERSIBLE PUMP   
 BAILER   
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDFOS# \_\_\_\_\_  
 2"  4"  # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CR	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> SO4	YES	4 DEG C				
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> TDS	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC	NO	MCL, 4 DEG C	(3)40 ML VIAL			
<input checked="" type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG			
<input checked="" type="checkbox"/> NG	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> DNT	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GMM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- see attached for volume calculations  
 - PUMPED DRY @ 34 gallons. SAMPLED AFTER RECHARGE  
 \*No readings acquired - H2O ran out before a readings was obtained

SIGNATURE: Jane E. Cote  
 RECEIVED BY: Nancy E. [unclear]

grid elev. = 877.6

riser elev. = 879.46

GW elev. = 778.02

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

OPM89102

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID OPM89102

JOB NUMBER 6853-04

SAMPLING DATE 11-24-91

LOCATION ACTIVITY START 1300 END 1400

PROGRAM C

FILE NAME CGW

WEATHER SUNNY 20°

### WATER LEVEL / WELL DATA

WELL DEPTH 113.54 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) 2.10 FT

PROTECTIVE CASING/WELL DIFF. -0.15 FT

WATER DEPTH 101.44 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH GROUNDWATER ELEVATION (BGS) 99.49

HEIGHT OF WATER COLUMN 12.10 FT

.16 GAL/FT (2 IN)  
 2.65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

32.6 GAL/VOL

163 TOTAL GAL PURGED (155)

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: casing latch broken

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR PPM

WELL MOUTH PPM

### PURGE DATA

	1:17	1:23	1:29	1:35	1:41
PURGE VOLUME	233 GAL	266 GAL	299 GAL	232 GAL	263 GAL
TEMP, DEG C	8.6	8.9	8.9	9.1	9.4
PH, UNITS	6.9	6.6	6.7	6.7	6.6
SPECIFIC CONDUCTIVITY umhos/cm	251	459	462	460	466

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY slight  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
SUBMERSIBLE PUMP  GRUNDFOS#  \_\_\_\_\_  
BAILER  2" 4" # \_\_\_\_\_  
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1535	022280.C
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1535	022280.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1536	070310.C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1537	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1538	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1539	1540 / 1541 / 022280.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-- see calculations for volumes

SIGNATURE: *Nancy E. Rofa*

RECEIVED BY: Nancy E. Rofa

Grnd. elev. = 928.2 riser elev. = 929.75 GW elev. = 777.00

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE      OF     

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

OPM8903

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID OPM-89-03

JOB NUMBER 6853-04

SAMPLING DATE 12.6.91

LOCATION ACTIVITY START 0930 END 1130

PROGRAM C

FILE NAME CGW

WEATHER snow, 20°F  
*windy*

**WATER LEVEL / WELL DATA**

WELL DEPTH 162 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.15 FT

PROTECTIVE CASING/WELL DIFF. -0.2 FT

WATER DEPTH 152.75 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 151.1

HEIGHT OF WATER COLUMN 9.25 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (8 IN)

1.0 GAL/VOL  
60 TOTAL GAL PURGED

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

**PURGE DATA**

PURGE VOLUME	<u>16</u> GAL	<u>32</u> GAL	<u>48</u> GAL	<u>64</u> GAL	<u>80</u> GAL
TEMP, DEG C	<u>25</u>	<u>9.7</u>	<u>10.0</u>	<u>9.9</u>	<u>9.5</u>
pH, UNITS	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>454</u>	<u>412</u>	<u>475</u>	<u>473</u>	<u>457</u>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

EQUIPMENT ID  
ISCO #       
GRUNDFOS#       
2" 4" #     

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1542	0222801C
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1542	022501C
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1543	0205101C
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1544	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1545	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C (3)40 ML VIAL		<input checked="" type="checkbox"/>	1546	1547
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C (2) 1 L AG		<input checked="" type="checkbox"/>	1548	0213301C
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2 1 L GWM		<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/N:100)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/N:100)

- see attached for volume calculations

SIGNATURE: *[Signature]*  
RECEIVED BY: *Nancy E. Pa*

3rd. elev = 215.1

riser elev = 877.04

GW elev = 785.56

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

01AM9101

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID 01AM-91-01

JOB NUMBER 6853-04

SAMPLING DATE 12-11-91

LOCATION ACTIVITY START 0815 END 0930

PROGRAM C

FILE NAME CGW

WEATHER CLEAR 30'

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

24.3 ± FT

PROTECTIVE CASING/WELL DIFF. -0.13 FT

WELL DEPTH 97.92 FT

MEASURED  
 HISTORICAL

WATER DEPTH 91.48 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION 89.18

HEIGHT OF WATER COLUMN 6.44 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_\_\_ IN)

11 GAL/VOL

TOTAL GAL PURGED 55

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: CAP

PURGE H2O CONTAINED? YES  NO

WELL MATERIAL PVC  SS

AMBIENT AIR \_\_\_ PPM

WELL MOUTH \_\_\_ PPM

### PURGE DATA

PURGE VOLUME	@ 11 GAL	@ 22 GAL	@ 33 GAL	@ 44 GAL	@ 55 GAL
TEMP, DEG C	10.2	10.1	10.3	10.2	10.2
pH, UNITS	7.4	7.4	7.4	7.4	7.4
SPECIFIC CONDUCTIVITY umhos/cm	433	408	409	415	416

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING  
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			1831	022501C
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG S803	YES	HNO3 TO pH<2				
PB S024	YES	HNO3 TO pH<2			1831	022501C
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1831	022501C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1832	070310C
CL TT08	YES	4 DEG C	500 ML POLY		1833	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1834	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		1835	021201C
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UN26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used volumes from development

SIGNATURE: RIGGS/AL/AB  
RECEIVED BY: Nancy E. Poirier

grd. elev. = 872.2

ruser elev. = 874.38

GW elev. = 786.01

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE   

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 01AM8901

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.11.91

SITE ID 01AM-89-01

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1000 END 1130

PROGRAM C

WEATHER CLEAR 30°

### WATER LEVEL / WELL DATA

WELL DEPTH 100.48 FT  MEASURED  HISTORICAL  TOP OF WELL TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) 2.42 FT PROTECTIVE CASING/WELL DIFF. -.11 FT

WATER DEPTH 88.37 FT WELL DIAMETER  2 INCH  4 INCH  6 INCH GROUNDWATER ELEVATION (BGS) 86.06

HEIGHT OF WATER COLUMN 12.11 FT X  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (IN) 20 GAL/VOL 100 TOTAL GAL PURGED

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR    PPM WELL MOUTH    PPM WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A CONCRETE COLLAR INTACT  YES  NO  N/A WELL LOCKED  YES  NO  N/A OTHER: CAP

### PURGE DATA

PURGE VOLUME	20 GAL	40 GAL	60 GAL	80 GAL	100 GAL
TEMP, DEG C	10.2	10.3	10.4	10.4	10.5
pH, UNITS	7.3	7.3	7.3	7.3	7.3
SPECIFIC CONDUCTIVITY umhos/cm	601	617	610	616	617

SAMPLE OBSERVATIONS

CLEAR

CLOUDY

COLORED

TURBID

ODOOR

OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID  ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDFOSS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

RECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1810	022801C
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG S803	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1810	022801C
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1810	022801C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1811	070310C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1812	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1813	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3) 4 ML VIAL		<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY		<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C (3) 4 ML VIAL		<input checked="" type="checkbox"/>	1814 / 1815 / 1816	022801C
BN/A UM16	NO	4 DEG C (2) 1 L AG		<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
DNT UN26	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2 1 L GWM		<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

- see attached for volumes

SIGNATURE: *Paul G. Smith / JPC*

RECEIVED BY: *Nancy E*

Flow elev. = 872.4

Riser elev. = 874.91

GW elev. = 785.71

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

0AM8902

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.11.91

SITE ID 0AM-89-02

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1230 END 1330

PROGRAM C

WEATHER SUNNY 30°F

### WATER LEVEL / WELL DATA

WELL DEPTH 100.96 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.65 FT

PROTECTIVE CASING/WELL DIFF. -.27 FT

WATER DEPTH 89.20 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 86.82

HEIGHT OF WATER COLUMN 11.76 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (      IN)

19.5 GAL/VOL

100 TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR - PPM WELL MOUTH - PPM

### PURGE DATA

PURGE VOLUME	@ 20 GAL	@ 40 GAL	@ 60 GAL	@ 80 GAL	@ 100 GAL
TEMP, DEG C	10.8	10.9	11.1	11.1	11.0
pH, UNITS	7.4	7.3	7.3	7.2	7.2
SPECIFIC CONDUCTIVITY umhos/cm	623	621	609	614	626

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			1817	022280C
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2			1817	022280C
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1817	022280C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1818	070310C
CL TT08	YES	4 DEG C	500 ML POLY		1819	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1820	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1821	022280C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1822	022280C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UN26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- see attached for calculations

SIGNATURE: PerCS H/ABC

RECEIVED BY: Nancy E. Kofa

grd elev = 874.27

riser elev = 874.27

GW elev = 785.59

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE   

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

FTM 89 01

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID FTM-89-01

JOB NUMBER

6853-04

SAMPLING DATE

12-11-91

LOCATION ACTIVITY START 1530 END 1630

PROGRAM

C

FILE NAME

CGW

WEATHER

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE  
 TOP OF CASING CASING STICK-UP (FROM GROUND)

2.10 FT

PROTECTIVE CASING/WELL DIFF. - .20 FT

WELL DEPTH 99.32 FT

MEASURED  
 HISTORICAL

WATER DEPTH 88.68 FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

86.78

HEIGHT OF WATER COLUMN

10.64 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN) = 18 GAL/VOL  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

18 GAL/VOL

90 TOTAL GAL PURGED

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR - PPM

WELL MOUTH - PPM

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: CAP

### PURGE DATA

PURGE VOLUME

18 GAL

36 GAL

54 GAL

72 GAL

90 GAL

TEMP, DEG C

11.0

11.2

11.2

11.1

11.0

pH, UNITS

7.0

7.0

7.0

7.1

7.1

SPECIFIC CONDUCTIVITY umhos/cm

2410

2400

2370

2420

2370

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID

ISCO #  
GRUNDEOS#  
 2"  4" #

DECON FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

1

### ANALYTICAL PARAMETERS

	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/>	PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/>	TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/>	CA	YES	HNO3 TO pH<2				
<input type="checkbox"/>	NA	YES	HNO3 TO pH<2				
<input type="checkbox"/>	CD	YES	HNO3 TO pH<2				
<input type="checkbox"/>	CR	YES	HNO3 TO pH<2				
<input type="checkbox"/>	HG	YES	HNO3 TO pH<2				
<input type="checkbox"/>	PB	YES	HNO3 TO pH<2				
<input type="checkbox"/>	NI	YES	HNO3 TO pH<2				
<input type="checkbox"/>	BA	YES	HNO3 TO pH<2				
<input type="checkbox"/>	HARD	YES	HNO3 TO pH<2	500 ML POLY		2218	0703101C
<input type="checkbox"/>	NIT	YES	H2SO4 TO pH<2	500 ML POLY		2216	
<input type="checkbox"/>	CL	YES	4 DEG C	500 ML POLY		2217	
<input type="checkbox"/>	SO4	YES	4 DEG C				
<input type="checkbox"/>	ALK	NO	4 DEG C	500 ML POLY		2219	
<input type="checkbox"/>	TDS	NO	4 DEG C				
<input type="checkbox"/>	TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/>	NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/>	VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		2220	0212301C
<input type="checkbox"/>	BN/A	NO	4 DEG C	(2) 1 L AG		2223	0128101C
<input type="checkbox"/>	MG	NO	4 DEG C	1 L AG			
<input type="checkbox"/>	NAM	NO	4 DEG C	1 L AG			
<input type="checkbox"/>	DNT	NO	4 DEG C	1 L AG			
<input type="checkbox"/>	TPH	NO	H2SO4 TO pH<2	1 L GWM		2225	0714001C

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- see attached for volumes

SIGNATURE: *Rebecca H. [unclear]*

RECEIVED BY: *Nancy E. [unclear]*



and elev = 822.0 riser elev. = 830.04 GW elev. = 742.91

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_ OF \_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

PBN9101C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-91-01C

JOB NUMBER 6853-04

SAMPLING DATE 12-15-91

LOCATION ACTIVITY START 0915 END 1100

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 20°F windy

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.28 FT  
 PROTECTIVE CASING/WELL DIFF. -0.18 FT  
 WELL DEPTH 154.50 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 27.13 FT  
 WELL DIAMETER 2 INCH  
 4 INCH  
 6 INCH  
 GROUNDWATER ELEVATION (BGS) 85.27  
 HEIGHT OF WATER COLUMN 67 FT  
 0.16 GAL/FT (2 IN)  
 2.65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)  
 66 GAL/VOL  
 332 TOTAL GAL PURGED (332)  
 PURGE H2O CONTAINED? YES  NO   
 WELL MATERIAL PVC  SS   
 AMBIENT AIR 0 PPM WELL MOUTH 0 PPM  
 WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT   
 WELL LOCKED   
 OTHER:

**PURGE DATA 0945**

	0945	0959	1013	1027	1041	1055
PURGE VOLUME	19 min @ 66 GAL	@ 132 GAL	@ 198 GAL	@ 264 GAL	@ 332 GAL	
TEMP, DEG C	8.8	8.4	8.2	8.7	9.0	
PH, UNITS	7.3	7.5	7.6	7.6	7.6	
SPECIFIC CONDUCTIVITY umhos/cm	575	584	572	580	572	

SAMPLE OBSERVATIONS: CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED: POTABLE WATER  LIQUINOX  STEAM CLEANING   
 WATER LEVEL EQUIP. USED: ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER   
 NUMBER OF FILTERS USED: i

**ANALYTICAL PARAMETERS**

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	S803	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2				
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL	TT08	YES	4 DEG C	500 ML POLY			
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A	UM16	NO	4 DEG C	(2) 1 L AG			
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG			
DNT	UN26	NO	4 DEG C	1 L AG			
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:1CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:1CP)

-used volumes from development

SIGNATURE: [Signature] / PVC  
 RECEIVED BY: Nancy E. Rora

ant. elev = 819.0

river elev. = 821.20

GW elev. = 742.63

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN 91-02B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-91-02B

JOB NUMBER 6853-04

SAMPLING DATE 12.7.91

LOCATION ACTIVITY START 1300 END 1430

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 40's

### WATER LEVEL / WELL DATA

WELL DEPTH 123.7 FT

MEASURED  
 HISTORICAL

TCP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.70 FT

PROTECTIVE CASING/WELL DIFF. -0.21 FT

WATER DEPTH 73.57 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 76.38

HEIGHT OF WATER COLUMN 41.2 FT x  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

4.2 GAL/VOL

210 TOTAL GAL PURGED (210)

WELL INTEGRITY: PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR \_\_\_\_\_ PPM

WELL MOUTH \_\_\_\_\_ PPM

### PURGE DATA

PURGE VOLUME	@ 4.2 GAL	@ 34 GAL	@ 126 GAL	@ 165 GAL	@ 210 GAL
TEMP, DEG C	10.1	9.8	10.0	10.0	10.0
PH, UNITS	5.5	8.05	8.12	5.14	5.14
SPECIFIC CONDUCTIVITY umhos/cm	251	774	779	227	225

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDFOS # \_\_\_\_\_  
2" 4" # \_\_\_\_\_

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML PCLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- used volumes from development  
\* changed order in field. Sampled PBN-91-02B at 1600. No labels changed.

SIGNATURE: Laura Cite RR

RECEIVED BY: Nancy E. R

and elev. = 819.9

riser elev. = 821.92

GW elev. = 742.76

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN9102C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-91-02C

JOB NUMBER 6853-04

SAMPLING DATE 12-7-91

LOCATION ACTIVITY START 1445 1315 END 1600

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 40's

### WATER LEVEL / WELL DATA

WELL DEPTH 163.6 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) 2.32 FT

PROTECTIVE CASING/WELL DIFF. -0.20 FT

WATER DEPTH 79.16 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (GGS) 77.04

HEIGHT OF WATER COLUMN 84.44 FT x  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

SS GAL/VOL 427 TOTAL GAL PURGED 427

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER:

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 1.5 PPM

WELL MOUTH 1.6 PPM

### PURGE DATA

PURGE VOLUME	13:52	13:49	14:01	14:23	14:50
	@ 55 GAL	@ 170 GAL	@ 225 GAL	@ 340 GAL	@ 427 GAL
TEMP, DEG C	10.3	10.3	10.0	10.2	10.1
pH, UNITS	8.27	6.53	5.41	8.30	8.32
SPECIFIC CONDUCTIVITY umhos/cm	50	104	146	144	141

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP

SAMPLING:  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAITER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID

ISCO #  
GRUNDEFS#  
 2" 4" #

RECON FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		SS lot #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA	YES	HNO3 TO pH<2			
NA	YES	HNO3 TO pH<2			
CD	YES	HNO3 TO pH<2		1874	022280:C
CR	YES	HNO3 TO pH<2			
HG	YES	HNO3 TO pH<2			
PB	YES	HNO3 TO pH<2			
NI	YES	HNO3 TO pH<2			
BA	YES	HNO3 TO pH<2			
HARD	YES	HNO3 TO pH<2		1874	022280:C
NIT	YES	H2SO4 TO pH<2	500 ML POLY	1875	070310:C
CL	YES	4 DEG C	500 ML POLY	1876	
SO4	YES	4 DEG C			
ALK	NO	4 DEG C	500 ML POLY	1877	
TDS	NO	4 DEG C			
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	1878	021230:C
BN/A	NO	4 DEG C	(2) 1 L AG	1821	022210:C
NG	NO	4 DEG C	1 L AG		
NAM	NO	4 DEG C	1 L AG		
DNT	NO	4 DEG C	1 L AG		
TPH	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used volumes from development  
\*changed order in field - sampled PBN-91-02C at 150. No labels changed

SIGNATURE: Jenny Cate RR

RECEIVED BY: Nancy E. Rofca

ord. elev. = 812.7 riser elev. = 814.72 GW elev. = 742.02

**ABB ENVIRONMENTAL SERVICES, INC.**

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER PBN91058

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-91-03B

JOB NUMBER 6853-04

SAMPLING DATE 12.14.91

LOCATION ACTIVITY START 1345 END 1500

PROGRAM C

FILE NAME CGW

WEATHER Sunny 16° W. wind chill

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 MEASURED  
 HISTORICAL  
 WELL DEPTH 108.30 FT  
 WATER DEPTH 72.70 FT  
 HEIGHT OF WATER COLUMN 35.60 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

GAL/VOL 41  
 TOTAL GAL PURGED 205

PROTECTIVE CASING/WELL DIFF. -0.19 FT  
 WELLS DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION (EGS) 70.79

PURGE H2O CONTAINED?  YES  NO  
 WELLS MATERIAL  PVC  SS  
 AMBIENT AIR 0 PPM  
 WELLS MOUTH 0 PPM

WELLS INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELLS LOCKED  YES  NO  N/A  
 OTHER: \_\_\_\_\_

**PURGE DATA**

	1411	1427	1435	1443	1451
PURGE VOLUME	241 GAL	262 GAL	123 GAL	264 GAL	220 GAL
TEMP, DEG C	7.7	8.4	8.7	8.6	9.0
PH, UNITS	7.9	7.9	7.7	7.7	7.6
SPECIFIC CONDUCTIVITY umhos/cm	571	549	577	564	587

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  
 SAMPLING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BALLER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDFOS # 7  
 2" 4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2				
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL	TT08	YES	4 DEG C	500 ML POLY			
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A	UM16	NO	4 DEG C	(2) 1 L AG			
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG			
DNT	UN26	NO	4 DEG C	1 L AG			
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GLM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: [Signature]  
 RECEIVED BY: Nancy E. [Signature]

Jct Elev = 512.3 riser elev. = 314.37 GW elev. = 742.10

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT USATHAMA-BAAP  
 SITE ID PBN-911-03C  
 LOCATION ACTIVITY START 1515 END 1645

FIELD SAMPLING NUMBER PBN91103C  
 SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C

SAMPLING DATE 12.14.91  
 FILE NAME CGW  
 WEATHER Sunny 16° Windy

### WATER LEVEL / WELL DATA

WELL DEPTH 154.2 FT MEASURED  HISTORICAL   
 WATER DEPTH 72.27 FT  
 HEIGHT OF WATER COLUMN 81.9 FT  
 PROTECTIVE CASING TOP OF WELL  TOP OF CASING   
 PROTECTIVE CASING/WELL DIFF. 1.95 ± FT  
 PROTECTIVE CASING/WELL DIFF. -0.14 FT  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION (BGS) 70.46  
 .16 GAL/FT (2 IN) 77.8 GAL/VOL  
 .65 GAL/FT (4 IN) =  
 1.5 GAL/FT (6 IN)  
 TOTAL GAL PURGED (387)  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: \_\_\_\_\_

### PURGE DATA

PURGE VOLUME	1526	1542	1558	1614	1631
PURGE VOLUME	276 GAL	256 GAL	234 GAL	312 GAL	340 GAL
TEMP, DEG C	8.7	8.5	8.8	8.7	8.3
PH, UNITS	7.8	7.8	7.5	7.8	7.3
SPECIFIC CONDUCTIVITY umhos/cm	482	485	481	488	482

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SAMPLING  SUBMERSIBLE PUMP  
 BAILER   
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 EQUIPMENT ID \_\_\_\_\_  
 ISCO # \_\_\_\_\_  
 GRUNDOS#  2"  4" # \_\_\_\_\_  
 RECON FLUIDS USED:  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		ESS 1st #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA	YES	HNO3 TO pH<2			
NA	YES	HNO3 TO pH<2			
CD	YES	HNO3 TO pH<2			
CR	YES	HNO3 TO pH<2			
HG	YES	HNO3 TO pH<2			
PB	YES	HNO3 TO pH<2			
NI	YES	HNO3 TO pH<2			
BA	YES	HNO3 TO pH<2			
HARD	YES	HNO3 TO pH<2			
NIT	YES	H2SO4 TO pH<2	500 ML POLY		
CL	YES	4 DEG C	500 ML POLY		
SO4	YES	4 DEG C	500 ML POLY		
ALK	NO	4 DEG C	500 ML POLY		
TDS	NO	4 DEG C			
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		
BW/A	NO	4 DEG C	(2) 1 L AG		
NG	NO	4 DEG C	1 L AG		
NAM	NO	4 DEG C	1 L AG		
DNT	NO	4 DEG C	1 L AG		
TPH	NO	H2SO4 TO pH<2	1 L GUM		

SAMPLE BOTTLE ID NUMBERS: 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900  
 BOTTLE IDs: 027280C, 027280C, 027310C, 02730C, 02730C

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- used historical volumes

SIGNATURE: [Signature]  
 RECEIVED BY: Nancy E. Kora

cont. elev. =

riser elev. = 831.53

GW elev. = 743.16

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**PBM90CID**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **PBM-90-CID**

JOB NUMBER **6853-04**

SAMPLING DATE **12.15.91**

LOCATION ACTIVITY **START 0900 END 1130**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **SUNNY 10  
WINDY**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **2.32** FT  
 PROTECTIVE CASING/WELL DIFF. **70.20** FT  
 WELL DEPTH **213.90** FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH **88.37** FT  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION (BGS) **86.25**  
 HEIGHT OF WATER COLUMN **25.53** FT  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)  
 TOTAL GAL PURGED **455**  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: \_\_\_\_\_

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **0** PPM

WELL MOUTH **0** PPM

PURGE DATA **0925 0953 1011 1029 1047 1105**

PURGE VOLUME	0925	0953	1011	1029	1047	1105
<b>18 min</b>	<b>291</b> GAL	<b>192</b> GAL	<b>273</b> GAL	<b>364</b> GAL	<b>455</b> GAL	
TEMP, DEG C	<b>9.6</b>	<b>9.1</b>	<b>8.9</b>	<b>8.8</b>	<b>8.2</b>	
PH, UNITS	<b>6.4</b>	<b>7.6</b>	<b>7.6</b>	<b>7.8</b>	<b>7.3</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>542</b>	<b>572</b>	<b>232</b>	<b>532</b>	<b>323</b>	

- SAMPLE OBSERVATIONS
- CLEAR
  - CLOUDY
  - COLORED
  - TURBID
  - ODOOR
  - OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
 BAILER  GRUNDFOS # **X**  
 PVC/SILICON TUBING  2"  4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- used historical volumes

SIGNATURE: *[Signature]* / PWS

RECEIVED BY: *Nancy E. [Signature]*

riser elev. = 821.32

GW elev. = 742.60

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP

SITE ID: PBM-90-02D

LOCATION ACTIVITY: START 0900 END 1130

FIELD SAMPLING NUMBER: PBM9002D

SITE TYPE: WELL

JOB NUMBER: 6853-04

PROGRAM: C

SAMPLING DATE: 12-8-91

FILE NAME: CGW

WEATHER: foggy, 40°

### WATER LEVEL / WELL DATA

WELL DEPTH: 207 FT  MEASURED  HISTORICAL

WATER DEPTH: 78.72 FT

HEIGHT OF WATER COLUMN: 128 FT

PURGE H<sub>2</sub>O CONTAINED?  YES  NO

WELL MATERIAL:  PVC  SS

TOP OF WELL:  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 233 FT

PROTECTIVE CASING/WELL DIFF.: 0.21 FT

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS): 76.60

HEIGHT OF WATER COLUMN:  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)

AMBIENT AIR: 0.6 PPM

WELL MOUTH: 0.6 PPM

TOTAL GAL PURGED: 540

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: \_\_\_\_\_

### PURGE DATA

PURGE VOLUME	4.46	10.07	10.25	10.49	11.10
PURGE VOLUME	0.08 GAL	0.21 GAL	0.24 GAL	0.73 GAL	0.51 GAL
TEMP, DEG C	10.4	10.2	10.7	10.6	11.0
PH, UNITS	7.50	7.50	7.50	7.50	7.50
SPECIFIC CONDUCTIVITY umhos/cm	525	575	55	535	531

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  OOR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

SAMPLING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

EQUIPMENT ID: ISCO # \_\_\_\_\_ GRUNDEFS# \_\_\_\_\_ 2" 4" # \_\_\_\_\_

REC'D FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	H2SO4 TO pH<2	500 ML POLY			
CL	YES	4 DEG C	500 ML POLY			
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2 (3)40 ML VIAL				
NH3N2	NO	H2SO4 TO pH<2 500 ML POLY				
VOC	NO	HCL, 4 DEG C (3)40 ML VIAL				
BN/A	NO	4 DEG C (2) 1 L AG				
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

Sample Bottle IDs: 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- used historical volumes + well DEPTH  
 - sides of well too sticky to get well depth

SIGNATURE: Liam Cote 2 R  
 RECEIVED BY: Nancy E. Ropa

grl elev =

riser elev. = 814.79

GW elev. = 741.97

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE   

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER PBM9003D

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.14.91

SITE ID PBM-90-03D

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1330 END 1600

PROGRAM C

WEATHER Sunny 10°

### WATER LEVEL / WELL DATA

WELL DEPTH 201.8 FT

MEASURED  
 HISTORICAL

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 1.60 FT

PROTECTIVE CASING/WELL DIFF. +0.21 FT

WATER DEPTH 72.82 FT

HEIGHT OF WATER COLUMN 129.0 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 71.43

WATER PURGE VOLUMES:   
0.16 GAL/FT (2 IN) 103 GAL/VOL  
2.65 GAL/FT (4 IN) = 515 TOTAL GAL PURGED  
1.5 GAL/FT (6 IN)

WELL INTEGRITY:   
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER:  YES  NO  N/A

PURGE H2O CONTAINED?  YES  NO  
WELL MATERIAL  PVC  SS  
AMBIENT AIR 0 PPM  
WELL MOUTH 0 PPM

### PURGE DATA

PURGE VOLUME	1421	1422	1503	1524	1545
<span style="border: 1px solid black; padding: 2px;">2 MIN</span>	<span style="border: 1px solid black; padding: 2px;">2103</span> GAL	<span style="border: 1px solid black; padding: 2px;">2206</span> GAL	<span style="border: 1px solid black; padding: 2px;">309</span> GAL	<span style="border: 1px solid black; padding: 2px;">412</span> GAL	<span style="border: 1px solid black; padding: 2px;">515</span> GAL
TEMP, DEG C	<span style="border: 1px solid black; padding: 2px;">8.2</span>	<span style="border: 1px solid black; padding: 2px;">8.8</span>	<span style="border: 1px solid black; padding: 2px;">8.7</span>	<span style="border: 1px solid black; padding: 2px;">8.7</span>	<span style="border: 1px solid black; padding: 2px;">8.7</span>
pH, UNITS	<span style="border: 1px solid black; padding: 2px;">7.9</span>	<span style="border: 1px solid black; padding: 2px;">7.8</span>	<span style="border: 1px solid black; padding: 2px;">7.8</span>	<span style="border: 1px solid black; padding: 2px;">7.8</span>	<span style="border: 1px solid black; padding: 2px;">7.8</span>
SPECIFIC CONDUCTIVITY umhos/cm	<span style="border: 1px solid black; padding: 2px;">415</span>	<span style="border: 1px solid black; padding: 2px;">488</span>	<span style="border: 1px solid black; padding: 2px;">733</span>	<span style="border: 1px solid black; padding: 2px;">708</span>	<span style="border: 1px solid black; padding: 2px;">714</span>

SAMPLE OBSERVATIONS:   
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDFOS#  \_\_\_\_\_  
2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS Lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1865	022280.C
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1865	022280.C
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1884	070510.C
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1865	
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1886	
ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS	NO	4 DEG C		<input type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input type="checkbox"/>	1887	021230.C
BN/A	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>	1890	02280.C
NG	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: *[Signature]* / PVC  
RECEIVED BY: Nancy F



271  
3220. =

rise  
elev. = 830.00

GW  
elev. = 738.70

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM 90043

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBM-90-043

JOB NUMBER 6853-04

SAMPLING DATE 12-15-91

LOCATION ACTIVITY START 0915 END 1030

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 20°F  
windy

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.98 FT

PROTECTIVE CASING/WELL DIFF. -.04 FT

WELL DEPTH 122.32 FT

MEASURED  
 HISTORICAL

WATER DEPTH 71.30 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

89.36

HEIGHT OF WATER COLUMN 31.02 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

38 GAL/VOL

190 TOTAL GAL PURGED (190)

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
OTHER: CAP

YES NO N/A

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR - PPM

WELL MOUTH - PPM

### PURGE DATA

PURGE VOLUME	238 GAL	76 GAL	114 GAL	152 GAL	190 GAL
TEMP, DEG C	9.3	9.0	8.4	8.9	8.9
PH, UNITS	7.7	7.8	7.7	7.8	7.7
SPECIFIC CONDUCTIVITY umhos/cm	323	311	313	309	316

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDFOS# \_\_\_\_\_  
2" 4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
MARO	YES	HNO3 TO pH<2				
NIT	YES	H2SO4 TO pH<2	500 ML POLY			
CL	YES	4 DEG C	500 ML POLY			
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: RICKS 16/12

RECEIVED BY: Nancy E. Rofa

ant elev =

rise elev. = 828.95

GW elev. = 730.85

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM 9004D

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID PBM-90-04D

JOB NUMBER

6853-04

SAMPLING DATE

12-15-91

LOCATION ACTIVITY START 0900 END 1130

PROGRAM

C

FILE NAME

CGW

WEATHER

SUNNY, WINDY 11' - 20' W.C.

### WATER LEVEL / WELL DATA

WELL DEPTH 222.56 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.70 FT

PROTECTIVE CASING/WELL DIFF.

4.23 FT

WATER DEPTH 11.32 FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

89.85

HEIGHT OF WATER COLUMN 131.24 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

98 GAL/VOL

440 TOTAL GAL PURGED

(490)

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: CAP

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR - PPM

WELL MOUTH - PPM

### PURGE DATA

PURGE VOLUME	298 GAL	296 GAL	294 GAL	392 GAL	290 GAL
TEMP, DEG C	9.2	9.7	9.8	8.9	9.0
PH, UNITS	7.7	7.8	7.6	7.7	7.7
SPECIFIC CONDUCTIVITY umhos/cm	314	313	314	301	302

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAITER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO #  
 GRUNDFOS #  
 2"  4"

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2			
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		
CL TT08	YES	4 DEG C	500 ML POLY		
SO4 TT08	YES	4 DEG C			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		
BN/A UM16	NO	4 DEG C	(2) 1 L AG		
HC 99	NO	4 DEG C	1 L AG		
NAM UN06	NO	4 DEG C	1 L AG		
DNT UV26	NO	4 DEG C	1 L AG		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03... (TL:GFAA, K/NA:ICP)

- used historical volumes

SIGNATURE: *[Signature]*

RECEIVED BY: Nancy E. [Signature]

SWN = 830.3

Riser elev. = 833.25

GW elev. = 755.65

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SWN9101B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID SWN-91-01B

JOB NUMBER 6853-04

SAMPLING DATE 12.14.91

LOCATION ACTIVITY START 0800 END 1130

PROGRAM C

FILE NAME CGW

WEATHER cloudy, windy 20° (21-10)

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.32 ± FT

PROTECTIVE CASING/WELL DIFF. -0.21 FT

WELL DEPTH 115.06 FT

MEASURED  
 HISTORICAL

WATER DEPTH 77.60 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 75.49

HEIGHT OF WATER COLUMN 37.46 FT X  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (1 IN)

142 GAL/VOL

710 TOTAL GAL PURGED (712)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CW

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT ATR .4 PPM

WELL MOUTH .4 PPM

### PURGE DATA

PURGE VOLUME

PURGE VOLUME	0142 GAL	0254 GAL	0426 GAL	0589 GAL	0710 GAL
TEMP, DEG C	8.4	9.3	8.0	7.9	7.0
pH, UNITS	7.5	7.6	7.6	7.6	7.5
SPECIFIC CONDUCTIVITY umhos/cm	422	424	405	414	422

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING:  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG S803	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL				
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY				
VOC UM17	NO	NCL, 4 DEG C (3)40 ML VIAL				
BN/A UM16	NO	4 DEG C (2) 1 L AG				
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

-used volumes from development

SIGNATURE: *R. K. S. / 1/8*

RECEIVED BY: *Nancy E. Kora*

ATTN: elev. = 831.0

Riser elev. = 834.03

GW elev. = 754.66

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**SWN9101C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **SWN-91-01C**

JOB NUMBER **6853-04**

SAMPLING DATE **12-14-91**

LOCATION ACTIVITY **START 0815 END 0930**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **cloudy, windy 20°**

### WATER LEVEL / WELL DATA

WELL DEPTH **160.04 FT**

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.73 FT**

PROTECTIVE CASING/WELL DIFF. **-1.10 FT**

WATER DEPTH **79.37 FT**

MEASURED  
 HISTORICAL

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) **76.74**

HEIGHT OF WATER COLUMN **80.67 FT**  
X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

**53** GAL/VOL  
**265** TOTAL GAL PURGED **(264)**

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: **cap**

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **.2** PPM

WELL MOUTH **.2** PPM

### PURGE DATA

PURGE VOLUME	@ 53 GAL	@ 106 GAL	@ 159 GAL	@ 212 GAL	@ 265 GAL
TEMP, DEG C	9.1	9.4	9.4	9.3	9.1
PH, UNITS	7.7	7.6	7.6	7.8	7.6
SPECIFIC CONDUCTIVITY umhos/cm	387	393	392	399	389

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDEFS# \_\_\_\_\_  
2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 FOAMABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTL. ID NUMBERS	ESS #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2				
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL	TT08	YES	4 DEG C	500 ML POLY			
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A	UM16	NO	4 DEG C	(2) 1 L AG			
NG	99	NO	4 DEG C	1 L AG			
NAH	UN06	NO	4 DEG C	1 L AG			
DNT	UW26	NO	4 DEG C	1 L AG			
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used volumes from development

SIGNATURE: RCSH/102  
RECEIVED BY: Waney E. R...

831.5

833.57

GU elev. = 754.57

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SWN9101D

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID SWN-91-01D

JOB NUMBER 6853-04

SAMPLING DATE 12.14.91

LOCATION ACTIVITY START 0945 END 1215

PROGRAM C

FILE NAME CGW

WEATHER Partly cloudy, wind 15 mph, -15W

### WATER LEVEL / WELL DATA

WELL DEPTH 200.37 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.14 FT

PROTECTIVE CASING/WELL DIFF. -.18 FT

WATER DEPTH 79.00 FT

WELL DIAMETER 2 INCH

GROUNDWATER ELEVATION (BGS) 77.04

HEIGHT OF WATER COLUMN 121.37 FT

.16 GAL/FT (2 IN) = 110 GAL/VOL  
.65 GAL/FT (4 IN) =  
1.5 GAL/FT (6 IN) = 550 TOTAL GAL PURGED

550 TOTAL GAL PURGED

WELL INTEGRITY: PROT. CASING SECURE YES NO N/A  
CONCRETE COLLAR INTACT YES NO N/A  
WELL LOCKED YES NO N/A  
OTHER: CAR

PURGE H2O CONTAINED? YES NO

WELL MATERIAL PVC SS

AMBIENT AIR 4 PPM

WELL MOUTH 4 PPM

### PURGE DATA

PURGE VOLUME	110 GAL	220 GAL	330 GAL	440 GAL	550 GAL
TEMP, DEG C	7.7	8.2	8.8	8.4	8.8
pH, UNITS	7.7	7.7	7.4	7.7	7.5
SPECIFIC CONDUCTIVITY umhos/cm	381	375	383	384	394

SAMPLE OBSERVATIONS CLEAR CLOUDY COLORED TURBID ODOR OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER

EQUIPMENT ID PERISTALTIC PUMP ISCO # SUBMERSIBLE PUMP GRUNDESD# BAILER 2" 4" # PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER

REC'D FLUIDS USED POTABLE WATER LIQUINOX STEAM CLEANING

WATER LEVEL EQUIP. USED ELECTRIC COND. PROBE FLOAT ACTIVATED PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NO 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UN26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- used volumes from development

SIGNATURE: [Signature] / PCS  
RECEIVED BY: Nancy E. Kotz

gwt elev. = 834.4 r/w elev. = 836.59

GW elev. = 753.73

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE   

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

S W N 9 1 0 2 C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.14.91

SITE ID S W N - 9 1 - 0 2 C

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START ~~1230~~ 1245 END 1415

PROGRAM C

WEATHER PARTLY CLOUDY  
20° W - 15

**WATER LEVEL / WELL DATA**

MEASURED  HISTORICAL

WELL DEPTH 155.42 FT

WATER DEPTH 82.67 FT

HEIGHT OF WATER COLUMN 71.75 FT

PROTECTIVE CASING/WELL DIFF. -0.23 FT

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.21 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) 80.69

HEIGHT OF WATER COLUMN X  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)

66 GAL/VOL 330 TOTAL GAL PURGED (330)

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR — PPM    WELL MOUTH — PPM   

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: CAR

**PURGE DATA**

PURGE VOLUME	<span style="border: 1px solid black; padding: 2px;">@ 66 GAL</span>	<span style="border: 1px solid black; padding: 2px;">@ 132 GAL</span>	<span style="border: 1px solid black; padding: 2px;">@ 198 GAL</span>	<span style="border: 1px solid black; padding: 2px;">@ 264 GAL</span>	<span style="border: 1px solid black; padding: 2px;">@ 330 GAL</span>	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)	
TEMP, DEG C	<span style="border: 1px solid black; padding: 2px;">8.7</span>	<span style="border: 1px solid black; padding: 2px;">8.8</span>	<span style="border: 1px solid black; padding: 2px;">8.8</span>	<span style="border: 1px solid black; padding: 2px;">8.9</span>	<span style="border: 1px solid black; padding: 2px;">8.5</span>		
PH, UNITS	<span style="border: 1px solid black; padding: 2px;">7.3</span>	<span style="border: 1px solid black; padding: 2px;">7.5</span>	<span style="border: 1px solid black; padding: 2px;">7.6</span>	<span style="border: 1px solid black; padding: 2px;">7.5</span>	<span style="border: 1px solid black; padding: 2px;">7.9</span>		
SPECIFIC CONDUCTIVITY umhos/cm	<span style="border: 1px solid black; padding: 2px;">432</span>	<span style="border: 1px solid black; padding: 2px;">430</span>	<span style="border: 1px solid black; padding: 2px;">434</span>	<span style="border: 1px solid black; padding: 2px;">428</span>	<span style="border: 1px solid black; padding: 2px;">424</span>		

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_

SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_

BAILER  GRUNDFOS# \_\_\_\_\_

PVC/SILICON TUBING  2"  4" # \_\_\_\_\_

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2			
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		
CL TT08	YES	4 DEG C	500 ML POLY		
SO4 TT08	YES	4 DEG C	500 ML POLY		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	NCL, 4 DEG C	(3) 40 ML VIAL		
3N/A UM16	NO	4 DEG C	(2) 1 L AG		
NG 99	NO	4 DEG C	1 L AG		
NAM UN06	NO	4 DEG C	1 L AG		
DNT UW26	NO	4 DEG C	1 L AG		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used volumes from development

SIGNATURE: Paula Smith  
 RECEIVED BY: Nancy E

Well = 8345 elev. = 836.61

GW elev. = 753.61

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PAGE \_\_\_\_ OF \_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

SWN9102D

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID SWN-91-02D

JOB NUMBER 6853-04

SAMPLING DATE 12.14.91

LOCATION ACTIVITY START 1230 END 1445

PROGRAM C

FILE NAME CGW

WEATHER SUNNY WINDY 20' W - 15'

**WATER LEVEL / WELL DATA**

WELL DEPTH 187.00 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.34 FT

PROTECTIVE CASING/WELL DIFF. -0.14 FT

WATER DEPTH 83.00 FT

WELL DIAMETER 2 INCH 4 INCH 6 INCH

GROUNDWATER ELEVATION (BGS)

80.82

HEIGHT OF WATER COLUMN 104.00 FT

.16 GAL/FT (2 IN)  
.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)  
GAL/FT (IN)

98 GAL/VOL

490 TOTAL GAL PURGED

491

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: CAP

PURGE H2O CONTAINED? YES NO

WELL MATERIAL PVC SS

AMBIENT AIR PPM

WELL MOUTH PPM

**PURGE DATA**

PURGE VOLUME	98 GAL	196 GAL	294 GAL	392 GAL	490 GAL
TEMP, DEG C	8.2	9.1	8.9	8.0	8.5
PH, UNITS	7.6	7.7	7.7	7.6	7.7
SPECIFIC CONDUCTIVITY umhos/cm	322	331	321	319	328

SAMPLE OBSERVATIONS  
CLEAR  
CLOUDY  
COLORED  
TURBID  
ODOR  
OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID

ISCO #  
GRUNDEDS#  
2" 4" #

DECON FLUIDS USED

POTABLE WATER  
LIQUINOX  
STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
FLOAT ACTIVATED  
PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			1964	0227501C
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1964	0227601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1965	0703101C
CL TT08	YES	4 DEG C	500 ML POLY		1966	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1967	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1968	0212301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1971	0123101C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UN26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used volumes from development

SIGNATURE: *R. J. Sullivan*  
RECEIVED BY: *Nancy F. Rorica*

grd. elev. = 834.7 riser elev. = 836.63

GW elev. = 752.26

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PAGE 0

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

**SWN9103B**

PROJECT **USATHANA-BAAP**

SITE TYPE

**WELL**

SITE ID **SWN-91-03B**

JOB NUMBER

**6853-04**

SAMPLING DATE

**12.10.91**

LOCATION ACTIVITY **START 1430 12 END 1545 14 30**

PROGRAM

**C**

FILE NAME

**CGW**

WEATHER

**Clear 40**

**WATER LEVEL / WELL DATA**

WELL DEPTH **115.10 FT**

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

**1.9 FT**

PROTECTIVE CASING/WELL DIFF.

**-0.03 FT**

WATER DEPTH **87.57 FT**

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

**45 GAL/VOL**

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

**8d.55**

HEIGHT OF WATER COLUMN **30.75 FT**

X

TOTAL GAL PURGED

**(220)**

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER:

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR **0.4 PPM**

WELL MOUTH **0.4 PPM**

**PURGE DATA**

	13 10	13 25	13 40	13 55	14 10
PURGE VOLUME	<b>45 GAL</b>	<b>70 GAL</b>	<b>135 GAL</b>	<b>150 GAL</b>	<b>225 GAL</b>
TEMP, DEG C	<b>10.5</b>	<b>10.5</b>	<b>10.7</b>	<b>10.7</b>	<b>10.7</b>
PH, UNITS	<b>8.15</b>	<b>8.04</b>	<b>8.16</b>	<b>8.17</b>	<b>8.6</b>
SPECIFIC CONDUCTIVITY umhos/cm	<b>711</b>	<b>710</b>	<b>715</b>	<b>713</b>	<b>714</b>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOUR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
JSCO #  
GRUNDEFS#  
2" 4" #

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

**ANALYTICAL PARAMETERS**

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CO	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
MG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2				
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL	TT08	YES	4 DEG C	500 ML POLY			
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A	UM16	NO	4 DEG C	(2) 1 L AG			
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG			
DNT	UV26	NO	4 DEG C	1 L AG			
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES**

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- used volumes from development  
- order changed in field - labels not changed

SIGNATURE: *[Signature]*  
RECEIVED BY: *Nancy E. [Signature]*



and elev = 7866 user elev = 336.75 7W elev = 752.32

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_ OF \_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER **SWN9103C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **SWN-91-03C**

JOB NUMBER **6853-04**

SAMPLING DATE **12.10.91**

LOCATION ACTIVITY **START 120014.30 END 1630**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **CLC AIR 40**

**WATER LEVEL / WELL DATA**

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.28 FT**

TOP OF CASING PROTECTIVE CASING/WELL DIFF. **-0.01 FT**

WELL DEPTH **16.5 28 FT**  MEASURED  HISTORICAL

WATER DEPTH **84.41 FT**

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) **82.14**

HEIGHT OF WATER COLUMN **90.87 FT** X  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (IN)

**77 GAL/VOL** **388 TOTAL GAL PURGED** **388**

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **0.3 PPM** WELL MOUTH **0.3 PPM**

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: \_\_\_\_\_

**PURGE DATA**

PURGE VOLUME	14.50	15.10	15.30	15.50	16.10
PURGE VOLUME	@ 77 GAL	@ 151 GAL	@ 231 GAL	@ 311 GAL	@ 388 GAL
TEMP, DEG C	10.6	10.8	10.6	11.0	12.0
PH, UNITS	8.54	8.26	8.27	8.2	8.0
SPECIFIC CONDUCTIVITY umhos/cm	454	448	457	449	445

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOOR  OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAITER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

SAMPLING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAITER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_ GRUNDEDS# \_\_\_\_\_ 2" 4" # \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH342 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAH UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

Sample Bottle IDs: 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990

**NOTES** PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used volumes from development  
 -order changed in field - labels not changed

SIGNATURE: Nancy E. Rorick  
 RECEIVED BY: Nancy E. Rorick

955 elev = 235.0

755 elev = 337.09

750 elev = 752.64

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SWN91103D

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID SWN-911-03D

JOB NUMBER 6853-04

SAMPLING DATE 12-10-91

LOCATION ACTIVITY START 1015 END 1330

PROGRAM C

FILE NAME CGW

WEATHER CLEAR 30%

### WATER LEVEL / WELL DATA

WELL DEPTH 210.5 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) 218 FT

PROTECTIVE CASING/WELL DIFF. 70.01 FT

WATER DEPTH 54.93 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 82.26

HEIGHT OF WATER COLUMN 125.97 FT X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

115 GAL/VOL  
564 TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER:

PURGE H2O CONTAINED? YES NO  
WELL MATERIAL PVC SS

AMBIENT AIR 0.4 PPM

WELL MOUTH 0.4 PPM

### PURGE DATA

	1144	1213	1241	1310	1337
PURGE VOLUME	2115 GAL	231 GAL	245 GAL	246 GAL	229 GAL
TEMP, DEG C	10.5	10.1	9.7	10.5	10.5
PH, UNITS	8.55	8.27	8.26	8.32	8.30
SPECIFIC CONDUCTIVITY umhos/cm	306	303	393	370	365

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAITER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
ISCD #  
CRUNFOS#  
2" 4" #

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
NUMBER OF FILTERS USED 1

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2				
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL	TT08	YES	4 DEG C	500 ML POLY			
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN'A	UM16	NO	4 DEG C	(2) 1 L AG			
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG			
CNT	UN26	NO	4 DEG C	1 L AG			
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GVM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,HG,MN,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used volumes from development

SIGNATURE: [Signature] RE  
RECEIVED BY: Nancy E. [Signature]

ESSJ riser elev = 857.38

GW elev = 772.25

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER **SWN9103E**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **12.10.91**

SITE ID **SWN-91-03E**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1030 END 120015**

PROGRAM **C**

WEATHER **CLEAR 30**

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **2.4 FT**  
 PROTECTIVE CASING/WELL DIFF. **-0.19 FT**  
 WELL DEPTH **270.4 FT**  
 MEASURED  
 HISTORICAL  
 WATER DEPTH **65.15 FT**  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION (BGS) **62.94**  
 HEIGHT OF WATER COLUMN **135.25 FT** x  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN)  
**20** GAL/VOL  
 TOTAL GAL PURGED **(131)**  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: \_\_\_\_\_  
 PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.3** PPM  
 WELL MOUTH **0.5** PPM

**PURGE DATA**

PURGE VOLUME	11.24	11.35	11.42	11.51	12.00	SAMPLE OBSERVATIONS
	20 GAL	52 GAL	78 GAL	104 GAL	131 GAL	<input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.3	10.6	10.6	10.4	10.5	
pH, UNITS	8.79	8.83	8.83	8.81	8.66	
SPECIFIC CONDUCTIVITY umhos/cm	450	450	443	449	627	

**EQUIPMENT DOCUMENTATION**

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID \_\_\_\_\_  
 RECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED **1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		ESS lot #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			2000 / / / 022201C
CA	YES	HNO3 TO pH<2			
NA	YES	HNO3 TO pH<2			
CD	YES	HNO3 TO pH<2			
CR	YES	HNO3 TO pH<2			
HG	YES	HNO3 TO pH<2			
PB	YES	HNO3 TO pH<2			
NI	YES	HNO3 TO pH<2			
BA	YES	HNO3 TO pH<2			
HARD	YES	HNO3 TO pH<2			
NIT	YES	H2SO4 TO pH<2	500 ML POLY		2000 / / / 022201C
CL	YES	4 DEG C	500 ML POLY		2001 / / / 070301C
SO4	YES	4 DEG C	500 ML POLY		2002 / / /
ALK	NO	4 DEG C	500 ML POLY		2003 / / /
TDS	NO	4 DEG C			
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		
BN/A	NO	4 DEG C	(2) 1 L AG		2004 / 2005 / 2006 / 0212301C
NG	NO	4 DEG C	1 L AG		2007 / 2008 / / 0126101C
NAM	NO	4 DEG C	1 L AG		
DNT	NO	4 DEG C	1 L AG		
TPH	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- used volumes from development

SIGNATURE: *[Signature]*  
 RECEIVED BY: **Nancy E. Rofka**

3rd. elev. = 832.8

75er elev. = 834.37

GW elev. = 749.91

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SKUN91104C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID SWN-91-04C

JOB NUMBER 6853-04

SAMPLING DATE 12-14-91

LOCATION ACTIVITY START 1100 END 1230

PROGRAM C

FILE NAME CGW

WEATHER Partly Sunny 16 windy

### WATER LEVEL / WELL DATA

WELL DEPTH 167.8 FT

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.6 FT

PROTECTIVE CASING/WELL DIFF. -0.21 FT

WATER DEPTH 84.46 FT

MEASURED  
 HISTORICAL

WELL DIAMETER 2 INCH

GROUNDWATER ELEVATION (BGS) 82.57

HEIGHT OF WATER COLUMN 82.84 FT

.16 GAL/FT (2 IN)  
1.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)  
GAL/FT ( \_ )

73 GAL/VOL

TOTAL GAL PURGED 365

365

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: \_\_\_\_\_

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

### PURGE DATA

PURGE VOLUME 15 MIN

TEMP, DEG C

pH, UNITS

SPECIFIC CONDUCTIVITY umhos/cm

	1141	1156	1211	1226	1241
PURGE VOLUME	2173 GAL	2146 GAL	2219 GAL	2252 GAL	2365 GAL
TEMP, DEG C	9.3	9.5	9.5	9.4	9.0
pH, UNITS	8.0	7.7	7.7	7.7	7.7
SPECIFIC CONDUCTIVITY umhos/cm	499	475	491	493	492

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 6" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA	YES	HNO3 TO pH<2			
NA	YES	HNO3 TO pH<2			
CO	YES	HNO3 TO pH<2			2007 / 022801C
CR	YES	HNO3 TO pH<2			
HG	YES	HNO3 TO pH<2			
PB	YES	HNO3 TO pH<2			
NI	YES	HNO3 TO pH<2			
BA	YES	HNO3 TO pH<2			
HARD	YES	HNO3 TO pH<2			
NIT	YES	H2SO4 TO pH<2	500 ML POLY		2007 / 0212801C
CL	YES	4 DEG C	500 ML POLY		2010 / 0203101C
SO4	YES	4 DEG C	500 ML POLY		
ALK	NO	4 DEG C	500 ML POLY		
TDS	NO	4 DEG C	500 ML POLY		
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		
BN/A	NO	4 DEG C	(2) 1 L AG		2013 / 2014 / 2015 / 0212301C
NG	NO	4 DEG C	1 L AG		2016 / 2017 / 0228101C
NAM	NO	4 DEG C	1 L AG		
DNT	NO	4 DEG C	1 L AG		
TPH	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used volumes from development

SIGNATURE: [Signature]  
RECEIVED BY: Nancy E. [Signature]

$slw = 833.5$     riser elev. = 835.28     $slw = 750.90$

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

PROJECT USATHAMA-BAAP  
 SITE ID SWN-91-04D  
 LOCATION ACTIVITY START 1045 END 1245

FIELD SAMPLING NUMBER SWN9104D  
 SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C

SAMPLING DATE 12-14-91  
 FILE NAME CGW  
 WEATHER Partly Sunny, 16.1 WINDY

**WATER LEVEL / WELL DATA**

TOP OF WELL     PROTECTIVE CASING STICK-UP (FROM GROUND) 2.4 FT  
 TOP OF CASING     PROTECTIVE CASING/WELL DIFF. 0.10 FT  
 WELL DEPTH 208. FT     MEASURED     HISTORICAL  
 WATER DEPTH 84.35 FT    WELL DIAMETER  2 INCH     4 INCH     6 INCH    GROUNDWATER ELEVATION (BGTS) 82.02  
 HEIGHT OF WATER COLUMN 123.62 FT     .16 GAL/FT (2 IN)    95.2 GAL/VOL     .65 GAL/FT (4 IN)     1.5 GAL/FT (6 IN)     GAL/FT (\_\_\_ IN)  
 TOTAL GAL PURGED 476 (476)  
 PURGE H2O CONTAINED?  YES     NO    WELL MATERIAL  PVC     SS    AMBIENT AIR --- PPM    WELL MOUTH --- PPM  
 WELL INTEGRITY: PROT. CASING SECURE  YES     NO     N/A  
 CONCRETE COLLAR INTACT  YES     NO     N/A  
 WELL LOCKED  YES     NO     N/A  
 OTHER: \_\_\_\_\_

**PURGE DATA**

PURGE VOLUME	1149	1208	1227	1246	1305	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODDOR <input type="checkbox"/> OTHER (SEE NOTES)
19 MIN	295 GAL	2190 GAL	2285 GAL	2390 GAL	2476 GAL	
TEMP, DEG C	8.4	9.6	9.5	9.6	8.7	
pH, UNITS	7.9	7.8	7.9	7.8	7.8	
SPECIFIC CONDUCTIVITY umhos/cm	395	406	398	355	462	

**EQUIPMENT DOCUMENTATION**

PURGING  PERISTALTIC PUMP    EQUIPMENT ID ISCO # \_\_\_\_\_  
 SAMPLING  SUBMERSIBLE PUMP    GRUNDEPS# X  
 BAILER    2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER    WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 LIQUINOX     FLOAT ACTIVATED  
 STEAM CLEANING     PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2			2018	0222501C
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			2018	0222501C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		2019	0203121C
CL	YES	4 DEG C	500 ML POLY		2020	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		2021	
TDS	NO	4 DEG C				
TOC	NO	4 DEG C				
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		2022	0212301C
BN/A	NO	4 DEG C	(2) 1 L AG		2025	0228101C
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GLM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- used volumes from development

SIGNATURE: [Signature] / PVC  
 RECEIVED BY: Nancy E. Rota

1st. elev. = 830.5

2nd. elev. = 332.67

3rd. elev. = 73.12

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**SWN9105B**

PROJECT

USATHAMA-BAAP

SITE TYPE

WELL

SITE ID

**SWN-91-05B**

JOB NUMBER

6853-04

SAMPLING DATE

12/14/91

LOCATION ACTIVITY

START **0815** END **0900**

PROGRAM

C

FILE NAME

CGW

WEATHER

overcast  
cold 10° winds  
 gusting to 40 mph

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.52 FT

PROTECTIVE CASING/WELL DIFF.

0.18 FT

WELL DEPTH

115.13 FT

MEASURED  
 HISTORICAL

WATER DEPTH

84.55 FT

WELL DIAMETER  
 2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

32.19

HEIGHT OF WATER COLUMN

30.58 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

33.4 GAL/VOL

167 TOTAL GAL PURGED

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER:

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

### PURGE DATA

PURGE VOLUME	0842	0849	0856	0903	0910
7 min 0835	233 GAL	266 GAL	249 GAL	2132 GAL	2167 GAL
TEMP, DEG C	4.5	9.0	3.7	4.3	9.6
pH, UNITS	7.1	7.5	7.5	7.5	7.6
SPECIFIC CONDUCTIVITY umhos/cm	582	572	330	534	584

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
BAILER  GRUNDEDS#  2"  4" # \_\_\_\_\_  
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

REC'D FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L FOLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG S803	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NTI TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UN26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,NG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)

-used volumes from development

SIGNATURE: *[Signature]*

RECEIVED BY: Nancy E. [Signature]

2nd. = 830.8  
2nd. = 830.8

1st. elev. = 832.86

3rd. elev. = 748.07

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SWN9105C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID SWN-91-05C

JOB NUMBER 6853-04

SAMPLING DATE 12.14.91

LOCATION ACTIVITY START 0915 END 1015

PROGRAM C

FILE NAME CGW

WEATHER 10:00 40mph wind

### WATER LEVEL / WELL DATA

WELL DEPTH 178.75 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 263 FT

PROTECTIVE CASING/WELL DIFF. -0.7 FT

WATER DEPTH 84.79 FT

WELL DIAMETER 2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 80.86

HEIGHT OF WATER COLUMN 67.06 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( \_ IN)

41.6 GAL/VOL

208 TOTAL GAL PURGED (208)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER:  YES  NO  N/A

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

### PURGE DATA

PURGE VOLUME	042 GAL	084 GAL	126 GAL	168 GAL	208 GAL
TEMP, DEG C	9.5	9.5	9.5	9.6	9.5
pH, UNITS	7.6	7.6	7.0	7.6	7.6
SPECIFIC CONDUCTIVITY umhos/cm	560	554	556	565	560

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSTIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS# X  
2"  4" #

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS wt #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	2036	0:2280.C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	2037	0:10310.C
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	2038	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	2039	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	2040	0:1230.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	2043	0:7810.C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	2044	
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UN26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used volumes from development

SIGNATURE: [Signature]  
RECEIVED BY: Nancy E. Restra

T<sub>cell</sub> = 731.2 riser elev. = 833.31 GW elev. = 747.90

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE 1

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

SWN9105D

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID SWN-91-05D

JOB NUMBER

6853-04

SAMPLING DATE

12.14.91

LOCATION ACTIVITY START 0800 END 1030

PROGRAM

C

FILE NAME

CGW

WEATHER

clear 10  
windy 10  
10 40

**WATER LEVEL / WELL DATA**

WELL DEPTH 203 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.40 FT

PROTECTIVE CASING/WELL DIFF.

-0.14 FT

WATER DEPTH 85.41 FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

83.20

HEIGHT OF WATER COLUMN

117.57 FT

1.16 GAL/FT (2 IN)  
 2.65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

99 GAL/VOL

TOTAL GAL PURGED

495

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER:

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

**PURGE DATA**

Start 0840 0900 0930 0940 1000

PURGE VOLUME

0820 99 GAL 198 GAL 297 GAL 396 GAL 495 GAL

TEMP, DEG C

pH, UNITS

SPECIFIC CONDUCTIVITY umhos/cm

<span style="border: 1px solid black; padding: 2px;">9.7</span>	<span style="border: 1px solid black; padding: 2px;">9.3</span>	<span style="border: 1px solid black; padding: 2px;">9.6</span>	<span style="border: 1px solid black; padding: 2px;">5.8</span>	<span style="border: 1px solid black; padding: 2px;">9.9</span>
<span style="border: 1px solid black; padding: 2px;">6.4</span>	<span style="border: 1px solid black; padding: 2px;">7.0</span>	<span style="border: 1px solid black; padding: 2px;">7.7</span>	<span style="border: 1px solid black; padding: 2px;">7.7</span>	<span style="border: 1px solid black; padding: 2px;">7.6</span>
<span style="border: 1px solid black; padding: 2px;">549</span>	<span style="border: 1px solid black; padding: 2px;">511</span>	<span style="border: 1px solid black; padding: 2px;">530</span>	<span style="border: 1px solid black; padding: 2px;">540</span>	<span style="border: 1px solid black; padding: 2px;">535</span>

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#   
2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NI1	YES	H2SO4 TO pH<2	500 ML POLY			
CL	YES	4 DEG C	500 ML POLY			
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY			
IDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
MH3M2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GUM			

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes (from development)

SIGNATURE: D. DeWormel / PWS

RECEIVED BY: Nancy E. P.



3rd elev. = 828.2 7ser elev. = 830.3 GUL elev. = 761.86

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT: **USATHAMA-BAAP**

SITE ID: **S-11101**

LOCATION ACTIVITY: **START 10-91 13'50" END 1400**

FIELD SAMPLING NUMBER: **51101**

SITE TYPE: **WELL**

JOB NUMBER: **6853-04**

PROGRAM: **C**

SAMPLING DATE: **12-11-91**

FILE NAME: **CGW**

WEATHER: **cloudy 30°**

### WATER LEVEL / WELL DATA

WELL DEPTH: **69.35** FT

WATER DEPTH: **136.5** FT

HEIGHT OF WATER COLUMN: **1.0** FT

MEASURED  HISTORICAL

TOP OF WELL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): **FT**

PROTECTIVE CASING/WELL DIFF.: **-1.3** FT

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION: **FT**

HEIGHT OF WATER COLUMN:  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN)

TOTAL GAL PURGED: **FT**

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL:  PVC  SS

AMBIENT AIR: **0.2** PPM

WELL MOUTH: **0.2** PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

OTHER: \_\_\_\_\_

### PURGE DATA

PURGE VOLUME	@ 1 GAL	@ GAL	@ GAL	@ GAL	@ GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	<b>21</b>					<input type="checkbox"/> CLEAR
PH, UNITS	<b>7.3</b>					<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	<b>916</b>					<input type="checkbox"/> COLORED
						<input checked="" type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID: **ISCO #**

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

NUMBER OF FILTERS USED: \_\_\_\_\_

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	TEMPERATURE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS wt #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	500 ML POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	500 ML POLY			
CA	SS16	YES	HNO3 TO pH<2	500 ML POLY		1360	
NA	SS16	YES	HNO3 TO pH<2	500 ML POLY			
CD	SS16	YES	HNO3 TO pH<2	500 ML POLY			
CR	SS16	YES	HNO3 TO pH<2	500 ML POLY			
HG	SB03	YES	HNO3 TO pH<2	500 ML POLY			
PB	SD24	YES	HNO3 TO pH<2	500 ML POLY			
NI	SS16	YES	HNO3 TO pH<2	500 ML POLY			
BA	SS16	YES	HNO3 TO pH<2	500 ML POLY			
HARD	USEPA 130.2	YES	HNO3 TO pH<2	500 ML POLY		1360	
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	12-12-91	1361	
CL	TT08	YES	4 DEG C	500 ML POLY	11-17-91	1362	
SO4	TT08	YES	4 DEG C	500 ML POLY			
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		1363	
TDS	USEPA 160.1	NO	4 DEG C	500 ML POLY			
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	12-11-91	1364	1365
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		1367	1368
NG	99	NO	4 DEG C	1 L AG		1369	
NAM	UN06	NO	4 DEG C	1 L AG		1370	
DNT	UW26	NO	4 DEG C	1 L AG	11-13-91	1371	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- attempted bailing on 12-9-91 - too silty... could not get any H2O out (>10 tries)

- attempted bailing on 12-10-91 - could only retrieve 1/3 of a bailer out of 8 bails, thick silty sand prevented any H2O from being held. cannot sample.

12-11-91 attempted to collect just VOCs - few attempts were successful

12-11-91 collected 1/2 bails - H2O (clear)

12-11-91 collected 1/2 bails - DNT

SIGNATURE: **N. Roka**

RECEIVED BY: **Nancy E. Roka**

cannot sample

grd. elev. = 307.6 riser elev. = 309.13 (top elev. = 307.4)

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 31102

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID S-11102

JOB NUMBER 6853-04

SAMPLING DATE 12.12.91

LOCATION ACTIVITY START 1530 END 1645

PROGRAM C

FILE NAME CGW

WEATHER # of clouds 3, 0

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 1.78 FT

MEASURED HISTORICAL

WELL DEPTH 662 FT

WATER DEPTH 77.19 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) 45.80

PROTECTIVE CASING/WELL DIFF. .39 FT

HEIGHT OF WATER COLUMN 19.61 FT

.16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)

40 GAL/VOL 200 TOTAL GAL PURGED 195

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  CAS

AMBIENT AIR — PPM WELL MOUTH — PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: —

### PURGE DATA

PURGE VOLUME	<span style="border: 1px solid black; padding: 2px;">270</span> GAL	<span style="border: 1px solid black; padding: 2px;">40</span> GAL	<span style="border: 1px solid black; padding: 2px;">60</span> GAL	<span style="border: 1px solid black; padding: 2px;">80</span> GAL	<span style="border: 1px solid black; padding: 2px;">24 min</span> GAL
TEMP, DEG C	<span style="border: 1px solid black; padding: 2px;">9.0</span>	<span style="border: 1px solid black; padding: 2px;">8.5</span>	<span style="border: 1px solid black; padding: 2px;">9.1</span>	<span style="border: 1px solid black; padding: 2px;">9.0</span>	<span style="border: 1px solid black; padding: 2px;">9.3</span>
pH, UNITS	<span style="border: 1px solid black; padding: 2px;">7.8</span>	<span style="border: 1px solid black; padding: 2px;">7.4</span>	<span style="border: 1px solid black; padding: 2px;">7.7</span>	<span style="border: 1px solid black; padding: 2px;">7.4</span>	<span style="border: 1px solid black; padding: 2px;">7.3</span>
SPECIFIC CONDUCTIVITY umhos/cm	<span style="border: 1px solid black; padding: 2px;">606</span>	<span style="border: 1px solid black; padding: 2px;">621</span>	<span style="border: 1px solid black; padding: 2px;">615</span>	<span style="border: 1px solid black; padding: 2px;">619</span>	<span style="border: 1px solid black; padding: 2px;">622</span>

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID: PERISTALTIC PUMP  ISCO # —  
 SUBMERSIBLE PUMP  GRUNDEOS#  X  
 BAILER  2"  4" # —  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER: —

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED: —

Handwritten notes: 32 min, 40 min, 160 gal, 200 gal, temp 9.3, pH 7.4, cond 622, 623

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1372	0.2250.C
CA	SS16	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	SS16	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	SB03	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	SD24	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	SS16	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	SS16	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	USEPA 130.2	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1372	0.2250.C
NIT	TF10	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1373	0.2510.C
CL	TT08	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1374	
SC4	TT08	4 DEG C		<input checked="" type="checkbox"/>		
ALK	USEPA 310.1	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1375	
TDS	USEPA 160.1	4 DEG C		<input checked="" type="checkbox"/>		
TOC	USEPA 415.1	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
N43N2	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	UM17	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1376 / 1377 / 1378	0.21230.C
BN/A	UM16	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1379 / 1320	0.2510.C
NG	99	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1381	
NAM	UN06	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1382	
DNT	UW26	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1383	
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,X,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: D. J. D. [Signature]  
 RECEIVED BY: Nancy E. [Signature]

well elev = 807.6 riser elev = 809.13 GW elev = 761.30

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER: **S-1103**

PROJECT: **USATHAMA-BAAP**

SITE ID: **S-1103**

LOCATION ACTIVITY: **START 1400 END 1600**

SITE TYPE: **WELL**

JOB NUMBER: **6853-04**

PROGRAM: **C**

SAMPLING DATE: **11-20-91**

FILE NAME: **CGW**

WEATHER: **Sunny, 50's-60's**

**WATER LEVEL / WELL DATA**

WELL DEPTH: **121.8** FT

WATER DEPTH: **47.33** FT

HEIGHT OF WATER COLUMN: **74.47** FT

MEASURED  HISTORICAL

TOP OF WELL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): **1.61** FT

PROTECTIVE CASING/WELL DIFF.: **-0.08** FT

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS): **45.80**

HEIGHT OF WATER COLUMN:  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)

TOTAL GAL PURGED: **300**

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

OTHER: **cap**

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL:  PVC  SS

AMBIENT AIR: **0.6** PPM

WELL MOUTH: **0.6** PPM

**PURGE DATA**

PURGE VOLUME	~ 60 GAL	~ 120 GAL	~ 180 GAL	~ 240 GAL	~ 300 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.4	10.2	10.0	10.0	9.8	
PH, UNITS	7.1	7.1	7.3	7.2	7.2	
SPECIFIC CONDUCTIVITY umhos/cm	70	67.6	67.3	67.3	67.2	

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

EQUIPMENT ID: PERISTALTIC PUMP  ISCO # \_\_\_\_\_  
SUBMERSIBLE PUMP  BRUNNEDS# \_\_\_\_\_  
BAILER  2"  4" # \_\_\_\_\_  
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED: **1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1384	022801C
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1384	022801C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1385	0428101C
CL	YES	4 DEG C	500 ML POLY		1386	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		1387	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		1388 / 1389 / 1390	0212301C
BN/A	NO	4 DEG C	(2) 1 L AG		1391 / 1392	0228101C
HG	NO	4 DEG C	1 L AG		1393	
NAM	NO	4 DEG C	1 L AG		1394	
DNT	NO	4 DEG C	1 L AG		1395	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:LEP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SB24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*purge H2O contained for VOCs  
-used historical volumes

SIGNATURE: *[Signature]*  
RECEIVED BY: **Nancy E. Roria**

aml elev = 837.5 riser elev. = 837.21

GW elev = 762.39

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PAGE \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

51104

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID S-11104

JOB NUMBER 6853-04

SAMPLING DATE 12-13-91

LOCATION ACTIVITY START 1315 END 1430

PROGRAM C

FILE NAME CGW

WEATHER sunny, 30°S

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.93 FT

PROTECTIVE CASING/WELL DIFF. -0.56 FT

WELL DEPTH 98.0 FT

MEASURED  
 HISTORICAL

WATER DEPTH 76.82 FT

WELL DIAMETER 2 INCH  
4 INCH  
6 INCH

GROUNDWATER ELEVATION 75.45

HEIGHT OF WATER COLUMN 2118 FT X  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

43 GAL/VOL

TOTAL GAL PURGED

(215)

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 OTHER:

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

**PURGE DATA**

PURGE VOLUME	1308.5	1317	1325.5	1334	1342.5
TEMP, DEG C	8.0	8.7	8.4	8.6	9.5
pH, UNITS	7.7	7.5	7.3	7.3	7.4
SPECIFIC CONDUCTIVITY umhos/cm	499	495	493	499	500

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

EQUIPMENT ID ISCO #  
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAITER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1396	022801C
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1396	022801C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1397	070310C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1398	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1399	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1400	071230C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1403	02810C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1405	
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1406	
DNT UM26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1407	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historic volumes

SIGNATURE: *[Signature]*  
 RECEIVED BY: Nancy E. [Signature]

Dist = 637.4

rise = 257.08 elev.

300 elev. = 762.37

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP

FIELD SAMPLING NUMBER: S-11105

SITE ID: S-11105

SITE TYPE: WELL

SAMPLING DATE: 12-13-91

LOCATION ACTIVITY: START 1505 END 1630

JOB NUMBER: 6853-04

FILE NAME: CGW

PROGRAM: C

WEATHER: Sunny, 30°S

### WATER LEVEL / WELL DATA

WELL DEPTH: 44.50 FT MEASURED HISTORICAL TOP OF WELL TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND): 2.34 FT PROTECTIVE CASING/WELL DIFF.: 1.32 FT

WATER DEPTH: 76.69 FT WELL DIAMETER: 2 INCH 4 INCH 6 INCH GROUNDWATER ELEVATION (BGS): 75.67

HEIGHT OF WATER COLUMN: 37 FT X .16 GAL/FT (2 IN) .65 GAL/FT (4 IN) 1.5 GAL/FT (6 IN) TOTAL GAL PURGED: 160

PURGE H2O CONTAINED? YES NO WELL MATERIAL: PVC SS AMBIENT AIR: 0 PPM WELL MOUTH: 0 PPM WELL INTEGRITY: PROT. CASING SECURE CONCRETE COLLAR INTACT WELL LOCKED OTHER:

### PURGE DATA

PURGE VOLUME	232 GAL	64 GAL	96 GAL	129 GAL	160 GAL	SAMPLE OBSERVATIONS: <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.2	7.0	9.0	9.4	9.2	
PH, UNITS	7.7	7.3	7.3 (7.1)	7.37	7.3	
SPECIFIC CONDUCTIVITY umhos/cm	513	516	516	518	516	

### EQUIPMENT DOCUMENTATION

PURGING	SAMPLING	EQUIPMENT ID	DECON FLUIDS USED	WATER LEVEL EQUIP. USED
<input type="checkbox"/>	<input checked="" type="checkbox"/>	PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER	<input checked="" type="checkbox"/> POTABLE WATER <input type="checkbox"/> LIQUINOX <input type="checkbox"/> STEAM CLEANING	<input type="checkbox"/> ELECTRIC COND. PROBE <input type="checkbox"/> FLOAT ACTIVATED <input type="checkbox"/> PRESSURE TRANSDUCER
		ISCO # GRUNDEOS# 2" 4" #		
			NUMBER OF FILTERS USED: 1	

### ANALYTICAL PARAMETERS

ANALYTICAL PARAMETERS	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			1408	022801C
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	S803	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			1408	022801C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		1409	020310C
CL	TT08	YES	4 DEG C	500 ML POLY		1410	
SC4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		1411	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1412	021230C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		1415	022801C
NG	99	NO	4 DEG C	1 L AG		1417	
NAM	UN06	NO	4 DEG C	1 L AG		1418	
DNT	UN26	NO	4 DEG C	1 L AG		1419	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GLM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historic volumes

SIGNATURE: [Signature] / DBD  
RECEIVED BY: Nancy E. Kotra

grd. elev. = 837.7

riser elev. = 839.76

300 = 762.34

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER S11106

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12-13-91

SITE ID S-11106

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1300 END 1500

PROGRAM C

WEATHER Sunny, 30's

### WATER LEVEL / WELL DATA

TOP OF WELL     PROTECTIVE CASING STICK-UP (FROM GROUND) 1.76 FT     PROTECTIVE CASING/WELL DIFF. -0.19 FT

MEASURED     HISTORICAL

WELL DEPTH 141.5 FT    WELL DIAMETER  2 INCH     4 INCH     6 INCH    GROUNDWATER ELEVATION (BGS) 75.82

WATER DEPTH 77.38 FT

HEIGHT OF WATER COLUMN 64.12 FT     .16 GAL/FT (2 IN)     .65 GAL/FT (4 IN)     1.5 GAL/FT (6 IN)     GAL/FT ( \_ IN)

51 GAL/VOL    255 TOTAL GAL PURGED    (255)

PURGE H2O CONTAINED?  YES     NO    WELL MATERIAL  PVC     SS    AMBIENT AIR 0 PPM    WELL MOUTH 0 PPM

WELL INTEGRITY: PROT. CASING SECURE  YES     NO     N/A  
 CONCRETE COLLAR INTACT  YES     NO     N/A  
 WELL LOCKED  YES     NO     N/A  
 OTHER:     

### PURGE DATA

	<u>1320</u>	<u>1330</u>	<u>1340</u>	<u>1350</u>	<u>1400</u>
PURGE VOLUME	<u>10.5</u>	<u>257</u> GAL	<u>102</u> GAL	<u>153</u> GAL	<u>209</u> GAL
TEMP, DEG C	<u>4.2</u>	<u>4.8</u>	<u>9.1</u>	<u>9.0</u>	<u>3.7</u>
PH, UNITS	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>454</u>	<u>452</u>	<u>456</u>	<u>455</u>	<u>447</u>

SAMPLE OBSERVATIONS

CLEAR     CLOUDY     COLORED     TURBID     ODOR     OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP    EQUIPMENT ID ISCO #    RECON FLUIDS USED  POTABLE WATER    WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE

SAMPLING  SUBMERSIBLE PUMP    GRUNDEOS# X    LIQUINOX     FLOAT ACTIVATED

BAILER     2"     4" #    STEAM CLEANING     PRESSURE TRANSDUCER

PVC/SILICON TUBING    NUMBER OF FILTERS USED 1

IN-LINE/DISPOSABLE FILTER    OTHER     

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	<u>1420</u> / / /	<u>022250.C</u>
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> CO	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1420</u> / / /	<u>022250.C</u>
<input checked="" type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1421</u> / / /	<u>02030.C</u>
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1422</u> / / /	/
<input checked="" type="checkbox"/> SO4	YES	4 DEG C		<input checked="" type="checkbox"/>	<u>1423</u> / / /	/
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1424</u> / <u>1425</u> / <u>1426</u>	<u>021250.C</u>
<input checked="" type="checkbox"/> TDS	NO	4 DEG C		<input checked="" type="checkbox"/>	<u>1427</u> / <u>1428</u> /	<u>022510.C</u>
<input checked="" type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	/ / /	/
<input checked="" type="checkbox"/> NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>1430</u> / / /	/
<input checked="" type="checkbox"/> DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>1431</u> / / /	/
<input checked="" type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>	/ / /	/

NOTES PP METALS (AG,AS,BE,CO,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SBO3,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,HG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SBO3,99 (TL:GFAA, K/NA:ICP)

-used historic volumes

SIGNATURE: [Signature]

RECEIVED BY: Wancy E.

Grd. elev. = 810.1

Riser elev. = 812.08

GW elev. = 762.66

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

3-1107

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID S-1107

JOB NUMBER 6853-04

SAMPLING DATE 12-13-91

LOCATION ACTIVITY START 1330 END 1500

PROGRAM C

FILE NAME CGW

WEATHER CLEAR 30°

### WATER LEVEL / WELL DATA

WELL DEPTH 74.43 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.62 FT

PROTECTIVE CASING/WELL DIFF. FLUSH FT

WATER DEPTH 44.42 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 47.80

HEIGHT OF WATER COLUMN 25.51 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

47 GAL/VOL

235 TOTAL GAL PURGED

235

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR .5 PPM

WELL MOUTH .5 PPM

### PURGE DATA

PURGE VOLUME	247 GAL	294 GAL	2141 GAL	2188 GAL	2235 GAL
TEMP, DEG C	9.9	9.9	10.1	10.0	10.0
PH, UNITS	7.4	7.3	7.4	7.4	7.3
SPECIFIC CONDUCTIVITY umhos/cm	391	389	392	389	389

### SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_  
GRUNDEFS# \_\_\_\_\_  
2" 4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1432	022201C
CA	SS16	HNO3 TO pH<2				
NA	SS16	HNO3 TO pH<2				
CD	SS16	HNO3 TO pH<2				
CR	SS16	HNO3 TO pH<2				
HG	SB03	HNO3 TO pH<2				
PB	SD24	HNO3 TO pH<2				
NI	SS16	HNO3 TO pH<2				
BA	SS16	HNO3 TO pH<2				
HARD	USEPA 130.2	HNO3 TO pH<2			1432	022201C
NIT	TF10	H2SO4 TO pH<2	500 ML POLY		1433	070310C
CL	TT08	4 DEG C	500 ML POLY		1434	
SO4	TT08	4 DEG C				
ALK	USEPA 310.1	4 DEG C	500 ML POLY		1435	
TDS	USEPA 160.1	4 DEG C				
TOC	USEPA 415.1	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	HCL, 4 DEG C	(3)40 ML VIAL		1436	021230C
BN/A	UM16	4 DEG C	(2) 1 L AG		1437	012810C
HG	99	4 DEG C	1 L AG		1441	
NAM	UN06	4 DEG C	1 L AG		1442	
DNT	UW26	4 DEG C	1 L AG		1443	
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: *Paul S. Hill*

RECEIVED BY: *Nancy E. Roto*

gru elev = 781.4 riser elev. = 780.74 G.W. elev. = 762.71

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

5-11103

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID S-11103

JOB NUMBER

6853-04

SAMPLING DATE

12/13/91

LOCATION ACTIVITY START 1510 END 1630

PROGRAM

C

FILE NAME

CGW

WEATHER

clear 25°

**WATER LEVEL / WELL DATA**

TOP OF WELL  
TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.11 FT

PROTECTIVE CASING/WELL DIFF.

-1.03 FT

WELL DEPTH 40.80 FT

MEASURED  
 HISTORICAL

WATER DEPTH 26.03 FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (EGS)

18.95

HEIGHT OF WATER COLUMN 20.77 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

46 GAL/VOL

230 TOTAL GAL PURGED

(230)

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: CA

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR .6 PPM

WELL MOUTH .6 PPM

**PURGE DATA**

PURGE VOLUME	@ 46 GAL	@ 92 GAL	@ 138 GAL	@ 184 GAL	@ 230 GAL
TEMP, DEG C	9.4	9.4	9.5	9.3	9.4
pH, UNITS	7.2	7.1	7.2	7.1	7.1
SPECIFIC CONDUCTIVITY umhos/cm	344	314	312	314	314

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

PERISTALTIC PUMP EQUIPMENT ID ISCO #  
SUBMERSIBLE PUMP GRUNDEDS#  
BAILER 2" 4" #  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1444	022301C
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1444	022301C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1445	020310C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1446	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1447	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1448 1449 1450	021230C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1451 1452	022301C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1453	
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1454	
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1455	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: Paul S. H. Lee

RECEIVED BY: Nancy E. ...



710  
ELEV = 8547

710  
ELEV = 85633

710  
ELEV = 70079

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

51109

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID S-11109

JOB NUMBER 6853-04

SAMPLING DATE 12.12.91

LOCATION ACTIVITY START 1405 END 1500

PROGRAM C

FILE NAME CGW

WEATHER FOGGY BREEZING 40°

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.71 FT

PROTECTIVE CASING/WELL DIFF. -.23 FT

WELL DEPTH 109.21 FT

MEASURED  
 HISTORICAL

WATER DEPTH 89.79 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 88.31

HEIGHT OF WATER COLUMN 19.42 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

36 GAL/VOL

180 TOTAL GAL PURGED (180)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR - PPM

WELL MOUTH - PPM

### PURGE DATA

PURGE VOLUME	236 GAL	272 GAL	2108 GAL	2144 GAL	2180 GAL
TEMP, DEG C	16.9	10.8	10.8	10.7	10.6
pH, UNITS	7.5	7.3	7.2	7.2	7.3
SPECIFIC CONDUCTIVITY umhos/cm	487	403	407	478	474

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			2072	0222501C
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG S803	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			2072	0222501C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		2073	0703101C
CL TT08	YES	4 DEG C	500 ML POLY		2074	
SC4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		2075	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		2076	0212301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		2077	
NG 99	NO	4 DEG C	1 L AG		2078	0228101C
NAM UM06	NO	4 DEG C	1 L AG			
DNT UM26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: ALICE L. JONES

RECEIVED BY: Nancy E. Rora

grd = 2025 flow = 813.5 2130 = 74.05

**ABB ENVIRONMENTAL SERVICES, INC.**

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

S11110

PROJECT USATHANA-BAAP

SITE TYPE

WELL

SITE ID S-11110

JOB NUMBER

6853-04

SAMPLING DATE

12-12-91

LOCATION ACTIVITY START 0830 END 1000

PROGRAM

C

FILE NAME

CGW

WEATHER

RAIN 45°

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.17 FT

PROTECTIVE CASING/WELL DIFF.

FLUSH FT

WELL DEPTH 65.52 FT

MEASURED  
 HISTORICAL

WATER DEPTH 47.07 FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

44.90

HEIGHT OF WATER COLUMN 18.45 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

33 GAL/VOL

165 TOTAL GAL PURGED

(165)

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: CAP

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

**PURGE DATA**

PURGE VOLUME	23 GAL	46 GAL	99 GAL	122 GAL	165 GAL
TEMP, DEG C	10.8	10.7	10.7	10.8	10.7
PH, UNITS	7.5	7.5	7.4	7.4	7.4
SPECIFIC CONDUCTIVITY umhos/cm	522	397	397	390	391

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

REFCON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG S803	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1713 / 0703101C
CL TT08	YES	4 DEG C	500 ML POLY		1711
SC4 TT08	YES	4 DEG C	500 ML POLY		1712
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1714
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		
BN/A UM16	NO	4 DEG C	(2) 1 L AG		
NG 99	NO	4 DEG C	1 L AG		
NAM UM06	NO	4 DEG C	1 L AG		
DNT UM26	NO	4 DEG C	1 L AG		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,HG,MN,NG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: *ReCS/1/100*

RECEIVED BY: *Nancy E. [Signature]*

7.1  
ELEV = 746.5

Riser  
ELEV = 848.62

GLW  
ELEV = 769.03

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

511111

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID S-111111

JOB NUMBER 6853-04

SAMPLING DATE 12 12 91

LOCATION ACTIVITY START 1030 END 1200

PROGRAM C

FILE NAME CGW

WEATHER Rain 45°

### WATER LEVEL / WELL DATA

WELL DEPTH 100.95 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.09 FT

PROTECTIVE CASING/WELL DIFF. -.12 FT

WATER DEPTH 79.74 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 77.77

HEIGHT OF WATER COLUMN 21.21 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_\_\_ IN)

38 GAL/VOL

190 TOTAL GAL PURGED

190

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR \_\_\_ PPM

WELL MOUTH \_\_\_ PPM

YES NO N/A

### PURGE DATA

PURGE VOLUME

2 38 GAL	2 76 GAL	2 114 GAL	2 152 GAL	2 190 GAL
10.6	10.8	10.8	10.8	10.8
7.5	7.3	7.3	7.4	7.3
385	382	383	381	384

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS #  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		ESS lot #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		1723
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1721
CL TT08	YES	4 DEG C	500 ML POLY		1722
SO4 TT08	YES	4 DEG C			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1724
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		
BN/A UM16	NO	4 DEG C	(2) 1 L AG		
HG 99	NO	4 DEG C	1 L AG		
NAM UM06	NO	4 DEG C	1 L AG		
DNT UM26	NO	4 DEG C	1 L AG		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: Bill S. Hill

RECEIVED BY: Nancy E. Roper

and elev = 836.1

riser elev = 838.27

GW elev = 772.09

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 0

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

51112

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID

S-11112

JOB NUMBER

6853-04

SAMPLING DATE

11-24-91

LOCATION ACTIVITY

START 1445 END 1600

PROGRAM

C

FILE NAME

CGW

WEATHER

clear 20's

### WATER LEVEL / WELL DATA

WELL DEPTH

035 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.81 FT

PROTECTIVE CASING/WELL DIFF.

3.00 FT

WATER DEPTH

36.2 FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

64.39

HEIGHT OF WATER COLUMN

27.3 FT

0.16 GAL/FT (2 IN)  
 0.65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

250 GAL/VOL

250 TOTAL GAL PURGED

(250)

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: up

YES  NO  N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.9 PPM

WELL MOUTH 0.4 PPM

### PURGE DATA

PURGE VOLUME

0.50 GAL 0.100 GAL 0.150 GAL 0.200 GAL 0.250 GAL

TEMP, DEG C

9.0 9.5 9.5 9.6 9.3

pH, UNITS

7.7 7.7 7.6 7.6 7.7

SPECIFIC CONDUCTIVITY umhos/cm

541 533 538 527 533

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID

ISCO #  
GROUNDOS#  
 2"  4" #

REC'D FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA SS16	YES	HNO3 TO pH<2			
NA SS16	YES	HNO3 TO pH<2			
CD SS16	YES	HNO3 TO pH<2			
CR SS16	YES	HNO3 TO pH<2			
HG SB03	YES	HNO3 TO pH<2			
PB SD24	YES	HNO3 TO pH<2			
NI SS16	YES	HNO3 TO pH<2			
BA SS16	YES	HNO3 TO pH<2			
HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	1733	0703101C
CL TT08	YES	4 DEG C	500 ML POLY	1731	
SO4 TT08	YES	4 DEG C	500 ML POLY	1732	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	1734	
TDS USEPA 160.1	NO	4 DEG C			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		
BN/A UM16	NO	4 DEG C	(2) 1 L AG		
NG 99	NO	4 DEG C	1 L AG		
NAM UN06	NO	4 DEG C	1 L AG		
DNT UW26	NO	4 DEG C	1 L AG		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM		

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:APP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:IC)

used historical volumes

SIGNATURE:

RECEIVED BY:

*Nancy E.*  
Nancy E.

819.9

821.56

733.99\*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

51113

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID S-11113

JOB NUMBER 6853-04

SAMPLING DATE 11-23-91

LOCATION ACTIVITY START 0815 END 0930

PROGRAM C

FILE NAME CGW

WEATHER heavy rain, 40's

### WATER LEVEL / WELL DATA

TOP OF WELL  
TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.95 FT

PROTECTIVE CASING/WELL DIFF. -0.53 FT

WELL DEPTH FT

MEASURED  
HISTORICAL

WATER DEPTH 87.57 FT

WELL DIAMETER 2 INCH  
6 INCH

GROUNDWATER ELEVATION 87.18

HEIGHT OF WATER COLUMN FT

.16 GAL/FT (2 IN)  
.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)

35 GAL/VOL  
175 TOTAL GAL PURGED (175)

WELL INTEGRITY: PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: cap

PURGE H2O CONTAINED? YES NO

WELL MATERIAL PVC SS

AMBIENT AIR PPM

WELL MOUTH PPM

### PURGE DATA

PURGE VOLUME	@ 35 GAL	@ 70 GAL	@ 105 GAL	@ 140 GAL	@ 175 GAL
TEMP, DEG C	9.2	9.2	9.1	9.2	9.3
PH, UNITS	7.3	7.4	7.4	7.4	7.4
SPECIFIC CONDUCTIVITY umhos/cm	552	553	552	552	557

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING  
PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GROUND POS#  
2" 4" #

DECON FLUIDS USED  
POTABLE WATER  
LIQUINOX  
STEAM CLEANING

WATER LEVEL EQUIP. USED  
ELECTRIC COND. PROBE  
FLOAT ACTIVATED  
PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1741	02229.C
CA	SS16	YES	HNO3 TO pH<2			
NA	SS16	YES	HNO3 TO pH<2			
CD	SS16	YES	HNO3 TO pH<2			
CR	SS16	YES	HNO3 TO pH<2			
HG	SB03	YES	HNO3 TO pH<2			
PB	SD24	YES	HNO3 TO pH<2			
NI	SS16	YES	HNO3 TO pH<2			
BA	SS16	YES	HNO3 TO pH<2			
HARD	USEPA 130.2	YES	HNO3 TO pH<2		1741	02229.C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	1742	04280.C
CL	TT08	YES	4 DEG C	500 ML POLY	1743	
SO4	TT08	YES	4 DEG C			
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	1744	
TDS	USEPA 160.1	NO	4 DEG C			
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	UM17	NO	NCL, 4 DEG C	(3) 40 ML VIAL	1745	021230.C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	1746	022910.C
NG	99	NO	4 DEG C	1 L AG		
NAM	UN06	NO	4 DEG C	1 L AG		
DNT	UW26	NO	4 DEG C	1 L AG		
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: *[Signature]*  
RECEIVED BY: Nancy E. Rotca

-N: HNO3 used  
-could not get well depth (used historical)  
-historical well depth 87.57

grid elev = 3197

water elev. = 201.57

310 = 733.27

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

011114

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID 0-11114

JOB NUMBER

6853-04

SAMPLING DATE

11-23-91

LOCATION ACTIVITY START 0945 END 1130

PROGRAM

C

FILE NAME

CGW

WEATHER

heavy rain

### WATER LEVEL / WELL DATA

WELL DEPTH 105.1 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
TOP OF CASING

PROTECTIVE  
CASING STICK-UP  
(FROM GROUND)

1.42 FT

PROTECTIVE  
CASING/WELL DIFF.

-1.76 FT

WATER DEPTH 27.4 FT

WELL  
DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER  
ELEVATION  
(BGIS)

86.72

HEIGHT OF  
WATER COLUMN 17.7 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

50 GAL/VOL

TOTAL GAL PURGED

250

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: CAP

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR PPM

WELL MOUTH PPM

### PURGE DATA

PURGE VOLUME	@ 1.5 GAL	@ 3.0 GAL	@ 4.5 GAL	@ 6.0 GAL	@ 7.5 GAL
TEMP, DEG C	9.0	11.2	8.9	9.1	J.M
pH, UNITS	7.4	7.2	7.5	7.5	7.6
SPECIFIC CONDUCTIVITY umhos/cm	434	430	435	435	437

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS# \_\_\_\_\_  
 BAILER  2" 4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	ESS lot #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1750 / / / 022280.C
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1750 / / / 022280.C
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1751 / / / 042810.C
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1752 / / /
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1753 / / /
ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>	
TDS	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>	
TCC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input type="checkbox"/>	
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>	
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input type="checkbox"/>	1754 / 1755 / 1756 / 021230.C
BN/A	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>	1757 / 1758 / / 022810.C
AG	NO	4 DEG C	1 L AG	<input type="checkbox"/>	
NAM	NO	4 DEG C	1 L AG	<input type="checkbox"/>	
DNT	NO	4 DEG C	1 L AG	<input type="checkbox"/>	
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1C)

-used historical volumes

SIGNATURE: *Nancy E. P...*  
 RECEIVED BY: *Nancy E. P...*

Flow = 86.0 riser elev. = 865.37

GW elev. = 770.57

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_ OF \_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

S 1 1 1 5

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID

S-11115

JOB NUMBER

6853-04

SAMPLING DATE

11 24 91

LOCATION ACTIVITY

START 0900 END 1030

PROGRAM

C

FILE NAME

CGW

WEATHER

prt. cloudy 20% S

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.7 FT

PROTECTIVE CASING/WELL DIFF.

- 0.3 FT

WELL DEPTH

110.95 FT

MEASURED  
 HISTORICAL

WATER DEPTH

92.25 FT

WELL DIAMETER

2 INCH  
~~4 INCH~~  
6 INCH

GROUNDWATER ELEVATION (GWS)

90.13

HEIGHT OF WATER COLUMN

8.2 FT

1.6 GAL/FT (2 IN)  
65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)  
GAL/FT (IN)

39 GAL/VOL

195 TOTAL GAL PURGED (195)

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: cap

YES NO N/A

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR: A PPM

WELL MOUTH: 0.9 PPM

**PURGE DATA**

PURGE VOLUME

0.31 GAL 0.70 GAL 0.117 GAL 0.150 GAL 0.195 GAL

TEMP, DEG C

9.5 9.1 9.2 9.4 6.6

PH, UNITS

8.0 7.76 7.7 7.6 7.7

SPECIFIC CONDUCTIVITY umhos/cm

447 432 433 433 430

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		2192 /	022230: C
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CO SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			2192 /	022230: C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		2193 /	022230: C
CL TT08	YES	4 DEG C	500 ML POLY		2194 /	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		2195 /	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		2196 /	2197 2198 021230: C
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG		2199 /	022230: C
NAM UN06	NO	4 DEG C	1 L AG			
DNT UM26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/AA:1CP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/AA:1CP)

- used historical volumes

SIGNATURE: *[Signature]*  
RECEIVED BY: *Nancy E. Pofka*

QTY = 8604    M SER = 862.31    GW = 770.51  
 PLEU = 8604    PLEU = 862.31    PLEU = 770.51

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 0

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

51116

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 11-20-91

SITE ID S-11116

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1045 END 1145

PROGRAM C

WEATHER part cloudy 20°

### WATER LEVEL / WELL DATA

WELL DEPTH 190.8 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.64 FT

PROTECTIVE CASING/WELL DIFF. 0.45 FT

WATER DEPTH 91.8 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BAS) 87.61

HEIGHT OF WATER COLUMN 99.0 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

82 GAL/VOL

410 TOTAL GAL PURGED

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 OTHER:  YES  NO  N/A

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR --- PPM

WELL MOUTH --- PPM

### PURGE DATA

PURGE VOLUME

PURGE VOLUME	<u>82</u> GAL	<u>164</u> GAL	<u>246</u> GAL	<u>328</u> GAL	<u>410</u> GAL
TEMP, DEG C	<u>8.7</u>	<u>9.2</u>	<u>7.4</u>	<u>9.5</u>	<u>8.8</u>
PH, UNITS	<u>7.4</u>	<u>7.2</u>	<u>7.0</u>	<u>7.3</u>	<u>7.1</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>496</u>	<u>517</u>	<u>514</u>	<u>515</u>	<u>543</u>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID

ISCO # \_\_\_\_\_  
 CRUNFOS# \_\_\_\_\_  
 2"  4"  # \_\_\_\_\_

RECON FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		<u>2200</u> /	<u>022292.C</u>
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2			<u>2200</u> /	<u>022292.C</u>
<input type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>2201</u> /	<u>022210.C</u>
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		<u>2202</u> /	
<input type="checkbox"/> SO4 TT08	YES	4 DEG C	500 ML POLY		<u>2203</u> /	
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>2204</u> / <u>2205</u> / <u>2206</u> /	<u>022292.C</u>
<input type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG			
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG		<u>2207</u> /	<u>022292.C</u>
<input type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: *[Signature]*

RECEIVED BY: *[Signature]*



INTL  
ELEV = 855.6

Riser  
ELEV = 264.40

ELEV = 757.63

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 011117

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 11-20-97

SITE ID S-11117

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1030 END 1130

PROGRAM C

WEATHER part cloudy with

### WATER LEVEL / WELL DATA

WELL DEPTH 121.0 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 21.71 FT

PROTECTIVE CASING/WELL DIFF. -0.12 FT

WATER DEPTH 94.78 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 93.19

HEIGHT OF WATER COLUMN 26.22 FT X  1.6 GAL/FT (2 IN)  
 1.65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( \_ IN)

21 GAL/VOL

TOTAL GAL PURGED 105

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: \_\_\_\_\_

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  AL  SS  PVC

AMBIENT AIR 1.0 PPM

WELL MOUTH 1.0 PPM

### PURGE DATA

PURGE VOLUME	<u>43</u>	<u>86</u>	<u>129</u>	<u>172</u>	<u>215</u>
TEMP, DEG C	<u>7.6</u>	<u>8.0</u>	<u>8.4</u>	<u>8.1</u>	<u>8.4</u>
pH, UNITS	<u>7.87</u>	<u>7.50</u>	<u>7.74</u>	<u>7.71</u>	<u>7.70</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>619</u>	<u>620</u>	<u>622</u>	<u>624</u>	<u>622</u>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

SAMPLING  ISCO # \_\_\_\_\_  
 BRUNNEN# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

EQUIPMENT ID \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	H2SO4 TO pH<2	500 ML POLY			
CL	YES	4 DEG C	500 ML POLY			
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TCC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GUM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*purge H2O contained with for VOCs  
- used historical volumes  
- see calculations for volumes

SIGNATURE: Paul E. Smith  
RECEIVED BY: Nancy E. Floria

REV = 8720 5321 2120 = 27477 500 = 77419

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

PROJECT: USATHAMA-BAAP  
 SITE ID: 5-11118  
 LOCATION ACTIVITY: START 1300 END 1400

FIELD SAMPLING NUMBER: 5-11118  
 SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C

SAMPLING DATE: 12-12-91  
 FILE NAME: CGW  
 WEATHER: Rain 40°

**WATER LEVEL / WELL DATA**

WELL DEPTH: 110.1 FT  
 WATER DEPTH: 100.8 FT  
 HEIGHT OF WATER COLUMN: 9.3 FT  
 MEASURED HISTORICAL  
 TOP OF WELL TOP OF CASING: 2.16 FT  
 PROTECTIVE CASING STICK-UP (FROM GROUND): 2.16 FT  
 PROTECTIVE CASING/WELL DIFF.: -0.12 FT  
 WELL DIAMETER: 2 INCH  
 GROUNDWATER ELEVATION (EGS): 98.72  
 HEIGHT OF WATER COLUMN: 9.3 FT X .16 GAL/FT (2 IN) = 6.0 GAL/VOL  
 .65 GAL/FT (4 IN) = 80 TOTAL GAL PURGED  
 1.5 GAL/FT (6 IN) = 80  
 PURGE H2O CONTAINED? YES NO  
 WELL MATERIAL: PVC SS  
 AMBIENT AIR PPM WELL MOUTH PPM  
 WELL INTEGRITY: PROT. CASING SECURE CONCRETE COLLAR INTACT WELL LOCKED OTHER:

**PURGE DATA**

PURGE VOLUME	1314	1323	1327	1331	1335	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
PURGE VOLUME	216 GAL	232 GAL	248 GAL	264 GAL	280 GAL	
TEMP, DEG C	10.7	10.5	10.8	10.6	10.9	
PH, UNITS	7.7	7.7	7.6	7.6	7.6	
SPECIFIC CONDUCTIVITY umhos/cm	558	554	556	558	547	

**EQUIPMENT DOCUMENTATION**

PURGING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER  
 SAMPLING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  
 EQUIPMENT ID: ISCO # \_\_\_\_\_ GRUNDEOS# \_\_\_\_\_  
 RECON. FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED: 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			
CA	YES	HNO3 TO pH<2			
NA	YES	HNO3 TO pH<2			
CD	YES	HNO3 TO pH<2			
CR	YES	HNO3 TO pH<2			
HG	YES	HNO3 TO pH<2			
PB	YES	HNO3 TO pH<2			
NI	YES	HNO3 TO pH<2			
BA	YES	HNO3 TO pH<2			
HARD	YES	HNO3 TO pH<2			
NIT	YES	H2SO4 TO pH<2	500 ML POLY		
CL	YES	4 DEG C	500 ML POLY		
SO4	YES	4 DEG C	500 ML POLY		
ALK	NO	4 DEG C	500 ML POLY		
TDS	NO	4 DEG C			
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		
BN/A	NO	4 DEG C	(2) 1 L AG		
NC	NO	4 DEG C	1 L AG		
NAM	NO	4 DEG C	1 L AG		
DNT	NO	4 DEG C	1 L AG		
TPH	NO	H2SO4 TO pH<2	1 L GUM		

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: *D. D. [Signature]*  
 RECEIVED BY: *Nancy E. [Signature]*

165  
 2/15  
 2/15

AW PLAN = 877.6

Riser PLAN = 879.69

GW PLAN = 775.52

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

51119

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12.10.91

SITE ID S-11119

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1430 END 1530

PROGRAM C

WEATHER CLEAR 30°

### WATER LEVEL / WELL DATA

WELL DEPTH 126.6 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.75 FT

PROTECTIVE CASING/WELL DIFF. 10.0 FT

WATER DEPTH 104.17 FT

WELL DIAMETER 2 INCH

GROUNDWATER ELEVATION (BGS) 102.43

HEIGHT OF WATER COLUMN 22.43 FT

.16 GAL/FT (2 IN)  
.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)

31 GAL/VOL

155 TOTAL GAL PURGED (155)

WELL INTEGRITY: PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
OTHER: CAP

YES NO N/A  
[ ] [ ] [ ]  
[ ] [ ] [ ]  
[ ] [ ] [ ]

PURGE H2O CONTAINED? YES NO

WELL MATERIAL PVC SS

AMBIENT AIR 0.5 PPM

WELL MOUTH 0.3 PPM

### PURGE DATA

PURGE VOLUME

15.05 @ 31 GAL

15.17 @ 6.2 GAL

15.27 @ 9.3 GAL

15.41 @ 10.4 GAL

15.53 @ 15.5 GAL

TEMP, DEG C

10.4

10.4

10.5

10.5

10.5

pH, UNITS

4.27

4.22

4.23

4.18

4.27

SPECIFIC CONDUCTIVITY umhos/cm

66.3

65.0

64.1

63.2

62.8

SAMPLE OBSERVATIONS  
[ ] CLEAR  
[ ] CLOUDY  
[ ] COLORED  
[ ] TURBID  
[ ] OOR  
[ ] OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID

ISCO #  
GRUNDFOS #  
2" 4" #

DECON FLUIDS USED

POTABLE WATER  
LIQUINOX  
STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
FLOAT ACTIVATED  
PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG S803	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UM06	NO	4 DEG C	1 L AG			
DNT UM26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GLM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: [Signature] RR

RECEIVED BY: Nancy E. Rota

grd elev = 877.06

rise elev = 879.76

cell elev = 753.77

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 01

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

31120

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12-8-91

SITE ID S-11120

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1430 END 1515

PROGRAM C

WEATHER 5994.30 S

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 254 FT

PROTECTIVE CASING/WELL DIFF. .2 FT

WELL DEPTH 105.15 FT  MEASURED  HISTORICAL

WATER DEPTH 125.99 FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 123.65

HEIGHT OF WATER COLUMN 20 FT X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

34 GAL/VOL  
169 TOTAL GAL PURGED

WELL INTEGRITY: YES  NO  N/A   
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: cap

PURGE H2O CONTAINED?  YES  NO  
WELL MATERIAL  PVC  SS  
AMBIENT AIR  PPM  
WELL MOUTH  PPM

### PURGE DATA

pump rate - 5 gpm  
PURGE VOLUME

	<u>34</u> GAL	<u>68</u> GAL	<u>102</u> GAL	<u>136</u> GAL	<u>170</u> GAL
TEMP, DEG C	<u>9.9</u>	<u>9.9</u>	<u>10.0</u>	<u>10.0</u>	<u>10.1</u>
PH, UNITS	<u>7.8</u>	<u>7.7</u>	<u>7.7</u>	<u>7.7</u>	<u>7.70</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>535</u>	<u>532</u>	<u>532</u>	<u>534</u>	<u>532</u>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODCR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

EQUIPMENT ID  
ISCO # 82  
GRUNDFOS # 4

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROSE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/>	PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/>	TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/>	CA	YES	HNO3 TO pH<2				
<input type="checkbox"/>	NA	YES	HNO3 TO pH<2				
<input type="checkbox"/>	CD	YES	HNO3 TO pH<2				
<input type="checkbox"/>	CR	YES	HNO3 TO pH<2				
<input type="checkbox"/>	HG	YES	HNO3 TO pH<2				
<input type="checkbox"/>	PB	YES	HNO3 TO pH<2				
<input type="checkbox"/>	NI	YES	HNO3 TO pH<2				
<input type="checkbox"/>	BA	YES	HNO3 TO pH<2				
<input type="checkbox"/>	HARD	YES	HNO3 TO pH<2				
<input type="checkbox"/>	NIT	YES	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/>	CL	YES	4 DEG C	500 ML POLY			
<input type="checkbox"/>	SO4	YES	4 DEG C	500 ML POLY			
<input type="checkbox"/>	ALK	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/>	TDS	NO	4 DEG C				
<input type="checkbox"/>	TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
<input type="checkbox"/>	NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/>	VOC	NO	MCL, 4 DEG C	(3) 40 ML VIAL			
<input type="checkbox"/>	BN/A	NO	4 DEG C	(2) 1 L AG			
<input type="checkbox"/>	NG	NO	4 DEG C	1 L AG			
<input type="checkbox"/>	NAM	NO	4 DEG C	1 L AG			
<input type="checkbox"/>	DNT	NO	4 DEG C	1 L AG			
<input type="checkbox"/>	TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-see attached for volumes

SIGNATURE: Arnon Cohen / TV

RECEIVED BY: Nancy E. Pa...

$\frac{31}{22} = 813.7$   $\frac{153}{21} = 815.43$   $\frac{172}{25} = 775.2$

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

51121

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **12.9.91**

SITE ID **5-11121**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1530 END 1630**

PROGRAM **C**

WEATHER **CLEAR 31**

**WATER LEVEL / WELL DATA**

TOP OF WELL PROTECTIVE  
 TOP OF CASING CASING STICK-UP (FROM GROUND)

PROTECTIVE CASING/WELL DIFF. **-0.51 FT**

WELL DEPTH **60.75 FT**

MEASURED  
 HISTORICAL

**1.97 FT**

WATER DEPTH **40.73 FT**

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS) **38.77**

HEIGHT OF WATER COLUMN **20.72 FT** X

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_\_\_ IN)

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 OTHER:

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **0.5 PPM**

WELL MOUTH **0.5 PPM**

**31 GAL/VOL**

**172 TOTAL GAL PURGED**

**172**

**PURGE DATA**

PURGE VOLUME	@ 34 GAL	@ 63 GAL	@ 102 GAL	@ 136 GAL	@ 172 GAL
TEMP, DEG C	8.3	7.5	7.8	9.1	9.1
PH, UNITS	8.21	8.46	8.15	8.28	8.23
SPECIFIC CONDUCTIVITY umhos/cm	228	220	201	247	240

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING SAMPLING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID

ISCO # \_\_\_\_\_  
 GRUNDFOS # \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1759	022760.C
CA	SS16	HNO3 TO pH<2				
NA	SS16	HNO3 TO pH<2				
CD	SS16	HNO3 TO pH<2				
CR	SS16	HNO3 TO pH<2				
HG	S803	HNO3 TO pH<2				
PB	SD24	HNO3 TO pH<2				
NI	SS16	HNO3 TO pH<2				
BA	SS16	HNO3 TO pH<2				
HARD	USEPA 130.2	HNO3 TO pH<2			1759	022230.C
NIT	TF10	H2SO4 TO pH<2	500 ML POLY		1760	070310.C
CL	TT08	4 DEG C	500 ML POLY		1761	
SO4	TT08	4 DEG C	500 ML POLY		1762	
ALK	USEPA 310.1	4 DEG C	500 ML POLY			
TDS	USEPA 160.1	4 DEG C				
TOC	USEPA 415.1	H2SO4 TO pH<2	(3)40 ML VIAL			
MN3+2	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	HCL, 4 DEG C	(3)40 ML VIAL		1763 / 1764 / 1765	021230.C
BN/A	UM16	4 DEG C	(2) 1 L AG		1766 / 1767	021230.C
NG	99	4 DEG C	1 L AG			
NAM	UN06	4 DEG C	1 L AG			
DNT	UW26	4 DEG C	1 L AG			
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GUM			

**NOTES** PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)

- see attached for volumes

SIGNATURE: *Nancy E. Rofa*

RECEIVED BY: *Nancy E. Rofa*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER S11122

PROJECT USATHAMA-BAAP  
 SITE ID S-11122  
 LOCATION ACTIVITY START 1900 END 1950

SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C

SAMPLING DATE 12-7-98  
 FILE NAME CGW  
 WEATHER Clear, 50°

### WATER LEVEL / WELL DATA

WELL DEPTH 146.25 FT  MEASURED  HISTORICAL  
 WATER DEPTH 29.70 FT  
 HEIGHT OF WATER COLUMN 16.47 FT  
 TOP OF WELL  TOP OF CASING  PROTECTIVE CASING STICK-UP (FROM GROUND) 2.10 FT  
 PROTECTIVE CASING/WELL DIFF. 0.00 FT  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION (BGs) 127.68  
 .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (IN)   
 14 GAL/VOL  
 TOTAL GAL PURGED: 70  
 PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 1 PPM  
 WELL MOUTH 1 PPM  
 WELL INTEGRITY: PROT. CASING SECURE  CONCRETE COLLAR INTACT  WELL LOCKED  OTHER: Cup

### PURGE DATA

	06	13	16	23	28	SAMPLE OBSERVATIONS
PURGE VOLUME	14 GAL	20 GAL	97 GAL	56 GAL	70 GAL	<input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> COCR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	11.0	11.3	11.2	11.4	11.5	
PH, UNITS	7.4	7.21	7.22	7.2	7.1	
SPECIFIC CONDUCTIVITY umhos/cm	630	610	631	629	602	

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER   
 EQUIPMENT ID ISCO # \_\_\_\_\_ GROUNDSS# \_\_\_\_\_ 2"  4"   
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING   
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER   
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

PP METALS (SPECIFIED BELOW)	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESL# #
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY		378	ESL# 022801C
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			878	022801C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		879	022801C
CL	TT08	YES	4 DEG C	500 ML POLY		880	
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		881	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	NCL, 4 DEG C	(3)40 ML VIAL		882	022801C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		885	022801C
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG		887	022801C
DNT	UV26	NO	4 DEG C	1 L AG		888	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]

3rd  
MW = 867.0

riser  
elev. = 868.79

GW  
elev. = 779.03

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP

SITE ID: S-11123

LOCATION ACTIVITY: START 0730 END 0930

FIELD SAMPLING NUMBER: 51123

SITE TYPE: WELL

JOB NUMBER: 6853-04

PROGRAM: C

SAMPLING DATE: 12-5-91

FILE NAME: CGW

WEATHER: SNOW 11°

### WATER LEVEL / WELL DATA

WELL DEPTH: 136 FT

WATER DEPTH: 89.71 FT

HEIGHT OF WATER COLUMN: 46.29 FT

MEASURED  HISTORICAL

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND): 1.8 FT

PROTECTIVE CASING/WELL DIFF.: -1.0 FT

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS): 88.01

HEIGHT OF WATER COLUMN x .16 GAL/FT (2 IN) = 85 GAL/VOL

x .65 GAL/FT (4 IN) = 425 TOTAL GAL PURGED (425)

x 1.5 GAL/FT (6 IN) =

x GAL/FT (IN)

PURGE H<sub>2</sub>O CONTAINED?  YES  NO

WELL MATERIAL:  PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

OTHER: CAP

### PURGE DATA

	8:47	9:04	9:21	9:38	9:55
PURGE VOLUME	85 GAL	170 GAL	255 GAL	340 GAL	425 GAL
TEMP, DEG C	7.3	7.9	8.6	8.2	8.1
pH, UNITS	7.72	7.78	7.90	7.95	7.90
SPECIFIC CONDUCTIVITY umhos/cm	568	581	574	572	570

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  OOR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID: ISCO #

SUBMERSIBLE PUMP  GRUNDFOS#

BAILER  2" 4" #

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER: \_\_\_\_\_

RECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	2081	022285C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	2081	0222501C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	2082	0205101C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	2083	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	2084	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	2085 / 2086 / 2087	0212311C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	2086 / 2087	0225101C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UN26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: Nancy E. Potra

RECEIVED BY: Nancy E. Potra

Flow = 876.0

Flow = 379.83

GW PLAU = 776.13

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

51124

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID S-1124

JOB NUMBER

6853-04

SAMPLING DATE

2/1/91

LOCATION ACTIVITY START 10:51 END 13:25

PROGRAM

C

FILE NAME

CGW

WEATHER

Sunny

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.71 FT

PROTECTIVE CASING/WELL DIFF.

-1.13 FT

WELL DEPTH 136.5 FT

MEASURED  
 HISTORICAL

WATER DEPTH 105.7 FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

102.12

HEIGHT OF WATER COLUMN 32.8 FT x .16 GAL/FT (2 IN) = 5.25 GAL/VOL  
1.5 GAL/FT (6 IN) = 49.2 GAL/VOL  
GAL/FT (IN)

50 TOTAL GAL PURGED

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER:

YES NO N/A

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.3 PPM

WELL MOUTH 0.2 PPM

### PURGE DATA

PURGE VOLUME	20 GAL	40 GAL	60 GAL	80 GAL	100 GAL
TEMP, DEG C	9.9	10.5			
pH, UNITS	3.35	3.31			
SPECIFIC CONDUCTIVITY umhos/cm	305	311			

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS #  
2" 4" #

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG S803	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	1579		022301C
CL TT08	YES	4 DEG C	500 ML POLY	1580		022301C
SO4 TT08	YES	4 DEG C	500 ML POLY	1581		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	1582		
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	1583		022301C
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL	1584	1525	1586
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG	1587		022301C
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

PURGED DRY @ 25 gpd  
REMOVED @ 20 MINUTES  
PURGED DRY - WAITED 20 MIN. SAMPLED

SIGNATURE: Jamie Lee CR  
RECEIVED BY: W. Nancy E. [Signature]



and elev = 1109 7888 elev = 895-4 110 = 114 53

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

01125

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12-10-91

SITE ID 0-11125

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1315 END 1415

PROGRAM C

WEATHER CLEAR 40'

### WATER LEVEL / WELL DATA

WELL DEPTH 1275 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 330 FT

PROTECTIVE CASING/WELL DIFF. -2.34 FT

WATER DEPTH 121.1 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

18 GAL/VOL

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 120.15

HEIGHT OF WATER COLUMN 837 FT

TOTAL GAL PURGED 90

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 OTHER: CAP

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.4 PPM

WELL MOUTH 0.4 PPM

### PURGE DATA

PURGE VOLUME	13:27	13:54	13:47	13:50	14:05
	18 GAL	36 GAL	51 GAL	72 GAL	70 GAL
TEMP, DEG C	10.7	10.9	11.1	11.0	10.9
pH, UNITS	8.42	8.36	8.47	8.45	8.44
SPECIFIC CONDUCTIVITY umhos/cm	544	523	552	460	553

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS# \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_

RECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	HNO3 TO pH<2				
NA	SS16	HNO3 TO pH<2				
CD	SS16	HNO3 TO pH<2			1624	0222801C
CR	SS16	HNO3 TO pH<2				
PG	S803	HNO3 TO pH<2				
PB	SD24	HNO3 TO pH<2				
NI	SS16	HNO3 TO pH<2				
BA	SS16	HNO3 TO pH<2				
HARD	USEPA 130.2	HNO3 TO pH<2			1624	0222801C
NIT	TF10	H2SO4 TO pH<2	500 ML POLY		1625	0703101C
CL	TT08	4 DEG C	500 ML POLY		1626	
SO4	TT08	4 DEG C				
ALK	USEPA 310.1	4 DEG C	500 ML POLY		1627	
TDS	USEPA 160.1	4 DEG C				
TOC	USEPA 415.1	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY		1628	0703101C
VOC	UM17	HCL, 4 DEG C	(3)40 ML VIAL		1629 / 1630 / 1631	0212201C
BN/A	UM16	4 DEG C	(2) 1 L AG			
NG	99	4 DEG C	1 L AG		1632	0228101C
NAM	UN06	4 DEG C	1 L AG			
DNT	UN26	4 DEG C	1 L AG			
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16/SD24,S803,99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: Nancy E. Rota

RECEIVED BY: Nancy E. Rota

217 = 747 FIELD = 375.75 310 = 755.05

**ABB ENVIRONMENTAL SERVICES, INC.** PAGE      OF     

**FIELD DATA RECORD - GROUNDWATER**

PROJECT: USATHAMA-BAAP FIELD SAMPLING NUMBER: 31126

SITE ID: S-11126 SITE TYPE: WELL SAMPLING DATE: 12 11 91

LOCATION ACTIVITY: START 1345 END 1515 JOB NUMBER: 6853-04 FILE NAME: CGW

PROGRAM: C WEATHER: SUNNY 35°

**WATER LEVEL / WELL DATA**

WELL DEPTH: 116.05 FT MEASURED  HISTORICAL

WATER DEPTH: 91.90 FT

HEIGHT OF WATER COLUMN: 24.11 FT

PROTECTIVE TOP OF WELL TOP OF CASING:  PROTECTIVE CASING STICK-UP (FROM GROUND): 2.28 FT

PROTECTIVE CASING/WELL DIFF.: -0.02 FT

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS): 89.64

HEIGHT OF WATER COLUMN:  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT ( IN)

45 GAL/VOL 225 TOTAL GAL PURGED (225)

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR      PPM WELL MOUTH      PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A CONCRETE COLLAR INTACT  YES  NO  N/A WELL LOCKED  YES  NO  N/A OTHER: CAP

**PURGE DATA**

PURGE VOLUME	<u>45</u> GAL	<u>90</u> GAL	<u>135</u> GAL	<u>180</u> GAL	<u>225</u> GAL
TEMP, DEG C	<u>10.9</u>	<u>11.1</u>	<u>10.9</u>	<u>11.0</u>	<u>11.2</u>
PH, UNITS	<u>7.2</u>	<u>7.3</u>	<u>7.4</u>	<u>7.2</u>	<u>7.3</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>595</u>	<u>602</u>	<u>602</u>	<u>596</u>	<u>602</u>

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID: ISCO #

SUBMERSIBLE PUMP  GROUNDS#     

BAILER   2"  4" #     

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DEFCON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED: 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1824</u>	<u>022201C</u>
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1824</u>	<u>022201C</u>
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1824</u>	<u>022201C</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1825</u>	<u>022201C</u>
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1826</u>	
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1827</u>	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>1828</u> / <u>1829</u> / <u>1830</u>	<u>022201C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

**NOTES** PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: ABC

RECEIVED BY: Nancy E

4rd. elev = 878.3 HSEI elev. = 880.35 GW elev. = 816.21

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP

SITE ID: S-11127

LOCATION ACTIVITY: START 1530 END 1615

FIELD SAMPLING NUMBER: 5-11127

SITE TYPE: WELL

JOB NUMBER: 6853-04

PROGRAM: C

SAMPLING DATE: 12-3-91

FILE NAME: CGW

WEATHER: SNOW, 20°'S

### WATER LEVEL / WELL DATA

WELL DEPTH: 76.91 FT MEASURED  HISTORICAL

WATER DEPTH: 64.14 FT

HEIGHT OF WATER COLUMN: 12.77 FT

TOP OF WELL PROTECTIVE TOP OF CASING:  PROTECTIVE CASING STICK-UP (FROM GROUND): 2.09 FT

PROTECTIVE CASING/WELL DIFF.: -0.04 FT

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (GWS): 62.07

HEIGHT OF WATER COLUMN:  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (\_\_\_ IN)

17 GAL/VOL

85 TOTAL GAL PURGED (85)

PURGE H2O CONTAINED? YES  NO

WELL MATERIAL:  PVC  SS

AMBIENT AIR PPM: \_\_\_\_\_ WELL MOUTH PPM: \_\_\_\_\_

WELL INTEGRITY: PROT. CASING SECURE  CONCRETE COLLAR INTACT  WELL LOCKED  OTHER: LAP

### PURGE DATA

PURGE VOLUME	<u>17</u> GAL	<u>34</u> GAL	<u>51</u> GAL	<u>68</u> GAL	<u>85</u> GAL
TEMP, DEG C	<u>7.7</u>	<u>8.4</u>	<u>9.1</u>	<u>9.2</u>	<u>9.0</u>
PH, UNITS	<u>8.29</u>	<u>8.30</u>	<u>8.23</u>	<u>8.23</u>	<u>8.16</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>262</u>	<u>335</u>	<u>266</u>	<u>241</u>	<u>292</u>

- SAMPLE OBSERVATIONS
- CLEAR
  - CLOUDY
  - COLORED
  - TURBID
  - ODOR
  - OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDFOSS # \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

EQUIPMENT ID \_\_\_\_\_

DEFCON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly		2164	070310C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		2162	
CL TT08	YES	4 DEG C	500 ML POLY		2163	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		2164	
TDS USEPA 160.1	NO	4 DEG C			2165	
TOC USEPA 415.1	NO	4 DEG C				
NH3M2 USEPA 350.2	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		2166	021230C
VOC UM17	NO	H2SO4 TO pH<2	500 ML POLY		2167	
BN/A UM16	NO	HCL, 4 DEG C	(3) 40 ML VIAL		2168	021230C
NG 99	NO	4 DEG C	(2) 1 L AG		2169	
NAM UM06	NO	4 DEG C	1 L AG			
DNT UM26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Nancy E. Rota

RECEIVED BY: Nancy E. Rota

3177  
 elev = 877.2 riser elev. = 879.31  
 gw elev. = 827.77

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE 1

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

SI128

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID S-1128

JOB NUMBER

6853-04

SAMPLING DATE

12.4.91

LOCATION ACTIVITY START 0730 END 0900

PROGRAM

C

FILE NAME

CGW

WEATHER

CLEAR 5°  
-25° wind

**WATER LEVEL / WELL DATA**

WELL DEPTH 77 FT

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.22 FT

PROTECTIVE CASING/WELL DIFF. -0.06 FT

WATER DEPTH 51.54 FT

MEASURED  
 HISTORICAL

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 79.38

HEIGHT OF WATER COLUMN 26 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)

21 GAL/VOL

105 TOTAL GAL PURGED

WELL INTEGRITY:  
 PROT. CASING SECURE   
 CONCRETE COLLAR INTACT   
 WELL LOCKED   
 OTHER: CAP

PURGE H2O CONTAINED?  
 YES  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.1 PPM

WELL MOUTH 0.1 PPM

**PURGE DATA**

PURGE VOLUME	@ 10 GAL	@ 20 GAL	@ 40 GAL	@ 60 GAL	@ 80 GAL
TEMP, DEG C	<span style="border: 1px solid black; padding: 2px;">8.0</span>	<span style="border: 1px solid black; padding: 2px;">9.0</span>	<span style="border: 1px solid black; padding: 2px;">7.9</span>	<span style="border: 1px solid black; padding: 2px;">8.1</span>	<span style="border: 1px solid black; padding: 2px;">8.0</span>
PH, UNITS	<span style="border: 1px solid black; padding: 2px;">5.23</span>	<span style="border: 1px solid black; padding: 2px;">8.16</span>	<span style="border: 1px solid black; padding: 2px;">6.03</span>	<span style="border: 1px solid black; padding: 2px;">8.01</span>	<span style="border: 1px solid black; padding: 2px;">8.05</span>
SPECIFIC CONDUCTIVITY umhos/cm	<span style="border: 1px solid black; padding: 2px;">270</span>	<span style="border: 1px solid black; padding: 2px;">239</span>	<span style="border: 1px solid black; padding: 2px;">233</span>	<span style="border: 1px solid black; padding: 2px;">233</span>	<span style="border: 1px solid black; padding: 2px;">235</span>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
 PERISTALTIC PUMP   
 SUBMERSIBLE PUMP   
 BAILER   
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GROUNDS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2	500 ml poly			
<input type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY			
<input type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
<input type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG			
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input type="checkbox"/> DMT UW26	NO	4 DEG C	1 L AG			
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES**

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,HG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- started purging 12.3.91 - did not go dry.
- finished purging + sampled 12.4.91
- used historical volumes
- could not get bottom depth - used historical Bow

SIGNATURE: Nancy E. Cate  
 RECEIVED BY: Nancy E. Cate

371  
210 = 910.7

Riser = 913.12  
Elev. = 913.12

EW = 830.53  
Elev. = 830.53

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

511129

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID 3-11129

JOB NUMBER 6853-04

SAMPLING DATE 12/4/91

LOCATION ACTIVITY START 1100 12/4/91 END 1230

PROGRAM C

FILE NAME CGW

WEATHER CLCAL 3°

### WATER LEVEL / WELL DATA

WELL DEPTH 120 FT

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.01 FT

PROTECTIVE CASING/WELL DIFF. -0.01 FT

WATER DEPTH 82.74 FT

MEASURED  
 HISTORICAL

WELL DIAMETER 2 INCH

GROUNDWATER ELEVATION (BGS) 80.74

HEIGHT OF WATER COLUMN 37.26 FT X .16 GAL/FT (2 IN) = 0.65 GAL/FT (4 IN) = 1.5 GAL/FT (6 IN)

51 GAL/VOL

255 TOTAL GAL PURGED

255

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: CAP

PURGE H2O CONTAINED? YES  NO

WELL MATERIAL PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

### PURGE DATA

PURGE VOLUME	@ 51 GAL	@ 102 GAL	@ 153 GAL	@ 204 GAL	@ 255 GAL
TEMP, DEG C	8.2	8.3	7.3	8.1	7.9
PH, UNITS	7.75	7.79	7.79	7.76	7.72
SPECIFIC CONDUCTIVITY umhos/cm	592	599	585	603	611

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

REC'D FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		2090	
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG S803	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			2090	
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		2091	
CL TT08	YES	4 DEG C	500 ML POLY		2092	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		2093	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		2094	2095
BN/A UM16	NO	4 DEG C	(2) 1 L AG		2097	2098
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UN26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)

-used historical volumes  
-historical Bow

SIGNATURE: *Laura E. Carter*

RECEIVED BY: *Nancy E. Rosta*

3rd elev. = 939.2 river elev. = 941.0

GW elev. = 836.74

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 01

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

S11130

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 11-24-91

SITE ID S-11130

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0915 END 1015

PROGRAM C

WEATHER pt cloudy, 20°C

### WATER LEVEL / WELL DATA

TOP OF WELL  
TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.82 FT

PROTECTIVE CASING/WELL DIFF. -1.26 FT

WELL DEPTH 155.8 FT

MEASURED HISTORICAL

WATER DEPTH 104.44 FT

WELL DIAMETER 2 INCH 4 INCH 6 INCH

GROUNDWATER ELEVATION (BGS) 103.85

HEIGHT OF WATER COLUMN 51.36 FT

.16 GAL/FT (2 IN)  
.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)

34 GAL/VOL ~37

44 TOTAL GAL PURGED (180)

WELL INTEGRITY: PROT. CASING SECURE YES NO N/A  
CONCRETE COLLAR INTACT YES NO N/A  
WELL LOCKED YES NO N/A  
OTHER:

PURGE H2O CONTAINED? YES NO

WELL MATERIAL PVC SS

AMBIENT AIR 1.0 PPM

WELL MOUTH 1.0 PPM

### PURGE DATA

PURGE VOLUME	34 GAL	44 GAL	GAL	GAL	GAL
TEMP, DEG C	8.2	8.7			
PH, UNITS	9.5/6.5*	8.3/6.5*			
SPECIFIC CONDUCTIVITY umhos/cm	2.97	2.44			

SAMPLE OBSERVATIONS  
CLEAR  
CLOUDY  
COLORED  
TURBID  
ODOR  
OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER

EQUIPMENT ID ISCO # GRUNDESH H2020 2" 4" #

DECON FLUIDS USED POTABLE WATER LIQUINOX STEAM CLEANING

WATER LEVEL EQUIP. USED ELECTRIC COND. PROBE FLOAT ACTIVATED PRESSURE TRANSDUCER

purge rate 1.5 gal/min

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2			2091	022620C
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			2091	022620C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		2100	022610C
CL	YES	4 DEG C	500 ML POLY		2101	
SO4	YES	4 DEG C	500 ML POLY		2102	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		2103	021730C
BN/A	NO	4 DEG C	(2) 1 L AG		2106	022610C
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(Al,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: [Signature]

RECEIVED BY: Nancy E

Ran dry at 30 gallons Allowed Richard collected sample for parameters at 34 gallons  
Ran dry at 30 gallons allowed Richard collected sample for parameters at 34 gallons

\* used pH paper. meter not working p.

2nd  
320 = 9409

riser  
elev. = 942.17

GW  
elev = 832.17

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP

SITE ID: S-111311

LOCATION ACTIVITY: START 1030 END 1130

FIELD SAMPLING NUMBER: 511311

SITE TYPE: WELL

JOB NUMBER: 6853-04

PROGRAM: C

SAMPLING DATE: 11-24-91

FILE NAME: CGW

WEATHER: part cloudy, 20°

### WATER LEVEL / WELL DATA

WELL DEPTH: 126.75 FT MEASURED  HISTORICAL

WATER DEPTH: 110.00 FT

HEIGHT OF WATER COLUMN: 16.75 FT

PROTECTIVE CASING TOP OF CASING:  TOP OF WELL

PROTECTIVE CASING STICK-UP (FROM GROUND): 3.56 FT

PROTECTIVE CASING/WELL DIFF.: 1.34 FT

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (BGS): 107.76

HEIGHT OF WATER COLUMN:  .16 GAL/FT (2 IN)  .65 GAL/FT (4 IN)  1.5 GAL/FT (6 IN)  GAL/FT (IN)

WELL INTEGRITY: PROT. CASING SECURE  CONCRETE COLLAR INTACT  WELL LOCKED  OTHER: \_\_\_\_\_

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL:  PVC  SS

AMBIENT AIR: 1.0 PPM

WELL MOUTH: 1.0 PPM

TOTAL GAL PURGED: 15 gal (230)

### PURGE DATA

PURGE VOLUME	2.5 GAL	15 GAL	1 GAL	1 GAL	1 GAL
TEMP, DEG C	<u>6.8</u>	<u>6.8</u>			
pH, UNITS	<u>7.0</u>	<u>7.0</u>			
SPECIFIC CONDUCTIVITY umhos/cm	<u>293</u>	<u>309</u>			

SAMPLE OBSERVATIONS

CLEAR

CLOUDY very

COLORED lt grey

TURBID

ODDOR

OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

SAMPLING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

EQUIPMENT ID: ISCO # \_\_\_\_\_

GRUNDEFS# \_\_\_\_\_

2"  4"

RECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED: 1

*purge water went from very clear to very cloudy from 0-8.5 gallons 8.5 → 15 gallons clear to cloudy*

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2			210A	0522301C
NA	YES	HNO3 TO pH<2				
CO	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			2108	0222301C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		2109	0428101C
CL	YES	4 DEG C	500 ML POLY		2110	
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY		2111	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH342	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		2112	0612301C
BH/A	NO	4 DEG C	(2) 1 L AG		2115	0128101C
AG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

*- used historical volumes  
ph paper used well recharged 6 gallons in 10 min let recharge after 15 or sampled*

SIGNATURE: [Signature]

RECEIVED BY: Nancy E. Kotra

777 elev. = 715.0

758 elev. = 915.41

GW elev. = 777.59

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

PROJECT USATHAMA-BAAP

SITE ID S-11132

LOCATION ACTIVITY START 1445 END 1600

FIELD SAMPLING NUMBER S1132

SITE TYPE WELL

JOB NUMBER 6853-04

PROGRAM C

SAMPLING DATE 12.5.9

FILE NAME CGW

WEATHER Snow 20°F

### WATER LEVEL / WELL DATA

WELL DEPTH 160 FT

WATER DEPTH 137.82 FT

HEIGHT OF WATER COLUMN 22.18 FT

MEASURED  HISTORICAL

TOP OF WELL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.88 FT

PROTECTIVE CASING/WELL DIFF. -0.09 FT

WELL DIAMETER  2 INCH  4 INCH  6 INCH

GROUNDWATER ELEVATION (GGs) 136.03

HEIGHT OF WATER COLUMN .16 GAL/FT (2 IN) .65 GAL/FT (4 IN) 1.5 GAL/FT (6 IN) \_ GAL/FT (\_ IN)

42 GAL/VOL

TOTAL GAL PURGED 210

PURGE H<sub>2</sub>O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 1.3 PPM

WELL MOUTH 1.2 PPM

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

OTHER: CAP

### PURGE DATA

	14:00	14:14	14:28	14:42	14:56
PURGE VOLUME	@ 42 GAL	@ 84 GAL	@ 126 GAL	@ 168 GAL	@ 210 GAL
TEMP, DEG C	9.5	10.0	10.2	10.4	10.5
PH, UNITS	8.04	7.98	7.98	8.03	8.03
SPECIFIC CONDUCTIVITY umhos/cm	429	430	440	440	442

- SAMPLE OBSERVATIONS
- CLEAR
  - CLOUDY
  - COLORED
  - TURBID
  - OCCR
  - OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDFOS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

RECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA	SS16	YES	HNO3 TO pH<2		1544	02228010
<input type="checkbox"/> NA	SS16	YES	HNO3 TO pH<2			
<input type="checkbox"/> CD	SS16	YES	HNO3 TO pH<2			
<input type="checkbox"/> CR	SS16	YES	HNO3 TO pH<2			
<input type="checkbox"/> HG	SB03	YES	HNO3 TO pH<2			
<input type="checkbox"/> PB	SD24	YES	HNO3 TO pH<2			
<input type="checkbox"/> NI	SS16	YES	HNO3 TO pH<2			
<input type="checkbox"/> BA	SS16	YES	HNO3 TO pH<2			
<input type="checkbox"/> HARD	USEPA 130.2	YES	HNO3 TO pH<2		1544	02228010
<input type="checkbox"/> NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	1550	02228010
<input type="checkbox"/> CL	TT08	YES	4 DEG C	500 ML POLY	1551	
<input type="checkbox"/> SO4	TT08	YES	4 DEG C			
<input type="checkbox"/> ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	1552	
<input type="checkbox"/> TDS	USEPA 160.1	NO	4 DEG C			
<input type="checkbox"/> TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
<input type="checkbox"/> NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
<input type="checkbox"/> VOC	UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL	1553	02228010
<input type="checkbox"/> BN/A	UM16	NO	4 DEG C	(2) 1 L AG	1554	02228010
<input type="checkbox"/> NG	99	NO	4 DEG C	1 L AG		
<input type="checkbox"/> NAM	UN06	NO	4 DEG C	1 L AG		
<input type="checkbox"/> DNT	UM26	NO	4 DEG C	1 L AG		
<input type="checkbox"/> TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GLW		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: Laura E. Gale

RECEIVED BY: Nancy E. Gale



9.5  
Elev = 828.1

7.5  
Elev = 823.27

9.5  
Elev = 761.93

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **51133**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **S-11133**

JOB NUMBER **6853-04**

SAMPLING DATE **12 10 91**

LOCATION ACTIVITY **START 0800 END 0900**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **SUNNY 40°**

### WATER LEVEL / WELL DATA

WELL DEPTH **76.53 FT**

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **1.81 FT**

PROTECTIVE CASING/WELL DIFF. **-2.30 FT**

WATER DEPTH **66.36 FT**

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) **66.85**

HEIGHT OF WATER COLUMN **30.17 FT** X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

**29** GAL/VOL  
**145** TOTAL GAL PURGED **(145)**

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: **CAP**

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

### PURGE DATA

PURGE VOLUME	<b>29</b> GAL	<b>58</b> GAL	<b>87</b> GAL	<b>116</b> GAL	<b>145</b> GAL
TEMP, DEG C	<b>8.9</b>	<b>8.9</b>	<b>8.9</b>	<b>9.1</b>	<b>8.7</b>
pH, UNITS	<b>7.5</b>	<b>7.5</b>	<b>7.5</b>	<b>7.5</b>	<b>7.5</b>
SPECIFIC CONDUCTIVITY umhos/cm	<b>670</b>	<b>640</b>	<b>643</b>	<b>644</b>	<b>643</b>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDEOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			<b>1456</b>	<b>022201C</b>
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CO	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			<b>1456</b>	<b>022201C</b>
NIT	YES	H2SO4 TO pH<2	500 ML POLY		<b>1457</b>	<b>070310C</b>
CL	YES	4 DEG C	500 ML POLY		<b>1458</b>	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		<b>1459</b>	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2 (3)40 ML VIAL				
NH342	NO	H2SO4 TO pH<2 500 ML POLY				
VOC	NO	HCL, 4 DEG C (3)40 ML VIAL			<b>1460</b>	<b>021230C</b>
BN/A	NO	4 DEG C (2) 1 L AG			<b>1461</b>	
NG	NO	4 DEG C	1 L AG		<b>1462</b>	
NAM	NO	4 DEG C	1 L AG		<b>1463</b>	
DNT	NO	4 DEG C	1 L AG		<b>1464</b>	
TPH	NO	H2SO4 TO pH<2	1 L GWM		<b>1465</b>	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*purge H2O containerized for DNT  
- used historical volumes

SIGNATURE: *Paul C. Smith/pe*  
RECEIVED BY: *Nancy E. Rotka*

ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 31134

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID S-11134

JOB NUMBER 6853-04

SAMPLING DATE 12-4-91

LOCATION ACTIVITY START 11:30 END 12:00

PROGRAM C

FILE NAME CGW

WEATHER Sunny 15°F

WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 1.27 FT  
 PROTECTIVE CASING/WELL DIFF. 0.0 FT  
 WELL DEPTH 181.1 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 143.8 FT  
 1.6 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT ( IN)  
 HEIGHT OF WATER COLUMN 37.3 FT  
 GAL/VOL  
 TOTAL GAL PURGED 4.5 (56)  
 PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR      PPM  
 WELL MOUTH      PPM  
 WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 OTHER: cap

PURGE DATA

PURGE VOLUME	<u>2.0</u> GAL	<u>2</u> GAL	<u>1</u> GAL	<u>4.5</u> GAL	<u>    </u> GAL
TEMP, DEG C	<u>8.4</u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>
PH, UNITS	<u>7.3</u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>1152</u>	<u>1264</u>	<u>1252</u>	<u>1739</u>	<u>    </u>

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  
 SAMPLING  
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER       
 EQUIPMENT ID  
 ISCO #       
 GRUNDEDS#       
 2"  4" #       
 DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			
NA	SS16	YES	HNO3 TO pH<2			
CD	SS16	YES	HNO3 TO pH<2			
CR	SS16	YES	HNO3 TO pH<2			
HG	S803	YES	HNO3 TO pH<2			
PB	SD24	YES	HNO3 TO pH<2			
NI	SS16	YES	HNO3 TO pH<2			
BA	SS16	YES	HNO3 TO pH<2			
HARD	USEPA 130.2	YES	HNO3 TO pH<2			
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		
CL	TT08	YES	4 DEG C	500 ML POLY		
SC-	TT08	YES	4 DEG C			
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		
TDS	USEPA 160.1	NO	4 DEG C			
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		
NG	99	NO	4 DEG C	1 L AG		
NAM	UN06	NO	4 DEG C	1 L AG		
DNT	UM26	NO	4 DEG C	1 L AG		
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SB, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- used historical volumes
- purged 1 gal on 11-25-91 by bailer
- purged dry on 12-3-91 by bailer

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]

- sampled 1 gal by bailer & 1 gal by submersible pump  
 See notes on back

gnd elev =

riser elev. = 925.99

gw elev = 777.60

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **S-11135**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **S-11135**

JOB NUMBER **6853-04**

SAMPLING DATE **12.6.91**

LOCATION ACTIVITY **START 1600 END 1700**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **prt. sunny, 26°**

### WATER LEVEL / WELL DATA

TOP OF WELL     TOP OF CASING    PROTECTIVE CASING STICK-UP (FROM GROUND) **7.33** FT    PROTECTIVE CASING/WELL DIFF. **1.20** FT

WELL DEPTH **161.9** FT     MEASURED     HISTORICAL

WATER DEPTH **149.59** FT    WELL DIAMETER  2 INCH     4 INCH     6 INCH    GROUNDWATER ELEVATION (BGS) **146.13**

HEIGHT OF WATER COLUMN **136** FT x  .16 GAL/FT (2 IN)     .65 GAL/FT (4 IN) =     1.5 GAL/FT (6 IN)    GAL/VOL    **5** TOTAL GAL PURGED **(60)**

PURGE H2O CONTAINED?  YES     NO    WELL MATERIAL  PVC     SS    AMBIENT AIR **0.0** PPM    WELL MOUTH **0.0** PPM

WELL INTEGRITY: PROT. CASING SECURE  YES     NO     N/A  
 CONCRETE COLLAR INTACT  YES     NO     N/A  
 WELL LOCKED  YES     NO     N/A  
 OTHER: **CGP**

### PURGE DATA

PURGE VOLUME	<b>3</b> GAL	<b>4</b> GAL	<b>5</b> GAL	<b>5</b> GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	<b>8.8</b>	<b>8.6</b>	<b>9.0</b>	<b>9.3</b>	<input type="checkbox"/> CLEAR
pH, UNITS	<b>7.0</b>	<b>7.0</b>	<b>6.9</b>	<b>7.0</b>	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	<b>1472</b>	<b>1441</b>	<b>1479</b>	<b>1464</b>	<input checked="" type="checkbox"/> COLORED <b>5.0</b>
					<input type="checkbox"/> TURBID
					<input type="checkbox"/> ODOOR
					<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING     SAMPLING

PERISTALTIC PUMP     EQUIPMENT ID  ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP      GRUNDFOS# \_\_\_\_\_

BAILER      2"     4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED:  POTABLE WATER     LIQUINOX     STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE     FLOAT ACTIVATED     PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **2**

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2			1105	
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			1105	
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		1106	
CL	TT08	YES	4 DEG C	500 ML POLY		1107	
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		1108	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1109	1110
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		1112	1113
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG			
DNT	UW26	NO	4 DEG C	1 L AG			
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/M/CP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/M/CP)

-very silty. could not pump. Bailed 5 gal and sampled.

SIGNATURE: *[Signature]*  
 RECEIVED BY: *Nancy E. Rotea*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

0-11145

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID 0-11145

JOB NUMBER

6853-04

SAMPLING DATE

11/17/91

LOCATION ACTIVITY START 1330 END 1330

PROGRAM

C

FILE NAME

CGW

WEATHER

NAF

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) \_\_\_\_\_ FT  
 PROTECTIVE CASING/WELL DIFF. \_\_\_\_\_ FT

WELL DEPTH \_\_\_\_\_ FT  MEASURED  HISTORICAL  
 WATER DEPTH \_\_\_\_\_ FT  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION \_\_\_\_\_

HEIGHT OF WATER COLUMN \_\_\_\_\_ FT X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN) = \_\_\_\_\_ GAL/VOL  
 1.5 GAL/FT (6 IN) = \_\_\_\_\_ TOTAL GAL PURGED  
 \_\_\_\_\_ GAL/FT (\_\_\_\_ IN)

PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR \_\_\_\_\_ PPM  
 WELL MOUTH \_\_\_\_\_ PPM

WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER \_\_\_\_\_

### PURGE DATA

PURGE VOLUME	@ _____ GAL	@ _____ GAL	@ _____ GAL	@ _____ GAL	@ _____ GAL	SAMPLE OBSERVATIONS
TEMP, DEG C						<input type="checkbox"/> CLEAR
PH, UNITS						<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm						<input type="checkbox"/> COLORED
						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP \_\_\_\_\_ EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP \_\_\_\_\_ ISCO # \_\_\_\_\_  
 BAILER \_\_\_\_\_ GRUNDEFS# \_\_\_\_\_  
 PVC/SILICON TUBING \_\_\_\_\_  2"  4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_ NUMBER OF FILTERS USED \_\_\_\_\_

DECON FLUIDS  POTABLE WATER   
 LIGHTNING STRIKE CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PRBCE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	RESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD USEPA 330.2	YES	HNO3 TO pH<2				
<input type="checkbox"/> NIT TFI0	YES	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY			
<input type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL				
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VCC UM17	NO	HCL, 4 DEG C (3)40 ML VIAL				
<input type="checkbox"/> BN/A UM16	NO	4 DEG C (2) 1 L AG				
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, MG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: N. Roka  
 RECEIVED BY: Nancy E. Roka

1750  
2120 = 852.00

600  
2120 = 769.45

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 51146

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 11-22-91

SITE ID S-11146

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1045 END 1130

PROGRAM C

WEATHER overcast, 30's-40's

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) 1.90 FT

PROTECTIVE CASING/WELL DIFF. (6.00) Flush FT

WELL DEPTH 93.6 FT

MEASURED  
 HISTORICAL

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 27.33

WATER DEPTH 89.23 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (\_\_\_ IN)

GAL/VOL  
TOTAL GAL PURGED (14)

HEIGHT OF WATER COLUMN 4.4 FT

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  NA  
CONCRETE COLLAR INTACT  YES  NO  NA  
WELL LOCKED  YES  NO  NA  
OTHER: cap

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 1.9 PPM

WELL MOUTH 1.8 PPM

### PURGE DATA

PURGE VOLUME	@ .3 GAL	@ ___ GAL	@ ___ GAL	@ ___ GAL	@ ___ GAL
TEMP, DEG C	<u>11.1</u>				
PH, UNITS	<u>7.6</u>				
SPECIFIC CONDUCTIVITY umhos/cm	<u>443</u>				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODCR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDFOS# \_\_\_\_\_  
2"  4"  # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESENTATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	SS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2	500 ml poly		<u>481</u>	<u>04281010</u>
NIT	YES	H2SO4 TO pH<2	500 ML POLY		<u>482</u>	
CL	YES	4 DEG C	500 ML POLY		<u>483</u>	
SO4	YES	4 DEG C	500 ML POLY		<u>484</u>	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
MH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>485</u>	<u>01281010</u>
BN/A	NO	4 DEG C	(2) 1 L AG		<u>486</u>	<u>01281010</u>
NG	NO	4 DEG C	1 L AG		<u>487</u>	
NAM	NO	4 DEG C	1 L AG		<u>490</u>	<u>01281010</u>
DNT	NO	4 DEG C	1 L AG		<u>491</u>	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- purge H2O contained for vocs  
- used historical volumes  
bottom very sandy

SIGNATURE: Paul C. Smith  
RECEIVED BY: Nancy E. Roper

well - dry after 1/2 gal. - purging w/ Bailer. Was not effective

271 elev = 310.2    elev = 313.58    elev = 76.60

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

S2S1152A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

12-11-91

SITE ID S-83-1152A

JOB NUMBER 6853-04

SAMPLING DATE 12/9/91

LOCATION ACTIVITY START ~~0800~~ END ~~0830~~  
0800 0830

PROGRAM C

FILE NAME CGW

WEATHER CLEAR 25°

**WATER LEVEL / WELL DATA**

WELL DEPTH 56.67 FT

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 3.10 FT

PROTECTIVE CASING/WELL DIFF. - 0.10 FT

WATER DEPTH 52.02 FT

MEASURED  
 HISTORICAL

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 49.02

HEIGHT OF WATER COLUMN 4.67 FT  
X .16 GAL/FT (2 IN)  
.65 GAL/FT (4 IN)  
1.5 GAL/FT (6 IN)  
GAL/FT ( IN)

GAL/VOL 6 TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
OTHER: \_\_\_\_\_

PURGE H2O CONTAINED? YES  NO   
WELL MATERIAL PVC  SS

AMBIENT AIR \_\_\_\_\_ PPM WELL MOUTH \_\_\_\_\_ PPM

**PURGE DATA**

	12/9	12/9	12/10	12/10	
PURGE VOLUME	@ 1 GAL	@ 3 GAL	@ 1 GAL	@ 3 GAL	@ GAL
TEMP, DEG C	7.5	7.6	7.9	7.7	
pH, UNITS	8.55	8.04	8.08	8.31	
SPECIFIC CONDUCTIVITY umhos/cm	525	517	502	715	

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_  
GRUNDFOS# \_\_\_\_\_  
2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	ESS lot #
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1504 / / / 02280.C
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /
HG S803	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1504 / / / 02280.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1505 / / / 02280.C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1506 / / /
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>	/ / /
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1507 / / /
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>	/ / /
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>	/ / /
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	/ / /
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1508 / 1509 / 1510 / 02280.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1511 / 1512 / / 02280.C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1513 / / /
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1514 / / /
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1515 / / /
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	/ / /

**NOTES**

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,S803,99 (TL:GFAA, K/NA:ICP)

12-9-91 PUMPED APPROX 3 gal. Dir. sampled @ ~1300  
12-10-91 pumped 3 gal again  
12-11-91 sampled

SIGNATURE: *Janice Cate RR*  
RECEIVED BY: *Nancy E*

grd elev = 807.5

riser elev. = 813.15

GW elev = 761.60

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **38311528**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

12-11-91 sample

SITE ID **S-83-1152B**

JOB NUMBER **6853-04**

SAMPLING DATE **12/11/91 purge**

LOCATION ACTIVITY START **EL 1152B** END **0915**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **OVERCAST**

### WATER LEVEL / WELL DATA

WELL DEPTH **67.45 FT**

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

**3.65 FT**

PROTECTIVE CASING/WELL DIFF. **-0.17 FT**

WATER DEPTH **51.55 FT**

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) **48.67**

HEIGHT OF WATER COLUMN **15.90 FT** X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

GAL/VOL **29** TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: **cap**

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **0.4** PPM

WELL MOUTH **0.4** PPM

### PURGE DATA

	12/10/91	12/11/91			
PURGE VOLUME	<b>23</b> GAL	<b>13</b> GAL			
TEMP, DEG C	<b>5.4</b>	<b>7.7</b>			
PH, UNITS	<b>5.27</b>	<b>5.25</b>			
SPECIFIC CONDUCTIVITY umhos/cm	<b>731</b>	<b>741</b>			

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
SUBMERSIBLE PUMP  GRUNDEOS# \_\_\_\_\_  
BAILER  2"  4" # \_\_\_\_\_  
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		1516	022801C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1516	022801C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1517	0703101C
CL	YES	4 DEG C	500 ML POLY		1518	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		1519	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		1520	0212301C
BN/A	NO	4 DEG C	(2) 1 L AG		1523	0128101C
NG	NO	4 DEG C	1 L AG		1525	
NAM	NO	4 DEG C	1 L AG		1526	
DNT	NO	4 DEG C	1 L AG		1527	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16/SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

12/9/91  
- went dry at ~250gal. No readings were able to be taken before dry. will get readings when go to sample. oil sampled well 1300

SIGNATURE: *Tom Cate RR*  
RECEIVED BY: *Wendy E. Roper*

11/91 - Purged 14 gal with the SUBMERSIBLE PUMP, 3 with the BAILER  
2119 Sampled

grd elev. = 905.2

riser elev. = 908.00

GW elev. = 777.23

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

31153

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID S-11153

JOB NUMBER

6853-04

SAMPLING DATE

12-5-91

LOCATION ACTIVITY START 1500 END 1600

PROGRAM

C

FILE NAME

CGW

WEATHER

Snow 20°F

### WATER LEVEL / WELL DATA

TOP OF WELL

TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.45 FT

PROTECTIVE CASING/WELL DIFF. -5.0 FT

WELL DEPTH 131.20 FT

MEASURED  
 HISTORICAL

WATER DEPTH 131.27 FT

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS)

129.42

HEIGHT OF WATER COLUMN 9.4 FT

0.16 GAL/FT (2 IN)  
 0.65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

13 GAL/VOL

0.5 TOTAL GAL PURGED (65)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER:

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.6 PPM

WELL MOUTH 0.6 PPM

### PURGE DATA

PURGE VOLUME	@ 13 GAL	@ 20 GAL	@ 30 GAL	@ 50 GAL	@ 65 GAL
TEMP, DEG C	9.8	9.8	9.7	9.7	9.7
PH, UNITS	7.4	7.4	7.4	7.4	7.4
SPECIFIC CONDUCTIVITY umhos/cm	760	777	777	777	777

SAMPLE OBSERVATIONS

CLEAR

CLOUDY

COLORED

TURBID

OOCR

OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDEOS# \_\_\_\_\_  
 2" 4" # \_\_\_\_\_

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		ESS 67 #
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			114 / 022280.C
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2			
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2			
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2			
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2			
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2			
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2			
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2			
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2			
<input type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2			114 / 022280.C
<input type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		115 / 022280.C
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		116 /
<input type="checkbox"/> SO4 TT08	YES	4 DEG C	500 ML POLY		117 /
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C			
<input type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
<input type="checkbox"/> NH342 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
<input type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		118 / 119 / 120 / 022280.C
<input type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG		121 / 122 / 022280.C
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG		
<input type="checkbox"/> NAM UM06	NO	4 DEG C	1 L AG		
<input type="checkbox"/> DNT UM26	NO	4 DEG C	1 L AG		
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- used historical volumes

- samples were very turbid, although pump water seemed clear

SIGNATURE: \_\_\_\_\_

RECEIVED BY: Nancy E. \_\_\_\_\_



and  
flow = 813.0

flow = 817.14

flow = 762.18

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

PROJECT USATHAMA-BAAP

FIELD SAMPLING NUMBER 0831147

SITE ID 8-83-1147

SITE TYPE WELL  
JOB NUMBER 6853-04

SAMPLING DATE 11.20.91  
FILE NAME CGW

LOCATION ACTIVITY START 0830 END 0930

PROGRAM C

WEATHER Sunny, 40's-50's

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 1.64 FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. -0.31 FT

WELL DEPTH 71.7 FT  MEASURED  HISTORICAL  
 WATER DEPTH 54.96 FT  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION (BGS) 53.63

HEIGHT OF WATER COLUMN 16.74 FT x  1.6 GAL/FT (2 IN)  3.65 GAL/FT (4 IN) = 7 GAL/VOL  
 1.5 GAL/FT (6 IN)  GAL/FT (IN)  
 TOTAL GAL PURGED 35 (32)

PURGE H2O CONTAINED?  YES  NO WELL MATERIAL  PVC  SS AMBIENT AIR 0.8 PPM WELL MOUTH 0.8 PPM

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 OTHER: cap

### PURGE DATA

PURGE VOLUME	27 GAL	14 GAL	21 GAL	28 GAL	35 G.	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.2	9.1	9.3	9.2	9.0	
PH, UNITS	7.1	7.2	7.2	7.2	7.2	
SPECIFIC CONDUCTIVITY umhos/cm	661	605	603	615	604	

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP GRUNDFOS #  
 BAILER 2" 4" #  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1462	0222601C
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1468	0222801
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1469	0428101C
CL TT08	YES	4 DEG C	500 ML POLY		1470	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1471	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL				
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY				
VOC UM17	NO	HCL, 4 DEG C (3)40 ML VIAL			1472	0212301C
BW/A UM16	NO	4 DEG C (2) 1 L AG			1475	0228101C
NG 99	NO	4 DEG C	1 L AG		1477	
NAM UN06	NO	4 DEG C	1 L AG		1478	
DNT UN26	NO	4 DEG C	1 L AG		1479	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* purge H2O contained for VOCs  
- used historical volumes

SIGNATURE: Paul G. Smith  
RECEIVED BY: Nancy E. Rota

020  
 elev. = 719.5      575  
 elev. = 803.69      ELEV. = 791.94

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP  
 SITE ID: S-83-1148  
 LOCATION ACTIVITY: START 0815 END 0900

FIELD SAMPLING NUMBER: S831148  
 SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C  
 SAMPLING DATE: 12.13.91  
 FILE NAME: CGW  
 WEATHER: SUNNY 35°C

### WATER LEVEL / WELL DATA

TOP OF WELL     PROTECTIVE CASING STICK-UP (FROM GROUND) 1.8± FT  
 MEASURED HISTORICAL     PROTECTIVE CASING/WELL DIFF. 0.0 FT  
 WELL DEPTH: 54.7 FT  
 WATER DEPTH: 41.75 FT  
 WELL DIAMETER:  2 INCH     4 INCH     6 INCH  
 GROUNDWATER ELEVATION (BGS): 39.95  
 HEIGHT OF WATER COLUMN: 120 FT  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN) = 13 GAL/VOL  
 1.5 GAL/FT (6 IN) = 6.5 TOTAL GAL PURGED (65)  
 PURGE H2O CONTAINED?  YES  NO    WELL MATERIAL:  PVC  SS    AMBIENT AIR: 0 PPM    WELL MOUTH: 0 PPM  
 WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: \_\_\_\_\_

### PURGE DATA

	0908	0908	0912	0916	0920	SAMPLE OBSERVATIONS
PURGE VOLUME	@ <u>1.3</u> GAL	@ <u>2.6</u> GAL	@ <u>3.9</u> GAL	@ <u>5.2</u> GAL	@ <u>6.5</u> GAL	
TEMP, DEG C	<u>8.7</u>	<u>8.7</u>	<u>8.8</u>	<u>8.5</u>	<u>8.9</u>	
PH, UNITS	<u>6.4</u>	<u>6.9</u>	<u>7.1</u>	<u>7.1</u>	<u>7.2</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>637</u>	<u>620</u>	<u>634</u>	<u>629</u>	<u>644</u>	

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING:  PERISTALTIC PUMP    EQUIPMENT ID: ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP    GRUNDEOS# \_\_\_\_\_  
 BAILER    2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED:  POTABLE WATER    WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 LIQUINOX     FLOAT ACTIVATED  
 STEAM CLEANING     PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED: \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2			1480	0222501C
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1480	0222501C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1481	0203101C
CL	YES	4 DEG C	500 ML POLY		1482	
SO4	YES	4 DEG C	500 ML POLY		1483	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		1484	0212501C
BN/A	NO	4 DEG C	(2) 1 L AG		1485	
NG	NO	4 DEG C	1 L AG		1486	
NAM	NO	4 DEG C	1 L AG		1487	0228101C
DNT	NO	4 DEG C	1 L AG		1488	
TPH	NO	H2SO4 TO pH<2	1 L GWM		1489	

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- used historical volumes

SIGNATURE: [Signature]  
 RECEIVED BY: W. Nancy E. R.

ptd. elev = 803.6

riser elev. = 807.64

GW elev = 762.72

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

S 83 1 1 4 9

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID S-83-1149

JOB NUMBER 6853-04

SAMPLING DATE 12-13-91

LOCATION ACTIVITY START 1145 END 1245

PROGRAM C

FILE NAME CGW

WEATHER Sunny 46.

### WATER LEVEL / WELL DATA

WELL DEPTH 63.40 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.3 FT

PROTECTIVE CASING/WELL DIFF. -0.11 FT

WATER DEPTH 44.92 FT

WELL DIAMETER 2 INCH  
4 INCH  
6 INCH

GROUNDWATER ELEVATION (BGS) 42.73

HEIGHT OF WATER COLUMN 18.48 FT X  
 .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)

19 GAL/VOL

TOTAL GAL PURGED 70

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER: \_\_\_\_\_

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

### PURGE DATA

	1157	1201	1205	1209	1213
PURGE VOLUME	@ 14 GAL	@ 26 GAL	@ 72 GAL	@ 56 GAL	@ 70 GAL
TEMP, DEG C	7.6	7.30	8.0	7.7	7.6
PH, UNITS	7.7	7.6	7.5	7.6	7.6
SPECIFIC CONDUCTIVITY umhos/cm	547	320	548	546	544

### SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDFOS#   
2"  4"

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1492	0222801C
<input checked="" type="checkbox"/> CA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG	SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB	SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD	USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1492	0222801C
<input checked="" type="checkbox"/> NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1493	0703101C
<input checked="" type="checkbox"/> CL	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1494	
<input checked="" type="checkbox"/> SO4	TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1495	
<input checked="" type="checkbox"/> TDS	USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1496	0222801C
<input checked="" type="checkbox"/> BN/A	UM16	NO	(2) 1 L AG		<input checked="" type="checkbox"/>	1499	0128701C
<input checked="" type="checkbox"/> NG	99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1501	
<input checked="" type="checkbox"/> NAM	UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1502	
<input checked="" type="checkbox"/> DNT	UN26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1503	
<input checked="" type="checkbox"/> TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

-used historical volumes

SIGNATURE: *[Signature]*

RECEIVED BY: Nancy E. Rotter

Grid Elev = 893.1

NSRP Elev = 897.50

GLW Elev = 776.60

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

S-11150

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID S-11150

JOB NUMBER 6853-04

SAMPLING DATE 11-24-91

LOCATION ACTIVITY START 1515 END 1615

PROGRAM C

FILE NAME CGW

WEATHER overcast  
Elev 150  
11/24/91

### WATER LEVEL / WELL DATA

WELL DEPTH 137.30 FT

TOP OF WELL  
 MEASURED  
 TOP OF CASING  
 HISTORICAL

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.90 FT

PROTECTIVE CASING/WELL DIFF. -0.08 FT

WATER DEPTH 120.88 FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

28 GAL/VOL

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION (BGS) 119.06

HEIGHT OF WATER COLUMN 16.42 FT

TOTAL GAL PURGED 140

WELL INTEGRITY: PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER:  YES  NO  N/A

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 10 PPM

WELL MOUTH 1.0 PPM

### PURGE DATA

15:25:30 15:31 15:36:30 15:42 15:47:30

PURGE VOLUME	15:25:30	15:31	15:36:30	15:42	15:47:30
PURGE VOLUME	28 GAL	56 GAL	84 GAL	112 GAL	140 GAL
TEMP, DEG C	9.8	10.1	9.8	9.8	9.3
PH, UNITS	6.7	6.5	6.5	6.6	6.3
SPECIFIC CONDUCTIVITY umhos/cm	602	608	620	623	633

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
PERISTALTIC PUMP   
SUBMERSIBLE PUMP   
BAILER   
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER

EQUIPMENT ID ISCO #  
GRUNDOS#  
2" 4" #

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- used historical volumes

SIGNATURE: *[Signature]*

RECEIVED BY: Nancy E. [Signature]

grid elev = 870.7 filter elev = 873.43 GW elev = 777.98

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_ OF \_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

PROJECT: USATHAMA-BAAP  
 SITE ID: S-11151  
 LOCATION ACTIVITY: START 1415 END 1500

FIELD SAMPLING NUMBER: S11151  
 SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C

SAMPLING DATE: 11-24-91  
 FILE NAME: CGW  
 WEATHER: Sunny/floppy, 20°s  
*0-10 wind chill*

**WATER LEVEL / WELL DATA**

WELL DEPTH: 138.25 FT  
 WATER DEPTH: 115.45 FT  
 HEIGHT OF WATER COLUMN: 22.80 FT  
 MEASURED HISTORICAL:  MEASURED  
 TOP OF WELL:  TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND): 1.08 FT  
 PROTECTIVE CASING/WELL DIFF.: -0.12 FT  
 WELL DIAMETER:  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION (BGS): 113.69  
 HEIGHT OF WATER COLUMN: .16 GAL/FT (2 IN) x 12 GAL/VOL = 1.92 GAL  
 1.65 GAL/FT (4 IN) = 60 TOTAL GAL PURGED  
 1.5 GAL/FT (6 IN)  
 PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL:  PVC  SS  
 AMBIENT AIR PPM: \_\_\_\_\_ WELL MOUTH PPM: \_\_\_\_\_  
 WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER: \_\_\_\_\_

**PURGE DATA**

PURGE VOLUME	2.12 GAL	2.24 GAL	2.36 GAL	2.48 GAL	2.60 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <i>at end</i> <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.2	9.6	9.8	9.8	9.7	
PH, UNITS	6.9	6.6	6.7	6.65	6.6	
SPECIFIC CONDUCTIVITY umhos/cm	537	544	562	563	568	

**EQUIPMENT DOCUMENTATION**

PURGING:  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 SAMPLING:  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID: ISCO # \_\_\_\_\_  
 GRUNDEOS# *FF*  
 2"  4" # \_\_\_\_\_  
 DECON FLUIDS USED:  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED: \_\_\_\_\_

**ANALYTICAL PARAMETERS**

PARAMETERS	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1556	0222801C
NA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1556	0222801C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1557	0222801C
CL	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1558	
SO4	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1559	
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS	USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1560	0212201C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1561	
NG	99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1562	
NAM	UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

- used historical volumes

SIGNATURE: *D. P. Pione*  
 RECEIVED BY: *Nancy E. Pote*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE        OF       

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**SCHAEFER**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **12.4.91**

SITE ID **SCHAEFER**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0755 END 1010**

PROGRAM **C**

WEATHER **Sunny, 29F**

*Ward m. 11*

### WATER LEVEL / WELL DATA

WELL DEPTH        FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)        FT

PROTECTIVE CASING/WELL DIFF.        FT

WATER DEPTH        FT

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION       

HEIGHT OF WATER COLUMN        FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 GAL/FT (IN)

**NA** GAL/VOL  
TOTAL GAL PURGED       

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
OTHER:       

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR PPM       

WELL MOUTH PPM       

### PURGE DATA

PURGE VOLUME	Q	Q	Q	Q	Q
<i>~ 70 gpm</i>	<i>150 GAL</i>				
TEMP, DEG C	<i>8.8</i>				
pH, UNITS	<i>3.7</i>				
SPECIFIC CONDUCTIVITY umhos/cm	<i>1432</i>				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID         
SUBMERSIBLE PUMP  ISCO #         
BAILER  GRUNDEOS#         
PVC/SILICON TUBING         #         
IN-LINE/DISPOSABLE FILTER          
OTHER        

RECON FLUIDS USED  POTABLE WATER  
 TQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED       

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	HNO3 TO pH<2			2258	022201C
NA	SS16	HNO3 TO pH<2			2258	022201C
CD	SS16	HNO3 TO pH<2				
CR	SS16	HNO3 TO pH<2				
HG	SB03	HNO3 TO pH<2				
FB	SD24	HNO3 TO pH<2				
NI	SS16	HNO3 TO pH<2				
BA	SS16	HNO3 TO pH<2				
HARD	USEPA 130.2	HNO3 TO pH<2			2258	022201C
NIT	TF10	H2SO4 TO pH<2	500 ML POLY		2251	0203101C
CL	TT08	4 DEG C	500 ML POLY		2261	
SO4	TT08	4 DEG C				
ALK	USEPA 310.1	4 DEG C	500 ML POLY		2261	
TDS	USEPA 160.1	4 DEG C				
TOC	USEPA 415.1	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NCL, 4 DEG C	(3)40 ML VIAL		2262	0212301C
BN/A	UM16	4 DEG C	(2) 1 L AG		2265	0228101C
NG	99	4 DEG C	1 L AG		2267	
NAM	UN06	4 DEG C	1 L AG		2268	
DNT	UN26	4 DEG C	1 L AG		2269	
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

*Sampled outside (thru a hose) at a faucet located on side of house. The Schaefer wanted us to sample thru the hose. Purged 15 min. & sampled. - Not filtered*

SIGNATURE: *[Signature]*  
RECEIVED BY: *Nancy E.*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SPEAR

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 12-4-91

SITE ID SPEAR

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1020 END 1035

PROGRAM C

WEATHER Sunny, -25°F dry

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) \_\_\_\_\_ FT  
 PROTECTIVE CASING/WELL DIFF \_\_\_\_\_ FT  
 WELL DEPTH \_\_\_\_\_ FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH \_\_\_\_\_ FT  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION \_\_\_\_\_ FT  
 HEIGHT OF WATER COLUMN \_\_\_\_\_ FT X  .16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 \_\_\_\_\_ GAL/FT (\_\_\_\_ IN)  
 TOTAL GAL PURGED \_\_\_\_\_ GAL/VOL  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 OTHER: \_\_\_\_\_  
 PURGE H2O CONTAINED? YES  NO   
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR PPM \_\_\_\_\_ WELL MOUTH PPM \_\_\_\_\_

### PURGE DATA

PURGE VOLUME	1	2	3	4	5	SAMPLE OBSERVATIONS
10.3pm	150 GAL					<input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.9					
pH, UNITS	7.8					
SPECIFIC CONDUCTIVITY umhos/cm	516					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS # \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			2270	022280.C
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			2270	022280.C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		2271	010310.C
CL	TT08	YES	4 DEG C	500 ML POLY		2272	
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		2273	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		2274 / 2275 / 2276	021230.C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		2277 / 2278	012810.C
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG			
DNT	UW26	NO	4 DEG C	1 L AG			
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

purged sink in the cow barn for 15 min,  
 and sampled from the sink.  
 -Not filtered

SIGNATURE: Travis Vaughey  
 RECEIVED BY: Wendy F. Roto

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PREMO

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID PREMO

JOB NUMBER

6853-04

SAMPLING DATE

12.4.91

LOCATION ACTIVITY START 0925 END 0940

PROGRAM

C

FILE NAME

CGW

WEATHER

Sunny, -25°F

### WATER LEVEL / WELL DATA

WELL DEPTH \_\_\_\_\_ FT

MEASURED  
 HISTORICAL

TOP OF WELL  
TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

\_\_\_\_\_ FT

PROTECTIVE CASING/WELL DIFF \_\_\_\_\_ FT

WATER DEPTH \_\_\_\_\_ FT

HEIGHT OF WATER COLUMN \_\_\_\_\_ FT

.16 GAL/FT (2 IN)  
 .65 GAL/FT (4 IN)  
 1.5 GAL/FT (6 IN)  
 \_\_\_\_\_ GAL/FT (\_\_\_\_ IN)

N/A GAL/VOL  
TOTAL GAL PURGED

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

GROUNDWATER ELEVATION \_\_\_\_\_

PURGE H2O CONTAINED?  YES  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR PPM

WELL MOUTH PPM

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT   
WELL LOCKED   
OTHER: \_\_\_\_\_

### PURGE DATA

PURGE VOLUME 10-gpm

2 150 GAL	2 _____ GAL	2 _____ GAL	2 _____ GAL	2 _____ GAL
TEMP, DEG C 6.0				
pH, UNITS 8.35				
SPECIFIC CONDUCTIVITY umhos/cm 0.92				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDFOS# \_\_\_\_\_  
2" \_\_\_\_\_

DECON FLUIDS USED  
POTABLE WATER  
LTDUINOX  
STEAM CLEANING

WATER LEVEL EQUIP. USED  
ELECTRIC COND. PROBE  
FLOAT ACTIVATED  
PRESSURE TRANSDUCER

NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			2246	022801C
NA SS16	YES	HNO3 TO pH<2			2246	022801C
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARO USEPA 130.2	YES	HNO3 TO pH<2			2246	022801C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		2247	022801C
CL TT08	YES	4 DEG C	500 ML POLY		2248	022801C
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		2249	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		2250	022801C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		2253	022801C
NG 99	NO	4 DEG C	1 L AG		2255	
NAM UN06	NO	4 DEG C	1 L AG		2256	
DNT UW26	NO	4 DEG C	1 L AG		2257	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

Source located at outside water pump  
for 15 min.  
-Not filtered

SIGNATURE: \_\_\_\_\_  
RECEIVED BY: Nancy E. P. Ba



**Appendix G.4**  
**Field Data Records - Round Two**

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **BGM91-01**

PROJECT: **USATHAMA-SAAP**

SITE TYPE: **WELL**

SITE ID: **BGM-91-01**

JOB NUMBER: **6853-0-**

SAMPLING DATE: **4/9/92**

LOCATION ACTIVITY: START **1500** END **1600**

PROGRAM: **C**

FILE NAME: **CGW**

WEATHER: **Sunny, 50's**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **1.25** FT

TOP OF CASING

WELL DEPTH: **73** FT

MEASURED  HISTORICAL

PROTECTIVE CASING/WELL DIFF. **15** FT

WATER DEPTH: **65.65** FT

HEIGHT OF WATER COLUMN: **8** FT

WELL INTEGRITY: YES  NO  N/A

PROT. CASING SECURE  CONCRETE COLLAR INTACT

WELL LOCKED  PVC WELL CAP

RISER ELEVATION: **876.01**

GROUNDWATER ELEVATION: **810.41**

PURGE H<sub>2</sub>O CONTAINING?  VOC  DNT  NO

WELL MATERIAL:  PVC  SS

AMBIENT AIR  PPM

WELL MOUTH  PPM

WELL DIAMETER:  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 25 GAL	@ 50 GAL	@ 75 GAL	@ 100 GAL	@ 125 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	12.2	12.3	12.2	12.2	12.3	
PH, UNITS <input checked="" type="checkbox"/> PH PAPER	6.5	6.5	6.5	6.5	6.5	
SPECIFIC CONDUCTIVITY umhos/cm	304	293	278	272	300	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID: **ISCO #**

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION: **873.8**

PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

NUMBER OF FILTERS USED: **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PT METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TOTAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			2067	022801C
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			2068	022801C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		2069	0523010
CL	YES	4 DEG C	500 ML POLY		2070	
SC4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		2071	
TDS	NO	4 DEG C				
TCC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		2072	042301C
BN/A	NO	UM16	(2) 1 L AG		2075	012801C
NG	NO	4 DEG C	1 L AG		2076	
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CO, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CO, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]*  
 RECEIVED BY: *[Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

BGM9102

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE

4-9-92

SITE ID BGM-91-02

JOB NUMBER

6853-04

FILE NAME

CGW

LOCATION ACTIVITY

START 1345 END 1445

PROGRAM

C

WEATHER

Sunny, 50°

### WATER LEVEL / WELL DATA

WELL DEPTH 85.5 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

\_\_\_\_\_ FT

PROTECTIVE CASING/WELL DIFF. \_\_\_\_\_ FT

WATER DEPTH 77.20 FT

15 GAL/VOL (15)

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

YES NO N/A

RISER ELEVATION 876.61

HEIGHT OF WATER COLUMN 8 FT

75 TOTAL GAL PURGED (75)

GROUNDWATER ELEVATION 799.41

PURGE H2O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  
 2 INCH  
 4 INCH  
 \_\_\_\_\_ INCH

### PURGE DATA

PURGE VOLUME

15 GAL 30 GAL 45 GAL 60 GAL 75 GAL

TEMP, DEG C

pH, UNITS  pH PAPER

SPECIFIC CONDUCTIVITY umhos/cm

PUMP RATE, GPM

11.8	10.9	10.7	11.0	11.0
6.5	6.5	6.5	6.5	6.5
413	416	419	412	415

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDEFS# 2  
 2" 4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

874.4

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		2077	0122501C
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CR	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2			2077	0122501C
<input checked="" type="checkbox"/> NI7	YES	H2SO4 TO pH<2	500 ML POLY		2078	0122101C
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY		2079	
<input checked="" type="checkbox"/> SO4	YES	4 DEG C	500 ML POLY		2080	
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> TDS	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		2081	0122501C
<input checked="" type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG		2084	0122501C
<input checked="" type="checkbox"/> NG	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> DNT	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE:

RECEIVED BY:

*G. P. ...*  
 Nancy E. ...

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

BGM 91103

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SAMPLING DATE: 4/11/92

SITE ID: BGM-91-03

JOB NUMBER: 6853-04

FILE NAME: CGW

LOCATION ACTIVITY: START 1000 END 1130

PROGRAM: C

WEATHER: CLOUDY 30r

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING/WELL DIFF. 1.55 FT  
 TOP OF CASING  
 MEASURED  
 HISTORICAL  
 WELL DEPTH: 102 FT  
 WATER DEPTH: 80.38 FT  
 HEIGHT OF WATER COLUMN: 22 FT  
 RISER ELEVATION: 863.56  
 GROUNDWATER ELEVATION: 783.18  
 PROTECTIVE CASING STICK-UP (FROM GROUND): 1.55 FT  
 WELLS INTACT: YES  NO  N/A   
 CONCRETE COLLAR INTACT: YES  NO   
 WELL LOCKED: YES  NO   
 PVC WELL CAP: YES  NO   
 WELLS CONTAINED? VOC  DNT  NO   
 WELL MATERIAL: PVC  SS   
 AMBIENT AIR: — PPM  
 WELL MOUTH: — PPM  
 WELL DIAMETER:  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	a 30 GAL	a 60 GAL	a 90 GAL	a 120 GAL	a 150 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOUR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>9.8</u>	<u>10.3</u>	<u>10.3</u>	<u>10.4</u>	<u>10.3</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.4</u>	<u>7.4</u>	<u>7.5</u>	<u>7.6</u>	<u>7.7</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>514</u>	<u>515</u>	<u>515</u>	<u>515</u>	<u>515</u>	
PUMP RATE, GPM						

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER   
 EQUIPMENT ID: ISCO # \_\_\_\_\_ GRUNDEOS# 2"  4" # \_\_\_\_\_  
 DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION: 861.1  
 NUMBER OF FILTERS USED: 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	2086	0326601C
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	2086	0326601C
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	2087	0528101C
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	2088	
SO4	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	2089	
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	2090 / 2091 / 2092	042820C
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	2093 / 2094	0228101C
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: J. [Signature]  
 RECEIVED BY: Nancy E. [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER BPW#2

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID BPW#2

JOB NUMBER 6853-0

SAMPLING DATE 4.8.72

LOCATION ACTIVITY START 0750 END 0800

PROGRAM C

FILE NAME CGW

WEATHER Sunny 50's

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) \_\_\_\_\_ FT  
 PROTECTIVE CASING/WELL DIFF \_\_\_\_\_ FT

WELL DEPTH \_\_\_\_\_ FT  MEASURED  
 HISTORICAL

WATER DEPTH \_\_\_\_\_ FT

HEIGHT OF WATER COLUMN \_\_\_\_\_ FT

GAL/VOL NA  
 TOTAL GAL PURGED \_\_\_\_\_

WELL INTEGRITY:  
 PROT CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A

RISER ELEVATION \_\_\_\_\_  
 GROUNDWATER ELEVATION \_\_\_\_\_

PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR PPM \_\_\_\_\_  
 WELL MOUTH PPM \_\_\_\_\_  
 WELL DIAMETER  2 INCH  4 INCH  \_\_\_\_\_ INCH

### PURGE DATA

PURGE VOLUME	@ _____ GAL	@ _____ GAL	@ _____ GAL	@ _____ GAL	@ _____ GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> CLORED <input type="checkbox"/> TURBID <input type="checkbox"/> COOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C						
pH, UNITS <input type="checkbox"/> pH PAPER						
SPECIFIC CONDUCTIVITY umhos/cm						
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP   
 SUBMERSIBLE PUMP   
 BAILER   
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDEDS#  2"  4" # NA

DECON FLUIDS USED   
 POTABLE WATER   
 LIQUINOX   
 STEAM CLEANING

WATER LEVEL EQUIP. USED   
 ELECTRIC COND. PROBE   
 FLOAT ACTIVATED   
 PRESSURE TRANSDUCER

GROUND ELEVATION \_\_\_\_\_  
 NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input type="checkbox"/>		
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	<del>YES</del> NO	HNO3 TO pH<2		<input type="checkbox"/>	<u>2056</u>	<u>0228510</u>
<input type="checkbox"/> CA	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> NA	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> CD	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> CR	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> HG	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> PB	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> NI	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> BA	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> HARD	<del>YES</del> NO	HNO3 TO pH<2		<input type="checkbox"/>	<u>2056</u>	<u>0228510</u>
<input type="checkbox"/> NIT	<del>YES</del> NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>	<u>2057</u>	<u>0528120</u>
<input type="checkbox"/> CL	<del>YES</del> NO	4 DEG C	500 ML POLY	<input type="checkbox"/>	<u>2058</u>	
<input type="checkbox"/> SO4	<del>YES</del> NO	4 DEG C		<input type="checkbox"/>	<u>2059</u>	
<input type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
<input type="checkbox"/> TDS	NO	4 DEG C		<input type="checkbox"/>		
<input type="checkbox"/> TCC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
<input type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
<input type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input type="checkbox"/>	<u>2060</u> / <u>2061</u> / <u>2062</u>	<u>0228510</u>
<input type="checkbox"/> EN/A	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>	<u>2063</u> / <u>2064</u>	<u>0228510</u>
<input type="checkbox"/> NG	NO	4 DEG C	1 L AG	<input type="checkbox"/>	<u>2065</u>	
<input type="checkbox"/> HAM	NO	4 DEG C	1 L AG	<input type="checkbox"/>	<u>2066</u>	
<input type="checkbox"/> DNT	NO	4 DEG C	1 L AG	<input type="checkbox"/>	<u>2067</u>	
<input type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GLM	<input type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

water from BPW#2 was poured directly from pump into bottles.

SIGNATURE: Paul G. Smith / AT

RECEIVED BY: Nancy E. Pickett

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PIBN 91106C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PIBN-91-016C

JOB NUMBER 6853-04

SAMPLING DATE 4.29.92

LOCATION ACTIVITY START 0800 END 1000

PROGRAM C

FILE NAME CGW

WEATHER Sunny 60°

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.47 FT  
 PROTECTIVE CASING/WELL DIFF. - .13 FT  
 WELL DEPTH 205 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 82.95 FT  
 RISER ELEVATION 848.29  
 HEIGHT OF WATER COLUMN 120.1 FT  
 99 GAL/VOL (99)  
 495 TOTAL GAL PURGED (495)  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 GROUNDWATER ELEVATION 765.34  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0.0 PPM  
 WELL MOUTH 0.0 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	8:37	9:04	9:31	9:58	10:25	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
at 99 GAL	at 198 GAL	at 297 GAL	at 396 GAL	at 495 GAL		
TEMP, DEG C	11.4	11.5	11.5	11.7	11.8	
pH, UNITS <input type="checkbox"/> pH PAPER	7.67	7.83	7.73	7.75	7.76	
SPECIFIC CONDUCTIVITY umhos/cm	623	623	620	618	627	
PUMP RATE, GPM	4					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING  EQUIPMENT ID ISCO #  
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER  
 DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 846.1  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			
NA	SS16	YES	HNO3 TO pH<2			
CD	SS16	YES	HNO3 TO pH<2		305	032660C
CR	SS16	YES	HNO3 TO pH<2			
HG	SB03	YES	HNO3 TO pH<2			
PB	SD24	YES	HNO3 TO pH<2			
NI	SS16	YES	HNO3 TO pH<2			
BA	SS16	YES	HNO3 TO pH<2			
HARD	USEPA 130.2	YES	HNO3 TO pH<2		305	032660C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	306	052810C
CL	TT08	YES	4 DEG C	500 ML POLY	307	
SO4	TT08	YES	4 DEG C			
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	308	
TDS	USEPA 160.1	NO	4 DEG C			
TCC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	USEPA 816.1	NO	HCL, 4 DEG C	(3) 40 ML VIAL	309	042820C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	312	022810C
NG	99	NO	4 DEG C	1 L AG		
NAM	UN06	NO	4 DEG C	1 L AG	314	022810C
DNT	UW26	NO	4 DEG C	1 L AG	315	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *James E. Carter*  
 RECEIVED BY: *Paul R. Fustel*

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN 9106D**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4/29/97**

SITE ID **PBN-91-06D**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0800 END 1100**

PROGRAM **C**

WEATHER **SUNNY 60°**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.36 FT**  PROTECTIVE CASING/WELL DIFF. **-.19 FT**

TOP OF CASING

WELL DEPTH **253 FT**  MEASURED  HISTORICAL

WATER DEPTH **82.15 FT**

HEIGHT OF WATER COLUMN **170.9 FT**

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION **847.50**  
 GROUNDWATER ELEVATION **765.35**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS

WELL MATERIAL  AMBIENT AIR - PPM  WELL MOUTH - PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	8:48	9:21	9:54	10:27	11:10	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
	a. 12 GAL	a. GAL	a. GAL	a. GAL	a. 660 GAL	
TEMP, DEG C	11.6	11.9	12.0	12.0	12.5	
pH, UNITS <input type="checkbox"/> pH PAPER	7.37	7.4	7.81	7.67	7.65	
SPECIFIC CONDUCTIVITY umhos/cm	625	614	614	614	625	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_ ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDFOS# **ABB 2**

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION **845.8**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA	YES	SS16 HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA	YES	SS16 HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD	YES	SS16 HNO3 TO pH<2		<input checked="" type="checkbox"/>	316	052600C
<input checked="" type="checkbox"/> CR	YES	SS16 HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG	YES	SB03 HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB	YES	SD24 HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI	YES	SS16 HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA	YES	SS16 HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD	YES	USEPA 130.2 HNO3 TO pH<2		<input checked="" type="checkbox"/>	316	052600C
<input checked="" type="checkbox"/> NIT	YES	TF10 H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	317	052800C
<input checked="" type="checkbox"/> CL	YES	TT08 4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	318	
<input checked="" type="checkbox"/> SO4	YES	TT08 4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK	NO	USEPA 310.1 4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	319	
<input checked="" type="checkbox"/> TDS	NO	USEPA 160.1 4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC	NO	USEPA 415.1 H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2	NO	USEPA 350.2 H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC	NO	um:33 HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	320 / 321 / 322	052800C
<input checked="" type="checkbox"/> BN/A	NO	UM16 4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	323 / 324	052800C
<input checked="" type="checkbox"/> NG	NO	99 4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NAM	NO	UN06 4 DEG C	1 L AG	<input checked="" type="checkbox"/>	325	052800C
<input checked="" type="checkbox"/> DNT	NO	UW26 4 DEG C	1 L AG	<input checked="" type="checkbox"/>	326	
<input checked="" type="checkbox"/> TPH	NO	USEPA 418.1 H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CP, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE *Gregory D. Bell*  
 RECEIVED BY: *Paul E. R...*

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **FBN 7112C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **FBN-91-12C**

JOB NUMBER **6853-04**

SAMPLING DATE **4.28.92**

LOCATION ACTIVITY START **1400** END **1700**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **Sunny 50s**

### WATER LEVEL / WELL DATA

WELL DEPTH **136** FT  MEASURED  HISTORICAL  
 TOP OF WELL  TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) **234** FT PROTECTIVE CASING/WELL DIFF. **-0.07** FT

WATER DEPTH **90.11** FT WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

HEIGHT OF WATER COLUMN **95.89** FT **83** GAL/VOL **(83)** RISER ELEVATION **854.42**  
**415** TOTAL GAL PURGED **(415)** GROUNDWATER ELEVATION **76.431**

PURGE H2O CONTAINED?  VOC  DNT  NO WELL MATERIAL  PVC  SS AMBIENT AIR **0.0** PPM WELL MOUTH **0.6** PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

	3:10	3:30	3:50	4:10	4:30	
PURGE VOLUME	<b>a 83</b> GAL	<b>a 106</b> GAL	<b>a 249</b> GAL	<b>a 332</b> GAL	<b>a 415</b> GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>10.9</b>	<b>10.7</b>	<b>10.8</b>	<b>10.9</b>	<b>10.9</b>	
pH, UNITS <input type="checkbox"/> pH PAPER	<b>7.7</b>	<b>7.3</b>	<b>7.6</b>	<b>7.4</b>	<b>7.4</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>592</b>	<b>593</b>	<b>593</b>	<b>594</b>	<b>597</b>	
PUMP RATE, GPM	<b>4 gpm</b>					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRINDFOS# \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION **852.2**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC <b>um 33</b>	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, NG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE *[Signature]*  
 RECEIVED BY: *[Signature]*



ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN91112D**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4-29-92**

SITE ID **PBN-91-12D**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY START **0800** END **1030**

PROGRAM **C**

WEATHER **SUNNY 60's**

WATER LEVEL / WELL DATA

WELL DEPTH **233** FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) **2.30** FT

PROTECTIVE CASING/WELL DIFF. **-0.19** FT

WATER DEPTH **89.02** FT

**114** GAL/VOL

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
PVC WELL CAP  YES  NO  N/A

RISER ELEVATION **853.27**

HEIGHT OF WATER COLUMN: **143.98** FT

**570** TOTAL GAL PURGED

GROUNDWATER ELEVATION **764.27**

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR **0.5** PPM

WELL MOUTH **0.7** PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

PURGE DATA

	0830	0901	0924	0947	1030
PURGE VOLUME	@ <b>114</b> GAL	@ <b>228</b> GAL	@ <b>342</b> GAL	@ <b>456</b> GAL	@ <b>570</b> GAL
TEMP, DEG C	<b>11.0</b>	<b>11.0</b>	<b>11.2</b>	<b>11.4</b>	<b>11.4</b>
pH, UNITS <input type="checkbox"/> pH PAPER	<b>7.6</b>	<b>7.5</b>	<b>7.4</b>	<b>7.4</b>	<b>7.4</b>
SPECIFIC CONDUCTIVITY umhos/cm	<b>589</b>	<b>588</b>	<b>591</b>	<b>595</b>	<b>595</b>
PUMP RATE, GPM	<b>5 gpm</b>				

SAMPLE OBSERVATIONS

- CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDFOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

NUMBER OF FILTERS USED **1**

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION **851.2**

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2				
<input type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY			
<input type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC UM-33	NO	HCL, 4 DEG C	(3)40 ML VIAL			
<input type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG			
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]*

RECEIVED BY: *[Signature]*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

FIEN 8901B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-89-01B

JOB NUMBER 6853-04

SAMPLING DATE 4/23/92

LOCATION ACTIVITY START 1200 END 1500

PROGRAM C

FILE NAME CGW

WEATHER Rain 40's

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.08 FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. -0.16 FT  
 MEASURED  
 HISTORICAL  
 WELL DEPTH 162 FT  
 WATER DEPTH 103.95 FT  
 HEIGHT OF WATER COLUMN 58.05 FT  
 RISER ELEVATION 872.33  
 GROUNDWATER ELEVATION 708.38  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0.2 PPM WELL MOUTH 0.2 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	@ 50 GAL	@ 100 GAL	@ 150 GAL	@ 200 GAL	@ 250 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.1	10.3	10.3	10.4	10.5	
pH, UNITS <input type="checkbox"/> pH PAPER	7.6	7.4	7.4	7.4	7.4	
SPECIFIC CONDUCTIVITY umhos/cm	327	321	339	327	339	
PUMP RATE, GPM	325					

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP  GROUND FOS#  
 BAILER  2"  4" #  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION 270.0  
 NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 760.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC UM33	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Lyle Brown*  
 RECEIVED BY: *Pat R. ...*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PIBIN 2901 C

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

4-24-92

SITE ID PIBIN-29-011C

JOB NUMBER

6853-04

SAMPLING DATE

LOCATION ACTIVITY START 1306 END 1530

PROGRAM

C

FILE NAME

CGW

WEATHER

LOUDS 40's

### WATER LEVEL / WELL DATA

WELL DEPTH 201 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.55 FT

PROTECTIVE CASING/WELL DIFF 0.21 FT

WATER DEPTH 109.56 FT

42 GAL/VOL  
311 TOTAL GAL PURGED

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
PVC WELL CAP

YES NO N/A

RISER ELEVATION 873.06

HEIGHT OF WATER COLUMN 91.44 FT

GROUNDWATER ELEVATION 768.5

PURGE H2O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR NR PPM

WELL MOUTH NR PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	@ 62 GAL	@ 124 GAL	@ 186 GAL	@ 248 GAL	@ 310 GAL
TEMP, DEG C	10.5	10.9	10.2	10.2	10.6
pH, UNITS <input type="checkbox"/> pH PAPER	7.4	7.1	7.2	7.3	7.2
SPECIFIC CONDUCTIVITY umhos/cm	367	357	359	361	357
PUMP RATE, GPM	1235	1255			

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOCR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID

ISCO #  
GRUNDFOS#   
2" 4" #

DECON FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

375.5

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SC4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3-N USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BAVA UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

NR = No Reading - TS measurable  
No stone collar

SIGNATURE: *Lyell Tracy*  
RECEIVED BY: *Paul R...*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER PBN 879010

PROJECT USATHAMA-BAAP  
 SITE ID PBN-89-010  
 LOCATION ACTIVITY START 1300 END 1600

SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C

SAMPLING DATE 4/24/92  
 FILE NAME CSW  
 WEATHER Clouds 40°F

WATER LEVEL / WELL DATA

WELL DEPTH 240 FT  MEASURED  HISTORICAL  
 WATER DEPTH 105.54 FT  
 HEIGHT OF WATER COLUMN 134.46 FT  
 TOP OF WELL  TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.55 FT  
 PROTECTIVE CASING/WELL DIFF. -0.42 FT  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 RISER ELEVATION 874.05  
 GROUNDWATER ELEVATION 768.51  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 AMBIENT AIR NR PPM WELL MOUTH NR PPM  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

PURGE DATA

PURGE VOLUME	@ 107 GAL	@ 214 GAL	@ 321 GAL	@ 428 GAL	@ 535 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.5</u>	<u>10.3</u>	<u>10.1</u>	<u>10.4</u>	<u>10.3</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.4</u>	<u>7.3</u>	<u>7.1</u>	<u>7.3</u>	<u>7.5</u>	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>318</u>	<u>313</u>	<u>315</u>	<u>338</u>	<u>320</u>	
PUMP RATE, GPM	<u>3.0</u>					

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 EQUIPMENT ID ISCO #  
 PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER   
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION 871.5  
 NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>184</u>	<u>1032601C</u>
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>184</u>	<u>1032601C</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>185</u>	<u>1032601C</u>
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>186</u>	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>187</u>	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VCC UM33	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	<u>188</u>	<u>1032601C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>193</u>	<u>1032601C</u>
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>194</u>	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

NIR = No reading - TE inoperative

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PIB N 27-02B

PROJECT USATHAMA-SAAP

SITE TYPE WELL

SAMPLING DATE 4/21/92

SITE ID PIB N-27-02B

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0800 END 0930

PROGRAM C

WEATHER CLOUDY WIND

### WATER LEVEL / WELL DATA

WELL DEPTH 165 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.65 FT

PROTECTIVE CASING/WELL DIFF. -0.21 FT

WATER DEPTH 132.91 FT

32 GAL/VOL 32

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
PVC WELL CAP

RISER ELEVATION 900.25

HEIGHT OF WATER COLUMN 30.09 FT

1600 TOTAL GAL PURGED

GROUNDWATER ELEVATION 767.34

PURGE H2O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0.2 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

### PURGE DATA

PURGE VOLUME

@ 32 GAL @ 64 GAL @ 96 GAL @ 128 GAL @ 160 GAL

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOCR  
 OTHER (SEE NOTES)

TEMP, DEG C

10.8 10.7 10.8 10.4 10.5

pH, UNITS  pH PAPER

7.1 7.5 7.2 7.4 7.5

SPECIFIC CONDUCTIVITY umhos/cm

552 554 552 552 550

PUMP RATE, GPM

2.35

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS #  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 297.6

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			625	528.016
NIT	YES	H2SO4 TO pH<2	500 ML POLY		626	
CL	YES	4 DEG C	500 ML POLY		627	
SO4	YES	4 DEG C			628	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		629	630
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		634	635
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

No concrete collar - stone

SIGNATURE: *[Signature]*

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ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER PBN81902C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-89-02C

JOB NUMBER 6855-04

SAMPLING DATE 4/23/92

LOCATION ACTIVITY START 1000 END 1200

PROGRAM C

FILE NAME CGW

WEATHER cloudy 40s

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.45 FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. 0.33 FT

WELL DEPTH 196 FT  MEASURED  HISTORICAL

WATER DEPTH 129.45 FT

HEIGHT OF WATER COLUMN 67.55 FT

WELL INTEGRITY: YES NO N/A

PROT. CASING SECURE

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

RISER ELEVATION 877.04

GROUNDWATER ELEVATION 830.59

WELL DIAMETER  2 INCH  1 INCH  1/2 INCH

PURGE H2O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR NR PPM

WELL MOUTH NR PPM

PURGE DATA

PURGE VOLUME	@ <u>55</u> GAL	@ <u>110</u> GAL	@ <u>165</u> GAL	@ <u>220</u> GAL	@ <u>275</u> GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>9.9</u>	<u>10.4</u>	<u>10.3</u>	<u>10.5</u>	<u>10.5</u>	
PH, UNITS <input type="checkbox"/> PH PAPER	<u>7.5</u>	<u>7.4</u>	<u>7.3</u>	<u>7.4</u>	<u>7.2</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>538</u>	<u>536</u>	<u>540</u>	<u>540</u>	<u>537</u>	
PUMP RATE, GPM	<u>3.2</u>	<u>3.5</u>				

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO #

SUBMERSIBLE PUMP  GRUNDFOS #

BATLER  2" 4" #

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION 874.5

NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C	500 ML POLY			
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC <u>UM-33</u>	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

NR = No Reading - TE inoperable

SIGNATURE: [Signature]

RECEIVED BY: [Signature]

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN 89103B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-89-03B

JOB NUMBER 6853-04

SAMPLING DATE 4/25/92

LOCATION ACTIVITY START 0800 END 1000

PROGRAM C

FILE NAME CGW

WEATHER Clouds, 40's

WATER LEVEL / WELL DATA

WELL DEPTH 128 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.50 FT

PROTECTIVE CASING/WELL DIFF. -0.03 FT

WATER DEPTH 79.43 FT

42 GAL/VOL 43

WELL INTEGRITY: PROT. CASING SECURE YES NO N/A CONCRETE COLLAR INTACT WELL LOCKED PVC WELL CAP

RISER ELEVATION 847.08

HEIGHT OF WATER COLUMN 48.57 FT

210-200 FT TOTAL GAL PURGED 60

GROUNDWATER ELEVATION 767.65

PURGE H2O CONTAINED? VOC DNT NO WELL MATERIAL PVC SS

AMBIENT AIR 0.2 PPM WELL MOUTH 0.4 PPM

WELL DIAMETER 2 INCH 4 INCH 1 INCH

PURGE DATA

PURGE VOLUME 940 AM

TEMP, DEG C 10.2 pH, UNITS 7.6 SPECIFIC CONDUCTIVITY umhos/cm 410 PUMP RATE, GPM 3.3

PURGE VOLUME	@ 42 GAL	@ 100 GAL	@ 126 GAL	@ 168 GAL	@ 210 GAL
TEMP, DEG C	10.2	10.4	10.1	10.3	10.5
pH, UNITS	7.6	7.4	7.4	7.4	7.3
SPECIFIC CONDUCTIVITY umhos/cm	410	611	606	606	603
PUMP RATE, GPM	3.3				

SAMPLE OBSERVATIONS CLEAR CLOUDY COLORED TURBID OOR OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING SAMPLING PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER

DECON FLUIDS USED POTABLE WATER LIQUINOX STEAM CLEANING

WATER LEVEL EQUIP. USED ELECTRIC COND. PROBE FLOAT ACTIVATED PRESSURE TRANSDUCER

GROUND ELEVATION 844.9

NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			649	0228101C
NI7 TF10	YES	H2SO4 TO pH<2	500 ML POLY		650	
CL TT08	YES	4 DEG C	500 ML POLY		651	
SO4 TT08	YES	4 DEG C			652	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM:33	NO	HCL, 4 DEG C	(3) 40 ML VIAL		653	0228101C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		654	
NG 99	NO	4 DEG C	1 L AG		655	
NAM UN06	NO	4 DEG C	1 L AG		656	0228101C
DNT UW26	NO	4 DEG C	1 L AG		657	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP) TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: [Signature] RECEIVED BY: [Signature]

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

FBN 31705C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID FBN-187-03C

JOB NUMBER 6853-04

SAMPLING DATE 4-25-92

LOCATION ACTIVITY START 1030 END 1300

PROGRAM C

FILE NAME CGW

WEATHER Clouds 40%

WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.60 FT  
 PROTECTIVE CASING/WELL DIFF. -0.15 FT  
 WELL DEPTH 165 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 78.51 FT  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 HEIGHT OF WATER COLUMN 84.49 FT  
 RISER ELEVATION 846.87  
 TOTAL GAL PURGED 340  
 GROUNDWATER ELEVATION 768.36  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0.0 PPM  
 WELL MOUTH 0.6 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	1	2	3	4	5	SAMPLE OBSERVATIONS
	68 GAL	136 GAL	204 GAL	272 GAL	340 GAL	<input checked="" type="checkbox"/> CLEAR
TEMP, DEG C	9.8	10.0	9.7	9.6	9.9	<input type="checkbox"/> CLOUDY
pH, UNITS	7.2	7.2	7.2	7.2	7.2	<input type="checkbox"/> COLORED
SPECIFIC CONDUCTIVITY umhos/cm	649	659	667	667	667	<input type="checkbox"/> TURBID
PUMP RATE, GPM	4.6					<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDFOS#  2"  4" # \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 844.1  
 NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	661	10528101C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	662	
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	663	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	664	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	665	666 667 0422701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	670	1022801C
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	671	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,HG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]*  
 RECEIVED BY: *[Signature]*



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN 891046

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE

4/12/92

SITE ID PBN-89-046

JOB NUMBER

6853-04

FILE NAME

CGW

LOCATION ACTIVITY START 1400 END 1530

PROGRAM

C

WEATHER

Sunny, windy, 40

### WATER LEVEL / WELL DATA

WELL DEPTH 146 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.49 FT

PROTECTIVE CASING/WELL DIFF. - .26 FT

WATER DEPTH 93.07 FT

HEIGHT OF WATER COLUMN 52.93 FT

50 GAL/VOL

250 TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION 857.23

GROUNDWATER ELEVATION 766.16

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.1 PPM

WELL MOUTH 0.1 PPM

WELL DIAMETER  4 INCH  6 INCH  8 INCH

### PURGE DATA

PURGE VOLUME

@ 50 GAL

@ 100 GAL

@ 150 GAL

@ 200 GAL

@ 250 GAL

TEMP, DEG C

pH, UNITS  pH PAPER

SPECIFIC CONDUCTIVITY umhos/cm

PUMP RATE, GPM

11.2

6.2

7.4

4 gpm

10.9

6.0

7.40

11.7

6.0

7.42

10.7

6.0

7.42

10.5

6.0

7.40

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP

SUBMERSIBLE PUMP

BAILER

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

EQUIPMENT ID

ISCO #

GRUNDFOS#

3 2" 4" #

DECON FLUIDS USED

POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

GROUND ELEVATION

856.9

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2				
CA	YES	HNO <sub>3</sub> TO pH<2				
NA	YES	HNO <sub>3</sub> TO pH<2				
CD	YES	HNO <sub>3</sub> TO pH<2			195	0326601C
CR	YES	HNO <sub>3</sub> TO pH<2				
HG	YES	HNO <sub>3</sub> TO pH<2				
PB	YES	HNO <sub>3</sub> TO pH<2				
NI	YES	HNO <sub>3</sub> TO pH<2				
BA	YES	HNO <sub>3</sub> TO pH<2				
HARD	YES	HNO <sub>3</sub> TO pH<2			195	0326601C
NIT	YES	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY		196	0528101C
CL	YES	4 DEG C	500 ML POLY		197	
SO <sub>4</sub>	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		198	
TDS	NO	4 DEG C				
TOC	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	(3)40 ML VIAL			
NH <sub>3</sub> N <sub>2</sub>	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		199	200
BN/A	NO	4 DEG C	(2) 1 L AG			201
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		204	0228101C
DNT	NO	4 DEG C	1 L AG		205	
TPH	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *R. Smith*

RECEIVED BY: *Nancy E. Ross*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN 39 04 C

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID PBN-39-04C

JOB NUMBER

6853-04

SAMPLING DATE

4.13.92

LOCATION

ACTIVITY START 1500 END 1700

PROGRAM

C

FILE NAME

CGW

WEATHER

cloudy, 30's

### WATER LEVEL / WELL DATA

WELL DEPTH 181 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.78 FT

PROTECTIVE CASING/WELL DIFF.

-0.83 FT

WATER DEPTH 94.00 FT

82 GAL/VOL

82

WELL INTEGRITY:

YES NO N/A

859.70

HEIGHT OF WATER COLUMN 87.00 FT

410 TOTAL GAL PURGED

410

PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
PVC WELL CAP

GROUNDWATER ELEVATION

765.7

PURGE H2O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR - PPM

WELL MOUTH - PPM

WELL DIAMETER 2 INCH  
2 INCH

### PURGE DATA

PURGE VOLUME	282 GAL	164 GAL	246 GAL	328 GAL	410 GAL
TEMP, DEG C	10.3	10.2	10.3	10.3	10.2
PH, UNITS <input checked="" type="checkbox"/> PH PAPER	6	6.8	6.0	6	6
SPECIFIC CONDUCTIVITY umhos/cm	489	689	689	288	688
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  (2) SAMPLING

EQUIPMENT ID  
PERISTALTIC PUMP ISCO #  
SUBMERSIBLE PUMP GRUNDEOS#  
BAILER 2" 4" #  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 357.7

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2			206	032600C
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			206	032600C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		207	032810C
CL	YES	4 DEG C	500 ML POLY		208	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		209	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		210 / 211 / 212	042870C
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		215	02280C
DNT	NO	4 DEG C	1 L AG		216	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Rick Smith/ET*

RECEIVED BY: *Nancy E. Rota*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

F1EM 319 05

PROJECT USATHAMA-GAAP

SITE TYPE WELL

SAMPLING DATE 1/14/92

SITE ID F1EM-819-05

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1330 END 1500

PROGRAM C

WEATHER Cloudy 30's

### WATER LEVEL / WELL DATA

WELL DEPTH 99 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) 300 FT

PROTECTIVE CASING/WELL DIFF. - .18 FT

WATER DEPTH 87.46 FT

HEIGHT OF WATER COLUMN 11.54 FT

19 GAL/VOL  
95 TOTAL GAL PURGED

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
PVC WELL CAP  YES  NO  N/A

RISER ELEVATION 855.52

GROUNDWATER ELEVATION 768.12

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.2 PPM

WELL MOUTH 0.2 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	@ 19 GAL	@ 38 GAL	@ 57 GAL	@ 76 GAL	@ 95 GAL
TEMP, DEG C	<u>10.1</u>	<u>10.8</u>	<u>10.3</u>	<u>10.1</u>	<u>10.0</u>
pH, UNITS <input checked="" type="checkbox"/> pH PAPER	<u>6.5</u>	<u>6.5</u>	<u>6</u>	<u>6.5</u>	<u>6.5</u>
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>789</u>	<u>726</u>	<u>785</u>	<u>784</u>	<u>780</u>
PUMP RATE, GPM	<u>3.2</u>				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID  
PERISTALTIC PUMP  ISCO # \_\_\_\_\_  
SUBMERSIBLE PUMP  GROUND LOG # \_\_\_\_\_  
BAILER  2"  4" # \_\_\_\_\_  
PVC/SILICON TUBING  \_\_\_\_\_  
IN-LINE/DISPOSABLE FILTER  \_\_\_\_\_  
OTHER \_\_\_\_\_

FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 852.3

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			<u>673</u>	<u>052501C</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>674</u>	
CL TT08	YES	4 DEG C	500 ML POLY		<u>675</u>	
SC4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>676</u>	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>677</u>	<u>052501C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
HG 99	NO	4 DEG C	1 L AG			
NA UN06	NO	4 DEG C	1 L AG		<u>682</u>	<u>052501C</u>
DNT UW26	NO	4 DEG C	1 L AG		<u>683</u>	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: R. C. S. / L. T.  
RECEIVED BY: Nancy E. Rott

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER P5M8191061

DATE 11.25.92

PROJECT USATHAMA-SAAP

SITE TYPE WELL

SAMPLING DATE 11.21.92

SITE ID P5M-189-06

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 11:00 END 1:00

PROGRAM C

WEATHER Clouds 40's F

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.55 FT  
 PROTECTIVE CASING/WELL DIFF. 0.23 FT  
 WELL DEPTH 138 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 117.85 FT  
 RISER ELEVATION 236.37  
 HEIGHT OF WATER COLUMN 165 FT  
 TOTAL GAL PURGED 165  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 PURGE H2O CONTAINED?  VOC  DNT  NO  
 WELLY MATERIAL  PVC  SS  
 AMBIENT AIR NR PPM  
 WELL MOUTH NR PPM  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	@ <u>33</u> GAL	@ <u>66</u> GAL	@ <u>99</u> GAL	@ <u>132</u> GAL	@ <u>165</u> GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.1</u>	<u>10.1</u>	<u>10.3</u>	<u>10.3</u>	<u>10.3</u>	
PH, UNITS <input type="checkbox"/> PH PAPER	<u>7.3</u>	<u>7.2</u>	<u>7.2</u>	<u>7.7</u>	<u>7.7</u>	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>369</u>	<u>377</u>	<u>373</u>	<u>379</u>	<u>373</u>	
PUMP RATE, GPM	<u>3.0</u>					

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDFOS#  2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 233.7

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			
NA	SS16	YES	HNO3 TO pH<2			
CD	SS16	YES	HNO3 TO pH<2			
CR	SS16	YES	HNO3 TO pH<2			
HG	SB03	YES	HNO3 TO pH<2			
PB	SD24	YES	HNO3 TO pH<2			
NI	SS16	YES	HNO3 TO pH<2			
BA	SS16	YES	HNO3 TO pH<2			
HARD	USEPA 130.2	YES	HNO3 TO pH<2			
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<u>685</u>	<u>10528101C</u>
CL	TT08	YES	4 DEG C	500 ML POLY	<u>686</u>	
SO4	TT08	YES	4 DEG C		<u>687</u>	
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	<u>688</u>	
TDS	USEPA 160.1	NO	4 DEG C			
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	<u>um:33</u>	NO	HCL, 4 DEG C	(3)40 ML VIAL	<u>689</u>	
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	<u>690</u>	<u>691</u>
NG	99	NO	4 DEG C	1 L AG		
NAM	UN06	NO	4 DEG C	1 L AG	<u>694</u>	<u>10228101C</u>
DNT	UW26	NO	4 DEG C	1 L AG	<u>695</u>	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

NR = No Reading - TE Inoperative  
 No concrete collar -> stone

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER P18M 39 07

PROJECT USATHAMA-BAAP  
 SITE ID P18M-39-07  
 LOCATION ACTIVITY START 1400 END 1600

SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C

SAMPLING DATE 4-23-92  
 FILE NAME CGW  
 WEATHER Cloudy, 43

WATER LEVEL / WELL DATA

WELL DEPTH 95.5 FT  MEASURED  TOP OF WELL PROTECTIVE CASING/WELL DIFF. 1.4 FT  
 HISTORICAL  TOP OF CASING  
 WATER DEPTH 83.56 FT  
 HEIGHT OF WATER COLUMN 11.44 FT  
 RISER ELEVATION 849.36  
 GROUNDWATER ELEVATION 765.8  
 WELLS INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 WELLS DIAMETER  2 INCH  4 INCH  INCH  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0 PPM WELL MOUTH 0 PPM

PURGE DATA

PURGE VOLUME	<u>22</u> GAL	<u>44</u> GAL	<u>66</u> GAL	<u>88</u> GAL	<u>108</u> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLGRED <input type="checkbox"/> TURBID <input type="checkbox"/> OOCR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.4</u>	<u>10.1</u>	<u>10.2</u>	<u>10.0</u>	<u>10.0</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.6</u>	<u>7.5</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>588</u>	<u>521</u>	<u>514</u>	<u>514</u>	<u>516</u>	
PUMP RATE, GPM						

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS#   
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER   
 LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE   
 FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION 846.6  
 NUMBER OF FILTERS USED \_\_\_\_\_

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT JW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, X, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBM 8908**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **PBM-89-08**

JOB NUMBER **6853-04**

SAMPLING DATE **4.12.92**

LOCATION ACTIVITY **START 1030 END 1115**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **Sunny, windy, 30's**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **3.10** FT  
 PROTECTIVE CASING/WELL DIFF. **- .17** FT  
 WELL DEPTH **128** FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH **122.46** FT  
 HEIGHT OF WATER COLUMN **5.54** FT  
 RISER ELEVATION **888.56**  
 GROUNDWATER ELEVATION **766.10**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.0** PPM  
 WELL MOUTH **0.1** PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 10 GAL	@ 20 GAL	@ 30 GAL	@ 40 GAL	@ 50 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	11.1	12.1	11.1	11.2	11.1	
pH, UNITS <input checked="" type="checkbox"/> pH PAPER	6.0	6.0	6.0	6.0	6.0	
SPECIFIC CONDUCTIVITY umhos/cm	620	620	620	623	623	
PUMP RATE, GPM	3 gpm					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDFOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION **885.5**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			709	0528101C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		710	
CL	YES	4 DEG C	500 ML POLY		711	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		712	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		713 / 714 / 715	0428101C
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		718	0628101C
DNT	NO	4 DEG C	1 L AG		719	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Rud C. Smith, L.L.T.*  
 RECEIVED BY: *Nancy E. R. R.*

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBM8909**

PROJECT **USATHAMA-BAAP**  
 SITE ID **PBM-89-091**  
 LOCATION ACTIVITY START **1200** END **1300**

SITE TYPE **WELL**  
 JOB NUMBER **6853-04**  
 PROGRAM **C**

SAMPLING DATE **4/22/92**  
 FILE NAME **CGW**  
 WEATHER **OVERCAST 40%**

### WATER LEVEL / WELL DATA

WELL DEPTH **126 FT**  MEASURED  HISTORICAL  
 WATER DEPTH **111.25 FT**  
 HEIGHT OF WATER COLUMN **14.75 FT**  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **282 FT**  
 PROTECTIVE CASING/WELL DIFF. **.20 FT**  
 RISER ELEVATION **885.48**  
 GROUNDWATER ELEVATION **772.23**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **1.3 PPM** WELL MOUTH **1.2 PPM**  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

	12:35	12:44	12:53	13:02	13:11	SAMPLE OBSERVATIONS
PURGE VOLUME	26 GAL	52 GAL	78 GAL	104 GAL	130 GAL	
TEMP, DEG C	10.5	10.7	10.8	10.6	10.6	
pH, UNITS <input type="checkbox"/> pH PAPER	7.71	7.44	7.63	7.63	7.67	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	431	410	614	609	611	
PUMP RATE, GPM	3					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
 SAMPLING  SUBMERSIBLE PUMP  GRUNDEFS# **ABB#2**  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER   
 LIQUINOX   
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION **880.5**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			721	0528101C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		722	
CL	TT08	YES	4 DEG C	500 ML POLY		723	
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		724	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL		725	042701C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG			
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG		730	022501C
DNT	UW26	NO	4 DEG C	1 L AG		731	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Laura E. Carter*  
 RECEIVED BY: *Bob E. ...*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PB.N.81910A**

PROJECT **USATHAMA-BAAP**  
 SITE ID **PBM-89-10A**  
 LOCATION ACTIVITY **START 1000 END 1100**

SITE TYPE **WELL**  
 JOB NUMBER **6853-04**  
 PROGRAM **C**

SAMPLING DATE **4.10.92**  
 FILE NAME **CGW**  
 WEATHER **cloudy, 40's**

### WATER LEVEL / WELL DATA

WELL DEPTH **131 FT**  MEASURED  HISTORICAL  
 WATER DEPTH **119.06 FT**  
 HEIGHT OF WATER COLUMN **11.94 FT**  
 TOP OF WELL  TOP OF CASING  PROTECTIVE CASING STICK-UP (FROM GROUND) **2.73 FT**  
 PROTECTIVE CASING/WELL DIFF. **-0.18 FT**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 RISER ELEVATION **889.65**  
 GROUNDWATER ELEVATION **770.59**  
 WELL DIAMETER  2 INCH  4 INCH  INCH  
 PLUGGE H2O CONTAINED?  VOC  DNT  NO  PVC  SS  
 AMBIENT AIR **1.0 PPM** WELL MOUTH **1.3 PPM** (**DAMP**)

### PURGE DATA

PURGE VOLUME	a 19 GAL	a 38 GAL	a 57 GAL	a 76 GAL	a 95 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	10.9	10.9	10.9	11.1	11.0	<input checked="" type="checkbox"/> CLEAR
PH, UNITS <input checked="" type="checkbox"/> PH PAPER	6.7			6.5		<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	604	458	458	719	672	<input type="checkbox"/> COLORED
PUMP RATE, GPM	3.57 gpm					<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

URGING SAMPLING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDEPS# \_\_\_\_\_  
 2"  4"  # \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION **886.8**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			
NA	SS16	YES	HNO3 TO pH<2			
CD	SS16	YES	HNO3 TO pH<2		217	02280.C
CR	SS16	YES	HNO3 TO pH<2			
HG	SB03	YES	HNO3 TO pH<2			
PB	SD24	YES	HNO3 TO pH<2			
NI	SS16	YES	HNO3 TO pH<2			
BA	SS16	YES	HNO3 TO pH<2			
HARD	USEPA 130.2	YES	HNO3 TO pH<2		217	02280.C
NIT	TF10	YES	H2SO4 TO pH<2		218	02280.C
CL	TT08	YES	4 DEG C		219	
SO4	TT08	YES	4 DEG C			
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	220	
TDS	USEPA 160.1	NO	4 DEG C	500 ML POLY		
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	221	042870.C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	224	01280.C
NG	99	NO	4 DEG C	1 L AG		
NAM	UN06	NO	4 DEG C	1 L AG	226	01280.C
DNT	UW26	NO	4 DEG C	1 L AG	227	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		

OTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*pH probe not working - used pH paper

SIGNATURE: Paul G. Smith/L.T.  
 RECEIVED BY: Nancy E. Rofka



# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN 8910B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4-26-92**

SITE ID **PBN-89-10B**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1500 END 1630**

PROGRAM **C**

WEATHER **OVERCAST 40's**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. **-20 FT**  
 WELL DEPTH **170 FT**  MEASURED  HISTORICAL  
 WATER DEPTH **121.25 FT**  
 HEIGHT OF WATER COLUMN **48.75 FT** **47** GAL/VOL **7**  
**235** TOTAL GAL PURGED  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H2O CONTAINED?  VOC  DNT  NO  PVC  SS  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.2 PPM** WELL MOUTH **0.6 PPM**  
 WELL DIAMETER  2 INCH  4 INCH  INCH  
 RISER ELEVATION **891.81**  
 GROUNDWATER ELEVATION \_\_\_\_\_

### PURGE DATA

PURGE VOLUME	@ 47 GAL	@ 94 GAL	@ 131 GAL	@ 168 GAL	@ 235 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> COOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.9	10.9	11.0	10.9	10.8	
PH, UNITS <input type="checkbox"/> PH PAPER	7.5	7.5	7.3	7.4	7.2	
SPECIFIC CONDUCTIVITY umhos/cm	573	569	567	571	565	
PUMP RATE, GPM	2.2					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION **389.1**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2			228	052061C
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			228	052061C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		229	052061C
CL TT08	YES	4 DEG C	500 ML POLY		230	
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		231	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3) 40 ML VIAL		232	0428701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		235	0428701C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		237	0428701C
DNT UW26	NO	4 DEG C	1 L AG		238	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]*  
 RECEIVED BY: *[Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBIN89110C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBIN-89-110C

JOB NUMBER 6853-04

SAMPLING DATE 4-26-92

LOCATION ACTIVITY START 1500 END 1700

PROGRAM C

FILE NAME CGW

WEATHER OVERCAST NOS

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.10 FT

PROTECTIVE CASING/WELL DIFF. -0.05 FT

WELL DEPTH 144.5 FT  MEASURED  HISTORICAL

WATER DEPTH 116.13 FT

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION 827.00

HEIGHT OF WATER COLUMN 75.31 FT

63 GAL/VOL  
 315 TOTAL GAL PURGED

GROUNDWATER ELEVATION 770.87

PURGE H2O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.2 PPM

WELL MOUTH 0.3 PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	1	2	3	4	5
	63 GAL	129 GAL	192 GAL	258 GAL	315 GAL
TEMP, DEG C	11.1	11.3	11.1	11.1	11.2
pH, UNITS <input type="checkbox"/> pH PAPER	7.5	7.3	7.3	7.3	7.2
SPECIFIC CONDUCTIVITY umhos/cm	563	578	561	562	562
PUMP RATE, GPM					

### SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING	SAMPLING	EQUIPMENT ID	DECON FLUIDS USED	WATER LEVEL EQUIP. USED	GROUND ELEVATION	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER	ISCO # GRUNDFOS# <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" #	<input checked="" type="checkbox"/> POTABLE WATER <input type="checkbox"/> LIQUINOX <input type="checkbox"/> STEAM CLEANING	<input checked="" type="checkbox"/> ELECTRIC COND. PROBE <input type="checkbox"/> FLOAT ACTIVATED <input type="checkbox"/> PRESSURE TRANSDUCER	224.7
NUMBER OF FILTERS USED					1	

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2			239	032600C
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			239	032600C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		240	052510C
CL TT08	YES	4 DEG C	500 ML POLY		241	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		242	
TDS USEPA 160.1	NO	4 DEG C				
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3) 40 ML VIAL		243 / 244 / 245	042420C
3N/A UM16	NO	4 DEG C	(2) 1 L AG		246 / 247	022510C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		248	022510C
ONT UW26	NO	4 DEG C	1 L AG		249	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

Put a PVC cap on the well.

SIGNATURE: *[Signature]*  
 RECEIVED BY: *[Signature]*

**ABB ENVIRONMENTAL SERVICES, INC.**

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMSEP

PIEN819110D

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 7-29-92

SITE ID PIEN-819-110D

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1100 END 1300

PROGRAM C

WEATHER SUNNY

**WATER LEVEL / WELL DATA**

WELL DEPTH 240 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 3.50 FT

PROTECTIVE CASING/WELL DIFF. -0.26 FT

WATER DEPTH 112.92 FT

85 GAL/VOL

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION 824.25

HEIGHT OF WATER COLUMN \_\_\_\_\_ FT

426 TOTAL GAL PURGED

GROUNDWATER ELEVATION 770.93

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO  PVC  SS

AMBIENT AIR 0.0 PPM WELL MOUTH 0.0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 \_\_\_\_\_ INCH

**PURGE DATA**

PURGE VOLUME	<u>85</u> GAL	<u>170</u> GAL	<u>255</u> GAL	<u>341</u> GAL	<u>426</u> GAL
TEMP, DEG C	<u>12.7</u>	<u>12.2</u>	<u>12.4</u>	<u>12.4</u>	<u>12.2</u>
pH, UNITS	<u>7.5</u>	<u>7.4</u>	<u>7.5</u>	<u>7.6</u>	<u>7.6</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>750</u>	<u>251</u>	<u>548</u>	<u>542</u>	<u>548</u>
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING   
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDFOSS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 820.9

NUMBER OF FILTERS USED \_\_\_\_\_

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input type="checkbox"/>		
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> CA	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> NA	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> CD	YES	HNO3 TO pH<2		<input type="checkbox"/>	<u>250</u>	<u>032600C</u>
<input type="checkbox"/> CR	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> HG	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> PB	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> NI	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> BA	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> HARD	YES	HNO3 TO pH<2		<input type="checkbox"/>	<u>250</u>	<u>032600C</u>
<input type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>	<u>251</u>	<u>032810C</u>
<input type="checkbox"/> CL	YES	4 DEG C	500 ML POLY	<input type="checkbox"/>	<u>252</u>	
<input type="checkbox"/> SO4	YES	4 DEG C	500 ML POLY	<input type="checkbox"/>	<u>253</u>	
<input type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
<input type="checkbox"/> TDS	NO	4 DEG C		<input type="checkbox"/>		
<input type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
<input type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
<input type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input type="checkbox"/>	<u>254</u> <u>255</u> <u>256</u>	<u>032810C</u>
<input type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>	<u>257</u> <u>258</u>	<u>032810C</u>
<input type="checkbox"/> NG	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
<input type="checkbox"/> NAM	NO	4 DEG C	1 L AG	<input type="checkbox"/>	<u>259</u>	<u>032810C</u>
<input type="checkbox"/> DNT	NO	4 DEG C	1 L AG	<input type="checkbox"/>	<u>260</u>	
<input type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

**NOTES**

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(SAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM89111

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBM-89-111

JOB NUMBER 6853-04

SAMPLING DATE 4/22/92

LOCATION ACTIVITY START 1330 END 1500

PROGRAM C

FILE NAME CGW

WEATHER OVERCAST 90%

### WATER LEVEL / WELL DATA

WELL DEPTH 114 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.9 FT

PROTECTIVE CASING/WELL DIFF. .18 FT

WATER DEPTH 110.44 FT

5 GAL/VOL

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
PVC WELL CAP

RISER ELEVATION 824.41

HEIGHT OF WATER COLUMN 3.6 FT

25 TOTAL GAL PURGED

GROUNDWATER ELEVATION 773.97

PURGE H2O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR D.O. PPM

WELL MOUTH 0.0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	@ 5 GAL	@ 10 GAL	@ 15 GAL	@ 20 GAL	@ 25 GAL
TEMP, DEG C	10.1	10.1	10.3	10.3	10.5
PH, UNITS <input type="checkbox"/> PH PAPER	7.65	7.58	7.57	7.56	7.57
SPECIFIC CONDUCTIVITY umhos/cm	578	577	590	576	581
PUMP RATE, GPM	2				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
SUBMERSIBLE PUMP  GRUNDFOS # AB3 #2  
BAILER  2"  4" # \_\_\_\_\_  
PVC/SILICON TUBING   
IN-LINE/DISPOSABLE FILTER   
OTHER \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 381.6

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	261	103260C
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	261	103260C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	262	103260C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	263	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	264	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 340 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC Um33	NO	HCL, 4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	265	103260C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	266	103260C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	270	103260C
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	271	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GMM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Jana S. Carter*

RECEIVED BY: *Rob P. Prout*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**PBN 89-12A**

PROJECT: **USATHAMA-BAAP**

SITE TYPE: **WELL**

SITE ID: **PBN-89-12A**

JOB NUMBER: **6853-04**

SAMPLING DATE: **4/29/92**

LOCATION ACTIVITY: **START 0800 END 0900**

PROGRAM: **C**

FILE NAME: **CGW**

WEATHER: **SUNNY 50s**

### WATER LEVEL / WELL DATA

WELL DEPTH: **104 FT**

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): **4.308 FT**

PROTECTIVE CASING/WELL DIFF. ELEVATION: **855.64**

WATER DEPTH: **91.27 FT**

**22** GAL/VOL **(21.5)**

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
PVC WELL CAP

YES NO N/A

RISER ELEVATION: **855.64**

HEIGHT OF WATER COLUMN: **12.73 FT**

**110** TOTAL GAL PURGED **(100)**

GROUNDWATER ELEVATION: **764.39**

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR: **0.5 PPM**

WELL MOUTH: **0.5 PPM**

WELL DIAMETER:  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

	CP36	CP42	CP48	CP54	CP60
PURGE VOLUME	22 GAL	44 GAL	66 GAL	88 GAL	110 GAL
TEMP, DEG C	11.0	10.8	10.7	10.8	10.8
pH, UNITS <input type="checkbox"/> pH PAPER	7.5	7.6	7.5	7.5	7.5
SPECIFIC CONDUCTIVITY umhos/cm	624	592	594	592	513
PUMP RATE, GPM	4.0				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODCR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION: **850.6**

NUMBER OF FILTERS USED: **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS15	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Paul C. Smith/aka*

RECEIVED BY: *Paul C. Smith*

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**PBN 89-12B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4-28-92**

SITE ID **PBN-89-12B**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1400 END 1600**

PROGRAM **C**

WEATHER **sun 50s**

### WATER LEVEL / WELL DATA

WELL DEPTH **141.5 FT**  MEASURED  HISTORICAL

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **3.65 FT**

PROTECTIVE CASING/WELL DIFF. **0.33 FT**

WATER DEPTH **91.81 FT**

GAL/VOL **(46.5)**

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION **856.04**

HEIGHT OF WATER COLUMN **49.69 FT**

TOTAL GAL PURGED **(23)**

GROUNDWATER ELEVATION **764.73**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **0.0 PPM**

WELL MOUTH **0.0 PPM**

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	3.08	3.20	3.32	3.44	3.56
3.56	246.5 GAL	293.0 GAL	259.5 GAL	226.0 GAL	233.3 GAL
EMP, DEG C	11.3	10.8	10.7	10.7	10.7
PH, UNITS	7.9	7.4	7.5	7.4	7.6
SPECIFIC CONDUCTIVITY umhos/cm	1629	604	603	603	606
PURGE RATE, GPM	4.8 gpm				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID: PERISTALTIC PUMP  ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS# \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING  \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER  \_\_\_\_\_  
 OTHER  \_\_\_\_\_

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION **852.6**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TOTAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	HNO3 TO pH<2				
NA	SS16	HNO3 TO pH<2				
CD	SS16	HNO3 TO pH<2				
CR	SS16	HNO3 TO pH<2				
HG	SB03	HNO3 TO pH<2				
PB	SD24	HNO3 TO pH<2				
NI	SS16	HNO3 TO pH<2				
BA	SS16	HNO3 TO pH<2				
HARD	USEPA 130.2	HNO3 TO pH<2				
NIT	TF10	H2SO4 TO pH<2	500 ML POLY			
CL	TT08	4 DEG C	500 ML POLY			
SO4	TT08	4 DEG C				
ALK	USEPA 310.1	4 DEG C	500 ML POLY			
TDS	USEPA 160.1	4 DEG C				
TOC	USEPA 415.1	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY			
VOC	USEPA 816.1	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A	UM16	4 DEG C	(2) 1 L AG			
NG	99	4 DEG C	1 L AG			
NAM	UN06	4 DEG C	1 L AG			
DNT	UN26	4 DEG C	1 L AG			
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GWM			

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TOTAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]*  
 RECEIVED BY: *[Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER PBM85101

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBM-85-01

JOB NUMBER 6853-04

SAMPLING DATE 4.25.92

LOCATION ACTIVITY START 1300 END 1500

PROGRAM C

FILE NAME CGW

WEATHER clouds, 40°F

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 3.55 FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. -0.60 FT  
 WELL DEPTH 118 FT  MEASURED  HISTORICAL  
 WATER DEPTH 93.55 FT  
 HEIGHT OF WATER COLUMN 24.45 FT  
 RISER ELEVATION 862.47  
 GROUNDWATER ELEVATION 768.92  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 AMBIENT AIR 0.4 PPM WELL MOUTH 0.4 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	<u>36</u> GAL	<u>72</u> GAL	<u>108</u> GAL	<u>144</u> GAL	<u>180</u> GAL	SAMPLE OBSERVATIONS: <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.1</u>	<u>10.1</u>	<u>10.2</u>	<u>10.3</u>	<u>10.3</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.4</u>	<u>7.2</u>	<u>7.2</u>	<u>7.2</u>	<u>7.1</u>	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>662</u>	<u>452</u>	<u>652</u>	<u>685</u>	<u>657</u>	
PUMP RATE, GPM	<u>4.0</u>					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP  GROUND FOS#   
 BAILER  2"  4" # 4  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION -857.8  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC <u>UM33</u>	NO	HCL, 4 DEG C	(3)40 ML VIAL			
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG			
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Steph Tracy / AA  
 RECEIVED BY: Paul P. White

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER PIB M 25102

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PIB M - 185 - 02

JOB NUMBER 6853-04

SAMPLING DATE 4/14/92

LOCATION ACTIVITY START 1130 END 1230

PROGRAM C

FILE NAME CGW

WEATHER cloudy 30s

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 3.36 FT  
 PROTECTIVE CASING/WELL DIFF. -0.33 FT

WELL DEPTH 101 FT  
 MEASURED  
 HISTORICAL

WATER DEPTH 80.74 FT  
33 GAL/VOL 33.2

HEIGHT OF WATER COLUMN 20.26 FT  
165 TOTAL GAL PURGED (765)  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0.0 PPM  
 WELL MOUTH 0.0 PPM  
 WELL DIAMETER  2 INCH  4 INCH

RISER ELEVATION 849.16  
 GROUNDWATER ELEVATION 768.42

### PURGE DATA

PURGE VOLUME	@ 33 GAL	@ 66 GAL	@ 99 GAL	@ 132 GAL	@ 165 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)	
TEMP, DEG C	<u>10.3</u>	<u>10.4</u>	<u>10.5</u>	<u>10.6</u>	<u>10.5</u>		
PH, UNITS <input checked="" type="checkbox"/> PH PAPER	<u>6.7</u>	<u>6.5</u>	<u>6.3</u>	<u>6.5</u>	<u>6.5</u>		
SPECIFIC CONDUCTIVITY umhos/cm	<u>493</u>	<u>699</u>	<u>699</u>	<u>700</u>	<u>701</u>		
PUMP RATE, GPM	<u>4 gpm</u>						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID  
 PERISTALTIC PUMP ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP GRINDFOSS # \_\_\_\_\_  
 BAILER 2"  4"  # \_\_\_\_\_  
 PVC/SILICON TUBING \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 PRESSURE TRANSDUCER

GROUND ELEVATION ~344.5

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
HG	SS16	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2				
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>409</u>	<u>0525101C</u>
CL	TT08	YES	4 DEG C	500 ML POLY		<u>410</u>	<u>024601C</u>
SO4	TT08	YES	4 DEG C			<u>411</u>	
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>412</u>	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	um33	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>413</u>	
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		<u>414</u>	
NG	99	NO	4 DEG C	1 L AG			
NAM	UM06	NO	4 DEG C	1 L AG		<u>418</u>	<u>10225101C</u>
DNT	UM26	NO	4 DEG C	1 L AG		<u>419</u>	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (CAL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Paul C. Smith/L.T.  
 RECEIVED BY: Janice E. Rippa



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM 8503

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBM-85-03

JOB NUMBER 6853-04

SAMPLING DATE 4/14/92

LOCATION ACTIVITY START: 900 END: 1000

PROGRAM C

FILE NAME CGW

WEATHER cloudy, 30's

### WATER LEVEL / WELL DATA

WELL DEPTH 148 FT

MEASURED  
 HISTORICAL

TOP OF WELL PROTECTIVE  
 TOP OF CASING CASING STICK-UP (FROM GROUND)

3.45 FT

PROTECTIVE CASING/WELL DIFF. -0.42 FT

WATER DEPTH 117.44 FT

40 GAL/VOL

WELL INTEGRITY: YES NO N/A

RISER ELEVATION 825.78

HEIGHT OF WATER COLUMN 30.56 FT

200 TOTAL GAL PURGED

PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
PVC WELL CAP

GROUNDWATER ELEVATION 768.54

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0.0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

### PURGE DATA

PURGE VOLUME	~ 40 GAL	~ 80 GAL	~ 120 GAL	~ 160 GAL	~ 200 GAL
TEMP, DEG C	<u>11.0</u>	<u>10.5</u>	<u>10.6</u>	<u>11.3</u>	<u>11.0</u>
pH, UNITS <input checked="" type="checkbox"/> pH PAPER	<u>6.7</u>	<u>6.5</u>	<u>6.6</u>	<u>6.5</u>	<u>6.5</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>772</u>	<u>775</u>	<u>772</u>	<u>770</u>	<u>766</u>
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID

ISCO #  
GRUNDFOS #  
 2"  4" #

DECON FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

~881.4

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			<u>421</u>	<u>0528012</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>422</u>	
CL TT08	YES	4 DEG C	500 ML POLY		<u>423</u>	
SO4 TT08	YES	4 DEG C			<u>424</u>	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>425</u> / <u>426</u> / <u>427</u>	<u>0528012</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG		<u>428</u> / <u>429</u>	<u>0528012</u>
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		<u>430</u>	<u>0528012</u>
DNT UW26	NO	4 DEG C	1 L AG		<u>431</u>	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

PURGE WATER CONTAMINATED FOR VOC'S

SIGNATURE: Paul G. Smith / LT

RECEIVED BY: Nancy E. Rose

ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM85104

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE

4.14.92

SITE ID PBM-185-04

JOB NUMBER

6853-04

FILE NAME

CGW

LOCATION ACTIVITY START 0730 END 0830

PROGRAM

C

WEATHER

cloudy, 30s

WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

3.46 FT

PROTECTIVE CASING/WELL DIFF.

-0.58 FT

WELL DEPTH 124 FT

MEASURED  
 HISTORICAL

WATER DEPTH 98.90 FT

37 GAL/VOL

36.4

WELL INTEGRITY: PROT. CASING SECURE

YES NO N/A

RISER ELEVATION

866.65

HEIGHT OF WATER COLUMN 25.1 FT

185

TOTAL GAL PURGED

1.3

CONCRETE COLLAR INTACT

YES  NO  N/A

GROUNDWATER ELEVATION

767.75

PURGE H2O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0.0 PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	a 37 GAL	a 74 GAL	a 111 GAL	a 148 GAL	a 185 GAL
EMP, DEG C	10.1	10.2	10.7	10.3	10.4
H, UNITS <input checked="" type="checkbox"/> pH PAPER	7.0	6.5	7.0	6.5	6.5
SPECIFIC CONDUCTIVITY umhos/cm	730	734	734	734	732
PUMP RATE, GPM	3.7 gpm				

SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

DRIVING SAMPLING  
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID ISCO # \_\_\_\_\_  
 GROUND FOS#  2"  4" # \_\_\_\_\_

DEPON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 362.0

NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L. POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA*	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	S803	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	433	0528101C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	434	
CL	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	435	
SD4	TT08	YES	4 DEG C		<input checked="" type="checkbox"/>	436	
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS	USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	437	0428101C
EN/A	UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG	99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAH	UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	442	0229101C
DNT	UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	443	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

JTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: R. C. S. H. L. T.

RECEIVED BY: Nancy E. Rota

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER PBM 25 05

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBM-85-015

JOB NUMBER 6853-04

SAMPLING DATE 4.12.92

LOCATION ACTIVITY START 1630 END 1715

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 40's

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE  
 TOP OF CASING (FROM GROUND)

WELL DEPTH 107 FT  MEASURED  HISTORICAL  
 WATER DEPTH 96.87 FT  
 HEIGHT OF WATER COLUMN 10.13 FT

PROTECTIVE CASING/WELL DIFF. 3.18 FT  
 RISER ELEVATION 865.88  
 GROUNDWATER ELEVATION 767.01

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 MATERIAL  PVC  SS  
 AMBIENT AIR 0.0 PPM  
 WELL MOUTH 0.0 PPM  
 WELL DIAMETER  4 INCH

### PURGE DATA

PURGE VOLUME	@ 17 GAL	@ 34 GAL	@ 51 GAL	@ 68 GAL	@ 85 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.3</u>	<u>10.3</u>	<u>10.3</u>	<u>10.5</u>	<u>10.2</u>	
pH, UNITS <input checked="" type="checkbox"/> pH PAPER	<u>6.0</u>	<u>6.0</u>	<u>6.0</u>	<u>6.0</u>	<u>6.0</u>	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>754</u>	<u>768</u>	<u>775</u>	<u>774</u>	<u>778</u>	
PUMP RATE, GPM	<u>3.7gpm</u>					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_  
 GROUND FOS# \_\_\_\_\_  
 2"  4"  # \_\_\_\_\_

RECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION ~859  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2				
CA SS16	YES	HNO <sub>3</sub> TO pH<2				
NA SS16	YES	HNO <sub>3</sub> TO pH<2				
CD SS16	YES	HNO <sub>3</sub> TO pH<2				
CR SS16	YES	HNO <sub>3</sub> TO pH<2				
HG SB03	YES	HNO <sub>3</sub> TO pH<2				
PB SD24	YES	HNO <sub>3</sub> TO pH<2				
NI SS16	YES	HNO <sub>3</sub> TO pH<2				
BA SS16	YES	HNO <sub>3</sub> TO pH<2				
HARD USEPA 130.2	YES	HNO <sub>3</sub> TO pH<2				
NIT TF10	YES	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY		<u>445</u>	<u>0529101C</u>
CL TT08	YES	4 DEG C	500 ML POLY		<u>446</u>	
SO <sub>4</sub> TT08	YES	4 DEG C	500 ML POLY		<u>447</u>	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>448</u>	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO					
NH <sub>3</sub> N <sub>2</sub> USEPA 350.2	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	(3)40 ML VIAL			
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>449</u>	<u>450</u> / <u>451</u> / <u>0128701C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		<u>454</u>	<u>0229101C</u>
DNT UW26	NO	4 DEG C	1 L AG		<u>455</u>	
TPH USEPA 418.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	1 L GWM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CK, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATUR ALLSILL LT  
 RECEIVED BY: Wmancy E. R...

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM2506

PROJECT USATHAMA-SAAP

SITE TYPE WELL

SAMPLING DATE 4.14.92

SITE ID PBM-185-106

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1130 END 1230

PROGRAM C

WEATHER Cloudy 30

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 3.1 FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. 35 FT  
 MEASURED  
 HISTORICAL  
 WELL DEPTH 97 FT  
 WATER DEPTH 82.90 FT  
 HEIGHT OF WATER COLUMN 14.1 FT  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR - PPM  
 WELL MOUTH - PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH  
 RISER ELEVATION 843.12  
 GROUNDWATER ELEVATION 765.22

### PURGE DATA

PURGE VOLUME	a 30 GAL	a 60 GAL	a 90 GAL	a 120 GAL	a 150 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	9.9	10.3	10.3	10.3	10.3	<input type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER	7.37	7.53	7.6	7.5	7.6	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	474	483	483	483	485	<input type="checkbox"/> COLORED
PUMP RATE, GPM	3.0	3.0	3.0	3.0	3.0	<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING  
 PERISTALTIC PUMP ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP GRUNDFOS# \_\_\_\_\_  
 BAILER 2"  4"  # \_\_\_\_\_  
 PVC/SILICON TUBING \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION ~843.5  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			457	10320601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		458	
CL TT08	YES	4 DEG C	500 ML POLY		459	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		460	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC UM34	NO	HCL, 4 DEG C	(3)40 ML VIAL		461	462 463 2125 n.c
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		466	0228101C
DNT UW26	NO	4 DEG C	1 L AG		467	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

**OTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *J. Pearson*  
 RECEIVED BY: *Nancy E. Porter*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN 2501A**

PROJECT **USATHAMA-SAAP**

SITE TYPE **WELL**

SAMPLING DATE **4/23/92**

SITE ID **PBN-185-01A**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1200/1300 END 1430**

PROGRAM **C**

WEATHER **Cloudy 40's Rain**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **3.55** FT

PROTECTIVE CASING/WELL DIFF. **0.24** FT

WELL DEPTH **121** FT

WATER DEPTH **105.89** FT

HEIGHT OF WATER COLUMN **15.11** FT

MEASURED  HISTORICAL

WELL INTEGRITY: YES NO N/A

PROT. CASING SECURE  CONCRETE COLLAR INTACT

WELL LOCKED  PVC WELL CAP

RISER ELEVATION **874.56**

GROUNDWATER ELEVATION **768.67**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **NR** PPM

WELL MOUTH **NR** PPM

WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	@ 25 GAL	@ 50 GAL	@ 75 GAL	@ 100 GAL	@ 125 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLGRED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.1	10.2	10.3	10.5	10.5	
pH, UNITS <input type="checkbox"/> pH PAPER	7.3	7.3	7.3	7.4	7.3	
SPECIFIC CONDUCTIVITY umhos/cm	342	346	348	348	349	
PUMP RATE, GPM	3.0	3.25				

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDEOS#

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

GROUND ELEVATION **~869.5**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC Um33	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
 TAL METALS (AL, SB, AS, BA, RE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)

*NR = No reading - TE inoperative.  
 No concrete collar*

SIGNATURE: *[Signature]*  
 RECEIVED BY: *[Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN 8502A

PROJECT USATHAMA-SAAP

SITE TYPE WELL

SAMPLING DATE 4/23/92

SITE ID PBN-85-02A

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0800 END 0900

PROGRAM C

WEATHER cloudy 40°

### WATER LEVEL / WELL DATA

WELL DEPTH 137 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.95 FT

PROTECTIVE CASING/WELL DIFF. 0.37 FT

WATER DEPTH 130.15 FT

10 GAL/VOL 10

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
PVC WELL CAP

YES NO N/A

RISER ELEVATION 898.79

HEIGHT OF WATER COLUMN 6.85 FT

50 TOTAL GAL PURGED

GROUNDWATER ELEVATION 768.64

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.2 PPM

WELL MOUTH 0.2 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	@ 10 GAL	@ 20 GAL	@ 30 GAL	@ 40 GAL	@ 50 GAL
TEMP, DEG C	<u>10.0</u>	<u>10.3</u>	<u>10.5</u>	<u>10.1</u>	<u>10.5</u>
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.3</u>	<u>7.6</u>	<u>7.5</u>	<u>7.6</u>	<u>7.2</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>402</u>	<u>591</u>	<u>585</u>	<u>583</u>	<u>588</u>
PUMP RATE, GPM	<u>3.2</u>				

### SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING <input checked="" type="checkbox"/>	SAMPLING <input checked="" type="checkbox"/>	EQUIPMENT ID PERISTALTIC PUMP ISCO # SUBMERSIBLE PUMP GRUNDFOS# <u>7</u> BAILER <u>2"</u> <input type="checkbox"/> <u>4"</u> <input type="checkbox"/> PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER	DECON FLUIDS USED <input checked="" type="checkbox"/> POTABLE WATER <input type="checkbox"/> LIQUINOX <input type="checkbox"/> STEAM CLEANING	WATER LEVEL EQUIP. USED <input checked="" type="checkbox"/> ELECTRIC COND. PROBE <input type="checkbox"/> FLOAT ACTIVATED <input type="checkbox"/> PRESSURE TRANSDUCER	GROUND ELEVATION <u>~894.2</u>
			NUMBER OF FILTERS USED <u>1</u>		

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>140</u>	<u>032601C</u>
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>140</u>	<u>032601C</u>
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>141</u>	<u>052810C</u>
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>142</u>	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>143</u>	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>144</u> / <u>145</u> / <u>146</u>	<u>0428701C</u>
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>149</u>	<u>022810C</u>
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>150</u>	
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: [Signature]  
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# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PB.N. 8503A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PB.N. 85-03A

JOB NUMBER 6853-04

SAMPLING DATE 4.25.92

LOCATION ACTIVITY START 0830 END 1000

PROGRAM C

FILE NAME CGW

WEATHER Cloudy, 40's F

### WATER LEVEL / WELL DATA

WELL DEPTH 94 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 3.15 FT

PROTECTIVE CASING/WELL DIFF. -0.10 FT

WATER DEPTH 82.89 FT

19 GAL/VOL 19

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION 351.22

HEIGHT OF WATER COLUMN 82.89 FT

0.5 TOTAL GAL PURGED

GROUNDWATER ELEVATION 768.33

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0.2 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

### PURGE DATA

PURGE VOLUME 10.10 A

at 19 GAL at 38 GAL at 57 GAL at 76 GAL at 95 GAL

TEMP, DEG C 10.2  
 pH, UNITS 7.4  
 SPECIFIC CONDUCTIVITY 545 umhos/cm  
 PUMP RATE, GPM 2.5

<u>10.2</u>	<u>10.5</u>	<u>10.6</u>	<u>10.6</u>	<u>10.4</u>
<u>7.4</u>	<u>7.4</u>	<u>7.4</u>	<u>7.3</u>	<u>7.4</u>
<u>545</u>	<u>562</u>	<u>565</u>	<u>558</u>	<u>560</u>

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY slightly  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID  
 PERISTALTIC PUMP ISCO #  
 SUBMERSIBLE PUMP GRUNDFOS #   
 BAILER  2"  4" #  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

~846.5

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			<u>613</u>	<u>10528101C</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>614</u>	
CL TT08	YES	4 DEG C	500 ML POLY		<u>615</u>	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>616</u>	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>617</u>	<u>618</u> <u>619</u> <u>0428701C</u>
7N/A UM16	NO	4 DEG C	(2) 1 L AG			
99	NO	4 DEG C	1 L AG			
UN06	NO	4 DEG C	1 L AG		<u>622</u>	<u>10228101C</u>
UW25	NO	4 DEG C	1 L AG		<u>623</u>	
USEPA 419.1	NO	H2SO4 TO pH<2	1 L GWM			

METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

*near after 5 volumes*

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# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

P B M 8 2 0 1

PROJECT USATHAMA-GAAP

SITE TYPE WELL

4-10-92

SITE ID P B M - 8 2 - 0 1

JOB NUMBER 6853-04

SAMPLING DATE 4-9-92 (M)

LOCATION ACTIVITY START 0830 END 0730

PROGRAM C

FILE NAME CGW

WEATHER cloudy 45° (M)

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.04 FT**  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. **- .48 FT**  
 MEASURED  
 HISTORICAL  
 WELL DEPTH **102.5 FT**  
 WATER DEPTH **86.38 FT**  
 HEIGHT OF WATER COLUMN **16.12 FT**  
 RISER ELEVATION **857.60**  
 GROUNDWATER ELEVATION **771.22**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.1** PPM  
 WELL MOUTH **0.1** PPM  
 WELL DIAMETER  2 INCH  4 INCH

### PURGE DATA

PURGE VOLUME	52	78	104	SAMPLE OBSERVATIONS
at 26 GAL	at 44 GAL	at 60 GAL	at 88 GAL	<input type="checkbox"/> CLEAR
TEMP, DEG C	10.8	10.7	10.6	<input type="checkbox"/> CLOUDY
pH, UNITS <input checked="" type="checkbox"/> pH PAPER	6.8		7.0	<input type="checkbox"/> COLORED
SPECIFIC CONDUCTIVITY umhos/cm	564	572	576	<input type="checkbox"/> TURBID
PUMP RATE, GPM	3.4 gpm			<input type="checkbox"/> ODOR
				<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERGIBLE PUMP GRUNDFOS# \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER   
 LIQUINOX   
 STEAM CLEANING \_\_\_\_\_  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE   
 FLOAT ACTIVATED   
 PRESSURE TRANSDUCER \_\_\_\_\_  
 GROUND ELEVATION **855.7**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2			85	022230.C
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			85	022260.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		86	052810.C
CL TT08	YES	4 DEG C	500 ML POLY		87	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		88	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		89	042270.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		90	012810.C
NG 99	NO	4 DEG C	1 L AG		91	
NAM UN06	NO	4 DEG C	1 L AG		92	012810.C
DNT UW26	NO	4 DEG C	1 L AG		93	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		94	
					95	

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\*pH probe not working - used pH paper

SIGNATURE: Paul C. Smith / J.T.  
 RECEIVED BY: Nancy E. Rotter



ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN25104A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4-12-92

SITE ID PBN-851-04A

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1545 END 1630

PROGRAM C

WEATHER Sunny, cloudy 40

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 3.08 FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. - .17 FT

WELL DEPTH 111 FT

MEASURED  HISTORICAL

WATER DEPTH 93.82 FT

WELL INTEGRITY: YES NO N/A

PROT. CASING SECURE

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

RISER ELEVATION 866.36

GROUNDWATER ELEVATION 766.54

WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE H2O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.2 PPM

WELL MOUTH 1.0 PPM

PURGE DATA

PURGE VOLUME	@ 28 GAL	@ 50 GAL	@ 34 GAL	@ 112 GAL	@ 140 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.3	10.5	10.2	10.3	10.1	
pH, UNITS <input checked="" type="checkbox"/> pH PAPER	6	6.0	6	6.0	6.0	
SPECIFIC CONDUCTIVITY umhos/cm	712	714	712	714	713	
PUMP RATE, GPM	4 gpm					

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID \_\_\_\_\_

SAMPLING  SUBMERSIBLE PUMP ISCO # \_\_\_\_\_

BAILER GRUNDEFS# \_\_\_\_\_

PVC/SILICON TUBING 3/2" 4" # \_\_\_\_\_

IN-LINE/DISPOSABLE FILTER \_\_\_\_\_

OTHER \_\_\_\_\_

DECON FLUIDS USED  PCTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

GROUND ELEVATION ~855

NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LCT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC UH33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: [Signature]

RECEIVED BY: Nancy E. R...

\* RESAMPLED ON 4 29 92 FOR NAM (Reservoir) [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**P18M8202**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **P18M-82-02**

JOB NUMBER **6853-04**

SAMPLING DATE **4-10-72**

LOCATION ACTIVITY **START 1445 END 1530**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **rain 40°S**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **2.15** FT  
 PROTECTIVE CASING/WELL DIFF. **-1.13** FT  
 WELL DEPTH **117.5** FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH **102.13** FT  
 HEIGHT OF WATER COLUMN **15.37** FT  
 RISER ELEVATION **373.36**  
 GROUNDWATER ELEVATION **771.23**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **---** PPM  
 WELL MOUTH **---** PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	a 2.5 GAL	a 25 GAL	a 37.5 GAL	a 50 GAL	a 62.5 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	14.8	15.4	15.5	15.5	15.1	
PH, UNITS <input checked="" type="checkbox"/> pH PAPER	8.2					
SPECIFIC CONDUCTIVITY umhos/cm	599	608	607	604	602	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

URGING SAMPLING  PERISTALTIC PUMP ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP GRUNDEFS# \_\_\_\_\_  
 BAILER 2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION **870.9**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CO SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
40 SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			349	052810C
NI7 TF10	YES	H2SO4 TO pH<2	500 ML POLY		350	
CL TT08	YES	4 DEG C	500 ML POLY		351	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		352	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL				
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C (3)40 ML VIAL			353	052810C
BN/A UM16	NO	4 DEG C (2) 1 L AG			356	052810C
NG 99	NO	4 DEG C	1 L AG		354	
NAM UN06	NO	4 DEG C	1 L AG		355	052810C
DNT UW26	NO	4 DEG C	1 L AG		357	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Paul S. Hill, Jr.  
 RECEIVED BY: Nancy E. Korta

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**PBM8203**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **PBM-82-103**

JOB NUMBER **6853-04**

SAMPLING DATE **4-11-92**

LOCATION ACTIVITY **START 0815 END 0915**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **wet/cloudy, 40%**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.28 FT**

TOP OF CASING PROTECTIVE CASING/WELL DIFF. **- .33 FT**

WELL DEPTH **107 FT**  MEASURED  HISTORICAL

WATER DEPTH **94.40 FT**

HEIGHT OF WATER COLUMN **14.54 FT**

WELL INTEGRITY: YES NO N/A

PROT. CASING SECURE

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

RISER ELEVATION **864.73**

GROUNDWATER ELEVATION **770.27**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS

WELL MATERIAL **AMBIENT AIR 0.1 PPM** **WELL MOUTH 0.1 PPM**

WELL DIAMETER  4 INCH  3 INCH

### PURGE DATA

PURGE VOLUME	@ 26 GAL	@ 52 GAL	@ 78 GAL	@ 104 GAL	@ 130 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.8	9.9	10.0	9.8	10.0	
pH, UNITS <input checked="" type="checkbox"/> pH PAPER	6.0	6.0	6.1	6.1	6.1	
SPECIFIC CONDUCTIVITY umhos/cm	544	551	553	552	554	
PUMP RATE, GPM	5.0					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID **ISCO #**

SAMPLING  SUBMERSIBLE PUMP **GRUNDEOS#**

BAILER **2" 4" #**

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED  POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

GROUND ELEVATION **862.7**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	HNO3 TO pH<2				
NA	SS16	HNO3 TO pH<2				
CD	SS16	HNO3 TO pH<2				
CR	SS16	HNO3 TO pH<2				
HG	SB03	HNO3 TO pH<2				
PB	SD24	HNO3 TO pH<2				
NI	SS16	HNO3 TO pH<2				
BA	SS16	HNO3 TO pH<2				
HARD	USEPA 130.2	HNO3 TO pH<2			361	052310.C
NIT	TF10	H2SO4 TO pH<2	500 ML POLY		362	
CL	TT08	4 DEG C	500 ML POLY		363	
SO4	TT08	4 DEG C				
ALK	USEPA 310.1	4 DEG C	500 ML POLY		364	
TDS	USEPA 160.1	4 DEG C				
TOC	USEPA 415.1	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	HCL, 4 DEG C	(3)40 ML VIAL		365	042310.C
B4/A	UM16	4 DEG C	(2) 1 L AG		366	022310.C
NG	99	4 DEG C	1 L AG		367	
NAM	UN06	4 DEG C	1 L AG		370	022310.C
DNT	UW26	4 DEG C	1 L AG		371	
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GLM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Rick CS Hill*

RECEIVED BY: *Nancy E. Rom*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**PBM31204**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **PBM-182-04**

JOB NUMBER **6853-04**

SAMPLING DATE **4-11-92**

LOCATION ACTIVITY **START 0930 END 1030**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **WET/Cloudy 40%**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING/WELL DIFF. **2.29 FT**  
 TOP OF CASING (FROM GROUND) **-.05 FT**  
 WELL DEPTH **115 FT.**  MEASURED  HISTORICAL  
 WATER DEPTH **101.40 FT.**  
 HEIGHT OF WATER COLUMN **13.6 FT.** **23.5 GAL/VOL** WELL INTEGRITY: YES NO N/A  
 RISER ELEVATION **871.42**  
**126** TOTAL GAL PURGED WELL LOCKED   
 PVC WELL CAP   
 PUSHE H2O CONTAINED?  VOC  DNT  NO WELL MATERIAL  PVC  SS AMBIENT AIR **0.3 PPM** WELL MOUTH **0.5 PPM**  
 WELL DIAMETER  2 INCH  4 INCH  INCH  
 GROUNDWATER ELEVATION **170.02**

### PURGE DATA

PURGE VOLUME	23.5 GAL	51 GAL	75.5 GAL	102 GAL	126 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> CLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.8	9.6	11.0	10.6	10.4	
pH, UNITS <input checked="" type="checkbox"/> pH PAPER	6.5	6.5	6.5	6.5	6.5	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	393	529	538	398	515	
PUMP RATE, GPM	4.5 gpm					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP ISCO # \_\_\_\_\_  
 SAMPLING  SUBMERSIBLE PUMP GRUNDEOS# \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION **269.0**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	HNO3 TO pH<2				
CL	YES	H2SO4 TO pH<2	500 ML POLY			
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

HAD TO CLEAN PUMP IMPELLERS TWICE AS THE WELL CONTAINED MAT. THAT LOOKED LIKE GREASE.

SIGNATURE: *Rick G. Smith / L.T.*

RECEIVED BY: *Stacey E. Pora*

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

**PBM8205**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4-1-92**

SITE ID **PBM-82-05**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 10-15 END 11-15**

PROGRAM **C**

WEATHER **WET - 10-15-92**

**WATER LEVEL / WELL DATA**

WELL DEPTH **123.5 FT**

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.34 FT**

PROTECTIVE CASING/WELL DIFF. **-0.01 FT**

WATER DEPTH **106.79 FT**

**28** GAL/VOL **25.2**

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED - CAP BLEN  
 PVC WELL CAP

RISER ELEVATION **276.92**

HEIGHT OF WATER COLUMN **16.71 FT**

**140** TOTAL GAL PURGED

GROUNDWATER ELEVATION **770.13**

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR **0.5** PPM

WELL MOUTH **0.5** PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

**PURGE DATA**

PURGE VOLUME	<u>20</u> GAL	<u>50</u> GAL	<u>84</u> GAL	<u>112</u> GAL	<u>140</u> GAL
TEMP, DEG C	<u>10.4</u>	<u>10.7</u>	<u>10.3</u>	<u>10.4</u>	<u>10.4</u>
pH, UNITS <input checked="" type="checkbox"/> pH PAPER	<u>6.5</u>	<u>6.5</u>	<u>6.5</u>	<u>6.4</u>	<u>6.5</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>610</u>	<u>610</u>	<u>609</u>	<u>614</u>	<u>612</u>
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GROUND POS # \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 SUCROPE WDC.

GROUND ELEVATION **874.5**

NUMBER OF FILTERS USED **1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input type="checkbox"/>		
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>385</u>	<u>0528101C</u>
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>386</u>	
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>387</u>	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>	<u>388</u>	
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>389</u>	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>	<u>390</u>	
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>391</u>	<u>0528101C</u>
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>392</u>	<u>0528101C</u>
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>393</u>	
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>394</u>	<u>0528101C</u>
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>395</u>	
<input checked="" type="checkbox"/> HAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> DNT UW25	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *RICKS M LIT*

RECEIVED BY: *Nancy E Potter*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN 8201A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-82-01A

JOB NUMBER 6853-04

SAMPLING DATE 4.9.92

LOCATION ACTIVITY START 0850/1215 END 1230

PROGRAM C

FILE NAME CGW

WEATHER cloudy, 40's

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 MEASURED  
 HISTORICAL

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.25 FT**  
 PROTECTIVE CASING/WELL DIFF. **7.03 FT**

WELL DEPTH **118 FT**  
 WATER DEPTH **112.11 FT**  
 RISER ELEVATION **884.38**

HEIGHT OF WATER COLUMN **5.89 FT**  
 GAL/VOL **10**  
 TOTAL GAL PURGED **5**  
 WELLS INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 GROUNDWATER ELEVATION **772.27**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.7 PPM**  
 WELL MOUTH **0.9 PPM**  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	a <u>25</u> GAL	a <u>5</u> GAL	a _____ GAL	a _____ GAL	a _____ GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.9</u>	<u>11.6</u>	/	/	/	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>6.5</u>	<u>6.9</u>	/	/	/	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>639</u>	<u>679</u>	/	/	/	
PUMP RATE, GPM			/	/	/	

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDEOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION **881.5**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	100 / 101 / 102	0428701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	105	0:26101C
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	106	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

RAW DRY @ 5-6 GALLONS and sampled. All but 2 liters were collected - let recharge again + finished sample collection. Let recharge 3 hours.

SIGNATURE: R. C. Sutt / L.T.  
 RECEIVED BY: Nancy E. Rofa

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **P.B.N 82 01 B**

PROJECT **USATHAMA-BAAP**  
 SITE ID **P.B.N-82-01B**  
 LOCATION ACTIVITY **START 1000 END 1130**

SITE TYPE **WELL**  
 JOB NUMBER **6853-04**  
 PROGRAM **C**

SAMPLING DATE **4.9.92**  
 FILE NAME **CGW**  
 WEATHER **cloudy, 40's**

### WATER LEVEL / WELL DATA

WELL DEPTH **131 FT.**  MEASURED  HISTORICAL  
 WATER DEPTH **11.10 FT.**  
 HEIGHT OF WATER COLUMN **19.90 FT.**  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **1.1 PPM** WELL MOUTH **1.2 PPM**  
 TOP OF WELL  TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **2.60 FT.**  
 PROTECTIVE CASING/WELL DIFF. **- .58 FT.**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 RISER ELEVATION **883.57**  
 GROUNDWATER ELEVATION **772.47**  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 24 GAL	@ 48 GAL	@ 72 GAL	@ 96 GAL	@ 120 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	11.3	11.3	11.4	11.5	11.6	
pH, UNITS <input type="checkbox"/> pH PAPER	7.3	7.30	7.30	7.30	7.32	
SPECIFIC CONDUCTIVITY umhos/cm	657	653	654	655	655	
PUMP RATE, GPM	3					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_  
 EQUIPMENT ID ISCO # \_\_\_\_\_ GROUND FOS# \_\_\_\_\_ 2"  4" # \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION **881.5**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2				
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			469	05281010
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		470	
CL	TT08	YES	4 DEG C	500 ML POLY		471	
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		472	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		473	04287010
BN/A	UM16	NO	4 DEG C	(2) 1 L AG			
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG		478	0:281010
DNT	UW26	NO	4 DEG C	1 L AG		479	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Paul G. Smith*  
 RECEIVED BY: *Marcy E. Roth*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN 82201C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-82-01C

JOB NUMBER 6853-04

SAMPLING DATE 4.9.92

LOCATION ACTIVITY START 1145 END 1230

PROGRAM C

FILE NAME CGW

WEATHER cloudy, 40°S

### WATER LEVEL / WELL DATA

WELL DEPTH 141 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.40 FT

PROTECTIVE CASING/WELL DIFF. - .50 FT

WATER DEPTH 111.44 FT

31 GAL/VOL

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
PVC WELL CAP  YES  NO  N/A

RISER ELEVATION 833.77

HEIGHT OF WATER COLUMN 30 FT

155 TOTAL GAL PURGED

GROUNDWATER ELEVATION 772.33

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 1.1 PPM

WELL MOUTH 1.1 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	31 GAL	62 GAL	93 GAL	124 GAL	155 GAL
TEMP, DEG C	11.6	12.6	13.3	14.9	14.2
pH, UNITS <input type="checkbox"/> pH PAPER	7.5	7.4	7.4	7.6	7.5
SPECIFIC CONDUCTIVITY $\mu$ mnos/cm	653	643	648	646	656
PUMP RATE, GPM	31				

### SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDEOS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DEFON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 881.5

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>	481	0528:010
NI TF10	YES	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	482	
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	483	
SO <sub>4</sub> TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	484	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
TOC USEPA 415.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	(3) 340 ML VIAL	<input type="checkbox"/>		
NH <sub>3</sub> N <sub>2</sub> USEPA 350.2	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3) 340 ML VIAL	<input checked="" type="checkbox"/>	485	
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	486	0428:010
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	490	0128:010
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	491	
TPH USEPA 418.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *R. C. Smith*  
RECEIVED BY: *Ulaney E. Roña*



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PB N 82102A

PROJECT USATHAMA-SAAP

SITE TYPE WELL

SAMPLING DATE 4-8-92

SITE ID PB N-82-02A

JOB NUMBER 6853-74

FILE NAME CGW

LOCATION ACTIVITY START 1200 END 1245

PROGRAM C

WEATHER cloudy, 50's

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.08 FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. -0.00 FT  
 WELL DEPTH 119 FT  MEASURED  HISTORICAL  
 WATER DEPTH 113.75 FT  
 HEIGHT OF WATER COLUMN 5.25 FT  
 RISER ELEVATION 825.14  
 GROUNDWATER ELEVATION 771.39  
 WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 PURGE H2O CONTAINED?  VOC  DNT  NO  PVC  SS  
 AMBIENT AIR 0 PPM WELL MOUTH 0 PPM  
 WELL DIAMETER 2 INCH 3/4 INCH

### PURGE DATA

PURGE VOLUME	@ 9 GAL	@ 18 GAL	@ 27 GAL	@ 36 GAL	@ 45 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	11.9	11.5	11.4	11.3	11.4	
pH, UNITS <input checked="" type="checkbox"/> pH PAPER	6.0	6.4	6.32	6.34	6.0	
SPECIFIC CONDUCTIVITY umhos/cm	644	634	632	634	631	
PUMP RATE, GPM	5					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP GRUNDEOS#  
 BAILER 2" 4" #  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 883.0  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2			107	022250
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			107	022250
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		108	022250
CL TT08	YES	4 DEG C	500 ML POLY		109	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		110	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		111	042870
BN/A UM16	NO	4 DEG C	(2) 1 L AG		114	022250
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		116	022250
DNT UW26	NO	4 DEG C	1 L AG		117	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CO, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* used pH paper

SIGNATURE: Paul C. Smith  
 RECEIVED BY: Nancy E. [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PEIN 8202E**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4.8.92**

SITE ID **FBN-82-02B**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1300 END 1315**

PROGRAM **C**

WEATHER **cloudy, 50°F**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.24** FT

PROTECTIVE CASING/WELL DIFF. **-0.01** FT

WELL DEPTH **132** FT  MEASURED  HISTORICAL

WATER DEPTH **113.44** FT

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

HEIGHT OF WATER COLUMN **18.56** FT

RISER ELEVATION **884.77**

GROUNDWATER ELEVATION **771.55**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS

WELL MATERIAL **AMBIENT AIR 0 PPM** **WELL MOUTH 0 PPM**

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 24 GAL	@ 48 GAL	@ 72 GAL	@ 6 GAL	@ 120 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	12.1	12.0	12.1	11.6	11.9	
pH, UNITS <input checked="" type="checkbox"/> PH PAPER	6.4		6.5	6.28	6.27	
SPECIFIC CONDUCTIVITY umhos/cm	637	628	633	628	627	
PUMP RATE, GPM	3.3					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDEQS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION **882.9**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			493	0703101C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		494	↓
CL TT08	YES	4 DEG C	500 ML POLY		495	05281010
SO4 TT08	YES	4 DEG C			↓	↓
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		496	↓
TDS USEPA 160.1	NO	4 DEG C			↓	↓
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		497	0428701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		500	0322101C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		502	0228101C
DNT UW26	NO	4 DEG C	1 L AG		503	↓
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *RVC SL/LT*  
 RECEIVED BY: *Nancy E. [Signature]*

ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER: PBN3202C

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SAMPLING DATE: 4.8.72

SITE ID: PBN-32-02C

JOB NUMBER: 6853-C-

FILE NAME: CGW

LOCATION ACTIVITY: START 1400 END 1445

PROGRAM: C

WEATHER: cloudy, SWF

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.25 FT.  PROTECTIVE CASING/WELL DIFF. -0.10 FT.

WELL DEPTH: 141 FT.  MEASURED  HISTORICAL

WATER DEPTH: 113.80 FT.

WELL INTEGRITY: YES  NO  N/A

PROT. CASING SECURE  CONCRETE COLLAR INTACT  WELL LOCKED  PVC WELL CAP

HEIGHT OF WATER COLUMN: 27.2 FT. 28 GAL/VOL 140 TOTAL GAL PURGED

RISER ELEVATION: 385.28

GROUNDWATER ELEVATION: 771.48

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS

AMBIENT AIR 0.0 PPM WELL MOUTH 0.0 PPM

PURGE DATA

PURGE VOLUME	@ <u>28</u> GAL	@ <u>56</u> GAL	@ <u>84</u> GAL	@ <u>112</u> GAL	@ <u>140</u> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>12.5</u>	<u>12.4</u>	<u>11.5</u>	<u>11.3</u>	<u>11.3</u>	
DM, UNITS <input checked="" type="checkbox"/> DM PAPER	<u>6.5</u>				<u>6.5</u>	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>573</u>	<u>571</u>	<u>371</u>	<u>369</u>	<u>369</u>	
PUMP RATE, GPM	<u>3.5</u>					

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID: ISCO #

SUBMERSIBLE PUMP  GROUND LOS#

BAILER  2"  4" #

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DERON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION: 822.9

NUMBER OF FILTERS USED: 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			<u>505</u>	<u>030210C</u>
NI7 TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>506</u>	
CL TT08	YES	4 DEG C	500 ML POLY		<u>507</u>	
SO4 TT08	YES	4 DEG C			<u>508</u>	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>509</u>	
TDS USEPA 160.1	NO	4 DEG C			<u>510</u>	
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		<u>511</u>	
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		<u>512</u>	
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>513</u>	<u>042870C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG		<u>514</u>	<u>078810C</u>
AS 99	NO	4 DEG C	1 L AG		<u>515</u>	
NAM UN06	NO	4 DEG C	1 L AG			<u>078810C</u>
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Paul S. Suter, Jr.  
 RECEIVED BY: Nancy E. [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN8203A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PBN-82-03A

JOB NUMBER 6853-04

SAMPLING DATE 4.9.92

LOCATION ACTIVITY START 1400 END 1500

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 50° S

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.21 FT  
 PROTECTIVE CASING/WELL DIFF. -.07 FT  
 WELL DEPTH 96.5 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 90.25 FT  
 HEIGHT OF WATER COLUMN 6.25 FT  
 RISER ELEVATION 859.94  
 GROUNDWATER ELEVATION 769.69  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 MATERIAL  PVC  SS  
 AMBIENT AIR 0.7 PPM  
 WELL MOUTH 0.7 PPM  
 WELL DIAMETER  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	@ 10 GAL	@ 20 GAL	@ 30 GAL	@ 40 GAL	@ 50 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	13.7	13.7	/	/	/	
PH, UNITS <input type="checkbox"/> pH PAPER	7.6	7.5	/	/	/	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	285	607	/	/	/	
PUMP RATE, GPM	3.4 gpm		/	/	/	

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GROUND EOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_  
 DEION FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 857.6  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			517	02241010
NIT	YES	H2SO4 TO pH<2	500 ML POLY		518	
CL	YES	4 DEG C	500 ML POLY		519	
SO4	YES	4 DEG C			↓	
ALK	NO	4 DEG C	500 ML POLY		520	
TDS	NO	4 DEG C			↓	
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		521	01277010
BN/A	NO	4 DEG C	(2) 1 L AG		524	01281010
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG		526	01281010
TPH	NO	H2SO4 TO pH<2	1 L GWM		527	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

PUT PUMP TO THE BOTTOM OF WELL, PUMPED 224 @ 15 GAL LET RECHARGE - THEN TOOK 2<sup>nd</sup> READING. LET RECHARGE AND SAMPLED @ 1800

SIGNATURE: Paul C. Smith / L.T.  
 RECEIVED BY: Nancy E. Porter

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**PBN 82 03 B**

PROJECT **USATHAMA-BAAP**

SITE TYPE

**WELL**

SITE ID **PBN-82-03B**

JOB NUMBER

**6853-0-**

SAMPLING DATE

**4.9.92**

LOCATION

ACTIVITY

START **1515** END **1630**

PROGRAM

**C**

FILE NAME

**CGW**

WEATHER

**Sunny, 50° S**

### WATER LEVEL / WELL DATA

WELL DEPTH **109 FT**

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

**2.11 FT**

PROTECTIVE CASING/WELL DIFF.

**-.03 FT**

WATER DEPTH **90.48 FT**

**24** GAL/VOL **24**

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
PVC WELL CAP  YES  NO  N/A

RISER ELEVATION

**860.16**

HEIGHT OF WATER COLUMN **18.52 FT**

**120** TOTAL GAL PURGED

GROUNDWATER ELEVATION

**769.68**

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR **0.1** PPM

WELL MOUTH **0.9** PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME

**@ 24 GAL @ 48 GAL @ 72 GAL @ 96 GAL @ 120 GAL**

TEMP, DEG C

**11.8 11.7 11.9 11.8 11.7**

PH, UNITS  PH PAPER

**7.6 7.4 7.3 7.3 7.3**

SPECIFIC CONDUCTIVITY  $\mu\text{mhos/cm}$

**625 630 617 611 611**

PUMP RATE, GPM

**3.0 gpm**

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODCR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID

ISCO #  
GRUNDFOS #  
2" 4" #

DECON FLUIDS USED

POTABLE WATER  
LIQUINOX  
STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
FLOAT ACTIVATED  
PRESSURE TRANSDUCER

GROUND ELEVATION

**857.6**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO <sub>3</sub> TO pH<2				
<input type="checkbox"/> NA SS16	YES	HNO <sub>3</sub> TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO <sub>3</sub> TO pH<2				
<input type="checkbox"/> CR SS16	YES	HNO <sub>3</sub> TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO <sub>3</sub> TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO <sub>3</sub> TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO <sub>3</sub> TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO <sub>3</sub> TO pH<2				
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO <sub>3</sub> TO pH<2			<b>529</b>	<b>0522010</b>
<input checked="" type="checkbox"/> NIT TF10	YES	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY		<b>530</b>	
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		<b>531</b>	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<b>532</b>	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	(3) 40 ML VIAL			
<input checked="" type="checkbox"/> NH <sub>3</sub> N <sub>2</sub> USEPA 350.2	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		<b>533</b>	<b>0-1227010</b>
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG		<b>536</b>	<b>0022010</b>
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG		<b>538</b>	<b>0122010</b>
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG		<b>539</b>	
<input type="checkbox"/> TPH USEPA 418.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Paul G. Smith*

RECEIVED BY: *Nancy E. B...*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER P.B.N. 2103C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID P.B.N. 132-03C

JOB NUMBER 6853-04

SAMPLING DATE 4.9.92

LOCATION ACTIVITY START: 1645 END: 1200

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 50's

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.42 FT  
 TOP OF CASING  
 PROTECTIVE CASING/WELL DIFF. - .49 FT  
 WELL DEPTH 117.5 FT.  MEASURED  HISTORICAL  
 WATER DEPTH 90.39 FT.  
 RISER ELEVATION 860.06  
 HEIGHT OF WATER COLUMN 27.11 FT. 30 GAL/VOL 30  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 TOTAL GAL PURGED 150  
 GROUNDWATER ELEVATION 767.67  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 AMBIENT AIR 0.0 PPM WELL MOUTH 0.0 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 30 GAL	@ 60 GAL	@ 90 GAL	@ 120 GAL	@ 150 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>12.1</u>	<u>12.4</u>	<u>11.6</u>	<u>11.8</u>	<u>12.3</u>	
PH, UNITS <input type="checkbox"/> OH PAPER	<u>7.6</u>	<u>7.5</u>	<u>7.3</u>	<u>7.3</u>	<u>7.3</u>	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>733</u>	<u>720</u>	<u>711</u>	<u>711</u>	<u>709</u>	
PUMP RATE, GPM	<u>3</u>					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP  GROUNDOS# 2" 4" #   
 BAILER   
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED PRESSURE TRANSDUCER  
 GROUND ELEVATION 857.6  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			<u>541</u>	<u>052310.0</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>542</u>	
CL TT08	YES	4 DEG C	500 ML POLY		<u>543</u>	
SO4 TT08	YES	4 DEG C			<u>544</u>	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>545</u>	
TDS USEPA 160.1	NO	4 DEG C			<u>546</u>	
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		<u>547</u>	
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		<u>548</u>	
VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		<u>549</u>	<u>042275.0</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG		<u>550</u>	<u>02210.0</u>
NG 99	NO	4 DEG C	1 L AG		<u>551</u>	
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Paul C. Sill / L.T.  
 RECEIVED BY: Marcy E. Ropa

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE 1 OF 1

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

**PBN 8204A**

PROJECT: **USATHAMA-BAAP**

SITE TYPE: **WELL**

SAMPLING DATE: **4.26.92**

SITE ID: **PBN-82-04A**

JOB NUMBER: **6853-0-**

FILE NAME: **CGW**

LOCATION ACTIVITY: **START 16.00 4/24/92 END**

PROGRAM: **C**

WEATHER: **Cloudy, 40°F**

**WATER LEVEL / WELL DATA**

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.24** FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. **0.00** FT

WELL DEPTH: **108.5** FT

WATER DEPTH: **105.41** FT

HEIGHT OF WATER COLUMN: **3.09** FT

WELL INTEGRITY: YES NO N/A

PROT. CASING SECURE

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

RISER ELEVATION: **874.74**

GROUNDWATER ELEVATION: **871.59**

WELL DIAMETER:  2 INCH  1 INCH  1/2 INCH **769.33**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR **0.00** PPM

WELL MOUTH **0.00** PPM

**PURGE DATA**

PURGE VOLUME: **0.5** GAL

TEMP, DEG C

pH, UNITS  pH PAPER

SPECIFIC CONDUCTIVITY  $\mu$ mos/cm

PUMP RATE, GPM

SAMPLE OBSERVATIONS

CLEAR

CLOUDY

COLORED

TURBID

ODOR

OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

PERISTALTIC PUMP

SUBMERSIBLE PUMP

BAILER

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

EQUIPMENT ID

ISCO #

GRUNDFOS#

2"  4" #

DECON FLUIDS USED

POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

GROUND ELEVATION: **873.0**

NUMBER OF FILTERS USED

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
USEPA 130.2	YES	HNO3 TO pH<2				
TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL	YES	4 DEG C	500 ML POLY			
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY			
USEPA 310.1	NO	4 DEG C				
TDS	NO	4 DEG C				
USEPA 160.1	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
USEPA 415.1	NO	H2SO4 TO pH<2	500 ML POLY			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL			
UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL			
UM16	NO	4 DEG C	(2) 1 L AG			
99	NO	4 DEG C	1 L AG			
UN06	NO	4 DEG C	1 L AG			
UN06	NO	4 DEG C	1 L AG			
UN26	NO	4 DEG C	1 L AG			
UN26	NO	4 DEG C	1 L AG			
USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

4/25/92 purged 1/2 gallon

4/26/92 - COLLECTED VOCs, DNT, + NAMS FOR RECHARGE

WELL HAS SOME DR.

SIGNATURE: *PS [Signature]*

RECEIVED BY: *[Signature]*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PIBNI8204B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PIBNI-82-04B

JOB NUMBER 6853-04

SAMPLING DATE 4/26/92

LOCATION ACTIVITY START 1000 END 1100

PROGRAM C

FILE NAME CGW

WEATHER Cloudy, 40°F

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 3.30 FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. 7.05 FT  
 MEASURED  
 HISTORICAL  
 WELL DEPTH 120 FT  
 WATER DEPTH 105.25 FT  
 HEIGHT OF WATER COLUMN 14.75 FT  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 RISER ELEVATION 874.58  
 GROUNDWATER ELEVATION 769.33  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0.0 PPM  
 WELL MOUTH 0.0 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	21 GAL	42 GAL	63 GAL	84 GAL	106 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.6	10.7	10.1	10.7	10.6	
pH, UNITS <input type="checkbox"/> pH PAPER	7.5	7.4	7.4	7.4	7.2	
SPECIFIC CONDUCTIVITY umhos/cm	591	595	592	600	592	
PUMP RATE, GPM	1.75					

EQUIPMENT DOCUMENTATION

PURGING SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDFOS#  2"  4" # \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 873.0  
 NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2				
CA	YES	HNO <sub>3</sub> TO pH<2				
NA	YES	HNO <sub>3</sub> TO pH<2				
CD	YES	HNO <sub>3</sub> TO pH<2				
CR	YES	HNO <sub>3</sub> TO pH<2				
HG	YES	HNO <sub>3</sub> TO pH<2				
PB	YES	HNO <sub>3</sub> TO pH<2				
NI	YES	HNO <sub>3</sub> TO pH<2				
BA	YES	HNO <sub>3</sub> TO pH<2				
HARD	YES	HNO <sub>3</sub> TO pH<2			553	022810C
NIT	YES	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY		554	
CL	YES	4 DEG C	500 ML POLY		555	
SO <sub>4</sub>	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		556	
TDS	NO	4 DEG C				
TOC	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	(3) 340 ML VIAL			
NH <sub>3</sub> N	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 340 ML VIAL		557	042420C
BN/A	NO	4 DEG C	(2) 1 L AC		560	022810C
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		562	022810C
DNT	NO	4 DEG C	1 L AG		563	
TPH	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, ED, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

Well not secure due to casing/well differential slow recharge detected slow pump rate (1.75 gpm)

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]



**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE 1 OF 1

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

**FBIN 82104C**

PROJECT: **USATHAMA-BAAP**

SITE TYPE

**WELL**

SITE ID: **FBIN-82-104C**

JOB NUMBER

**6853-04**

SAMPLING DATE

**4/26/12**

LOCATION ACTIVITY

START **1000** END **1130**

PROGRAM

**C**

FILE NAME

**CGW**

WEATHER

**Clear, 40-84**

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

**2.50** FT

PROTECTIVE CASING/WELL DIFF.

**1.03** FT

WELL DEPTH

**131.5** FT

MEASURED  
 HISTORICAL

WATER DEPTH

**106.15** FT

**29** GAL/VOL

WELL INTEGRITY:

YES NO N/A

RISER ELEVATION

**875.48**

HEIGHT OF WATER COLUMN

**25.35** FT

**145** TOTAL GAL PURGED

PROT. CASING SECURE

GROUNDWATER ELEVATION

**769.33**

CONCRETE COLLAR INTACT

GROUNDWATER ELEVATION

**871.34**

WELL LOCKED

PVC WELL CAP

WELL DIAMETER

2 INCH  
 4 INCH  
 6 INCH

PURGE H<sub>2</sub>O CONTAINED

WELL MATERIAL

AMBIENT AIR **0.0** PPM

WELL MOUTH **0.2** PPM

**PURGE DATA**

PURGE VOLUME

**29** GAL

**58** GAL

**97** GAL

**145** GAL

**145** GAL

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

TEMP, DEG C

**10.6**

**10.9**

**11.2**

**11.0**

**11.1**

pH, UNITS

**7.3**

**7.4**

**7.7**

**7.2**

**7.2**

SPECIFIC CONDUCTIVITY  $\mu$ mhos/cm

**604**

**500**

**500**

**589**

**580**

PUMP RATE, GPM

**3.0**

**3.0**

**3.0**

**3.0**

**3.0**

**EQUIPMENT DOCUMENTATION**

PURGING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID

ISCO #  
GRUNDEFS#  
2" 4" #

DECON FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

**873.0**

NUMBER OF FILTERS USED

**1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2			<b>565</b>	<b>10528101</b>
<input type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<b>566</b>	
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		<b>567</b>	
<input type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<b>566</b>	
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL		<b>569</b>	<b>570</b>
<input type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG		<b>572</b>	<b>573</b>
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input type="checkbox"/> HAM UN06	NO	4 DEG C	1 L AG		<b>574</b>	
<input type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG		<b>575</b>	
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- well not secure due to casing/well differential  
- slow recharge dictated slow pump rate (1gpm)

SIGNATURE: *[Signature]*  
RECEIVED BY: *[Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PEN 82105A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID PIBN-82-05A

JOB NUMBER 6853-04

SAMPLING DATE 4-13-92

LOCATION ACTIVITY START 0800 END 1030

PROGRAM C

FILE NAME CGW

WEATHER cloudy, 30's

### WATER LEVEL / WELL DATA

TOP OF WELL MEASURED  
 TOP OF CASING HISTORICAL  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.51 FT  
 PROTECTIVE CASING/WELL DIFF. - .30 FT  
 WELL DEPTH 112 FT  
 WATER DEPTH 108.74 FT  
 RISER ELEVATION 878.50  
 HEIGHT OF WATER COLUMN 3.26 FT  
 5 GAL/VOL  
 25 TOTAL GAL PURGED  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 GROUNDWATER ELEVATION 769.76  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0.4 PPM  
 WELL MOUTH <sup>DRINK</sup> 0.4 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 5 GAL	@ 10 GAL	@ 5 GAL	@ 20 GAL	@ 25 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.3	9.3	9.1	9.6	9.7	
pH, UNITS <input checked="" type="checkbox"/> pH PAPER	6.0	6.0	6.0	6.0	6.0	
SPECIFIC CONDUCTIVITY umhos/cm	707	715	716	701	717	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING  PERISTALTIC PUMP ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP GRUNDFOS# \_\_\_\_\_  
 BAILER 2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 DEION FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 875.8  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			577	0528701C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		578	
CL TT08	YES	4 DEG C	500 ML POLY		579	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		580	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3) 40 ML VIAL		581	0428701C
BN/A JM16	NO	4 DEG C	(2) 1 L AG		584	0228701C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG		586	0228701C
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		587	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)

SIGNATURE: Rebecca L.T.  
 RECEIVED BY: Nancy E. Rota

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER PIEN 82-05B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.13.92

SITE ID PIEN-82-05B

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0830 END 1000

PROGRAM C

WEATHER cloudy, 30's

### WATER LEVEL / WELL DATA

TOP OF WELL TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) 2.69 FT PROTECTIVE CASING/WELL DIFF. -.40 FT

WELL DEPTH 124 FT  MEASURED  HISTORICAL

WATER DEPTH 107.95 FT

HEIGHT OF WATER COLUMN 16.05 FT

23 GAL/VOL 22 L

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION 877.68  
 GROUNDWATER ELEVATION 769.73

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  YES

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.0 PPM WELL MOUTH 0.0 PPM

WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	23 GAL	46 GAL	69 GAL	92 GAL	115 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLCRED <input type="checkbox"/> TURBID <input type="checkbox"/> OOCR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.9	10.0	10.3	10.5	10.6	
PH, UNITS <input checked="" type="checkbox"/> PH PAPER	6.0	6.0	6.0	6.0	6.0	
SPECIFIC CONDUCTIVITY umhos/cm	744	792	792	778	800	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_ ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDEOS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DEFON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION 875.3

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			587	052810.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		590	
CL TT08	YES	4 DEG C	500 ML POLY		591	
SO4 TT08	YES	4 DEG C			592	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC um.33	NO	HCL, 4 DEG C	(3) 40 ML VIAL		593	042320.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		596	022810.C
NG 99	NO	4 DEG C	1 L AG		597	
NAM UN06	NO	4 DEG C	1 L AG		598	022810.C
DNT UW26	NO	4 DEG C	1 L AG		599	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

CASING CAP BROKEN

SIGNATURE: R. C. S. H. / L. T.

RECEIVED BY: Nancy E. Post

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER PBN 8205C

PROJECT: USATHAMA-BAAP  
 SITE ID: PBN-82-05C  
 LOCATION ACTIVITY: START 1045 END 1200

SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C  
 SAMPLING DATE: 4.13.92  
 FILE NAME: CGW  
 WEATHER: \_\_\_\_\_

WATER LEVEL / WELL DATA

WELL DEPTH: 133 FT.  MEASURED  HISTORICAL  
 WATER DEPTH: 108.38 FT.  
 HEIGHT OF WATER COLUMN: 24.62 FT.  
 PROTECTIVE CASING STICK-UP (FROM GROUND): 2.11 FT.  
 PROTECTIVE CASING/WELL DIFF.: 1.02 FT.  
 RISER ELEVATION: 878.18  
 GROUNDWATER ELEVATION: 769.80  
 WELL INTEGRITY: YES  NO  N/A   
 PROT. CASING SECURE   
 CONCRETE COLLAR INTACT   
 WELL LOCKED   
 PVC WELL CAP   
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 AMBIENT AIR: 0.7 PPM  
 WELL MOUTH: 6.7 PPM  
 WELL DIAMETER:  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	@ 25 GAL	@ 50 GAL	@ 75 GAL	@ 100 GAL	@ 125 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.3</u>	<u>10.2</u>	<u>10.0</u>	<u>10.1</u>	<u>10.4</u>	
PH, UNITS <input checked="" type="checkbox"/> PH PAPER	<u>6.2</u>	<u>6.2</u>	<u>6</u>	<u>6</u>	<u>6</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>706</u>	<u>702</u>	<u>702</u>	<u>702</u>	<u>690</u>	
PUMP RATE, GPM	<u>3.5</u>					

EQUIPMENT DOCUMENTATION

PURGING SAMPLING:  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_  
 EQUIPMENT ID: ISCO # \_\_\_\_\_ GRUNDFOS # \_\_\_\_\_ 2"  4" # \_\_\_\_\_  
 DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION: 875.8  
 NUMBER OF FILTERS USED: 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	SS16				
NA	YES	SS16				
CD	YES	SS16				
CR	YES	SS16				
HG	YES	SB03				
PB	YES	SD24				
NI	YES	SS16				
BA	YES	SS16				
HARD	YES	USEPA 130.2				
NIT	YES	TF10	H2SO4 TO pH<2	500 ML POLY	<u>601</u>	<u>052810C</u>
CL	YES	TT08	4 DEG C	500 ML POLY	<u>602</u>	
SO4	YES	TT08	4 DEG C		<u>603</u>	
ALK	NO	USEPA 310.1	4 DEG C	500 ML POLY	<u>604</u>	
TDS	NO	USEPA 160.1	4 DEG C			
TCC	NO	USEPA 415.1	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	NO	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY		
VOC	NO	UM 33	HCL, 4 DEG C	(3)40 ML VIAL	<u>605</u>	<u>042810C</u>
BN/A	NO	UM16	4 DEG C	(2) 1 L AG	<u>606</u>	<u>022810C</u>
NG	NO	99	4 DEG C	1 L AG	<u>607</u>	
NAM	NO	UN06	4 DEG C	1 L AG		
DNT	NO	UW26	4 DEG C	1 L AG	<u>608</u>	<u>022810C</u>
TPH	NO	USEPA 418.1	H2SO4 TO pH<2	1 L GWM	<u>609</u>	

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MM, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: K. C. Smith/L.T.  
 RECEIVED BY: Nancy E. Post

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER: L0M7101

PROJECT: USATHAMA-SAAP

SITE TYPE: WELL

SAMPLING DATE: 4/22/92

SITE ID: L0M-71-01

JOB NUMBER: 6853-04

FILE NAME: CGW

LOCATION ACTIVITY: START 0800 END 0900

PROGRAM: C

WEATHER: cloudy 40s

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE  
 TOP OF CASING CASING STICK-UP (FROM GROUND) 2.01 FT PROTECTIVE CASING/WELL DIFF. .22 FT

WELL DEPTH 152 FT  MEASURED  HISTORICAL  
 WATER DEPTH 144.7 FT

HEIGHT OF WATER COLUMN 7.3 FT

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  NO WELL MATERIAL  PVC  SS  
 AMBIENT AIR 4.2 PPM WELL MOUTH 1.1 PPM  
 WELLS DIAMETER  2 INCH  4 INCH  INCH

RISER ELEVATION 917.51  
 GROUNDWATER ELEVATION 772.81

### PURGE DATA

	<u>08:09</u>	<u>08:13</u>	<u>08:17</u>	<u>08:21</u>	<u>08:25</u>	SAMPLE OBSERVATIONS
PURGE VOLUME	@ <u>12</u> GAL	@ <u>24</u> GAL	@ <u>36</u> GAL	@ <u>48</u> GAL	@ <u>60</u> GAL	
TEMP, DEG C	<u>10.6</u>	<u>10.6</u>	<u>10.9</u>	<u>9.9</u>	<u>10.2</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.07</u>	<u>7.32</u>	<u>7.42</u>	<u>7.45</u>	<u>7.52</u>	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>630</u>	<u>641</u>	<u>647</u>	<u>655</u>	<u>635</u>	
PUMP RATE, GPM	<u>3</u>					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS# ARB-02  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION: 915.5

NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI7 TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SG4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VCC UM33	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
BA/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UNC6	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER L0M7102

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID L0M-191-102

JOB NUMBER 6853-04

SAMPLING DATE 4/22/92

LOCATION ACTIVITY START 0930 END 1100

PROGRAM C

FILE NAME CGW

WEATHER OVERCAST 40's

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 1.9 FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. 11 FT  
 MEASURED  
 HISTORICAL  
 WELL DEPTH 149 FT  
 WATER DEPTH 138.55 FT  
 HEIGHT OF WATER COLUMN 10.5 FT  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 RISER ELEVATION 912.30  
 GROUNDWATER ELEVATION 773.75  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 1.1 PPM  
 WELL MOUTH 1.1 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

	11 30	11 37	11 44	11 51	11 58	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
PURGE VOLUME	@ 17 GAL	@ 34 GAL	@ 51 GAL	@ 68 GAL	@ 85 GAL	
TEMP, DEG C	10.5	10.7	10.7	10.7	10.7	
PH, UNITS <input type="checkbox"/> pH PAPER	7.57	7.69	7.65	7.60	7.63	
SPECIFIC CONDUCTIVITY umhos/cm	660	650	657	657	652	
PUMP RATE, GPM	2.5					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS# ABB#2  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 910.3  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			73	032601C
NA SS16	YES	HNO3 TO pH<2				
CO SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			73	032601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		74	022510C
CL TT08	YES	4 DEG C	500 ML POLY		75	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		76	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC um:33	NO	HCL, 4 DEG C	(3) 40 ML VIAL		77	022510C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		80	022510C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG		82	022510C
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		83	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/WA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/WA:ICP)

SIGNATURE: Laura E. Cates 16P  
 RECEIVED BY: Paul R. [Signature]

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PAGE \_\_\_\_\_ OF \_\_\_\_\_

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

L 0 M 8 9 0 1

PROJECT USATHAMA-5AAP

SITE TYPE WELL

SAMPLING DATE

4 10 92

SITE ID L 0 M - 8 9 - 0 1

JOB NUMBER 6853-04

FILE NAME

CGW

LOCATION

PROGRAM

C

WEATHER

RAIN, 40%

ACTIVITY START 1300 END 1430

WATER LEVEL / WELL DATA

WELL DEPTH 160.5 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.54 FT

PROTECTIVE CASING/WELL DIFF.

-0.33 FT

WATER DEPTH 146.0 FT

26 GAL/VOL

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
PVC WELL CAP

YES NO N/A

RISER ELEVATION

917.85

GROUNDWATER ELEVATION

771.56

HEIGHT OF WATER COLUMN 14.5 FT

130 TOTAL GAL PURGED

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR - PPM

WELL MOUTH - PPM

WELL DIAMETER  2 INCH  
 1 INCH  
 1/2 INCH

PURGE DATA

PURGE VOLUME

@ 26 GAL

@ 52 GAL

@ 78 GAL

@ 104 GAL

@ 130 GAL

TEMP, DEG C

12.1

11.3

11.2

11.2

11.2

PH, UNITS  PH PAPER

6.1

6.5

6.4

6.3

6.3

SPECIFIC CONDUCTIVITY  $\mu$ mhos/cm

650

650

650

650

650

PUMP RATE, GPM

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODCR  
 OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDEOS# 3  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

915.9

NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NAM LN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *ReCS HLT*

RECEIVED BY: *Nancy E Port*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER LON3902A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID LON-89-02A

JOB NUMBER 6853-04

SAMPLING DATE 4/22/92

LOCATION ACTIVITY START 0800 END 0900

PROGRAM C

FILE NAME CGW

WEATHER Clouds, 45°F

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 1.90 FT  
 PROTECTIVE CASING/WELL DIFF. -0.13 FT  
 WELL DEPTH 161 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 149.2 FT  
 HEIGHT OF WATER COLUMN 11.79 FT  
 RISER ELEVATION 920.59  
 GROUNDWATER ELEVATION 771.38  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0.1 PPM  
 WELL MOUTH 0.1 PPM  
 WELL DIAMETER  2 INCH  1 INCH

### PURGE DATA

PURGE VOLUME	<u>19</u> GAL	<u>38</u> GAL	<u>57</u> GAL	<u>76</u> GAL	<u>95</u> GAL	SAMPLE OBSERVATIONS: <input checked="" type="checkbox"/> CLEAR <u>see notes</u> <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11.1</u>	<u>11.1</u>	<u>10.5</u>	<u>11.1</u>	<u>11.4</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.35</u>	<u>7.37</u>	<u>7.32</u>	<u>7.15</u>	<u>7.17</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>316</u>	<u>712</u>	<u>768</u>	<u>712</u>	<u>715</u>	
PUMP RATE, GPM	<u>3.0</u>					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP  GRUNDFOS# ✓  
 BAILER  2"  4" #  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 918.5  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			<u>13</u>	<u>10326101C</u>
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			<u>13</u>	<u>10326101C</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>14</u>	<u>10528101C</u>
CL TT08	YES	4 DEG C	500 ML POLY		<u>15</u>	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>16</u>	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>17</u>	<u>10425701C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG		<u>20</u>	<u>10228101C</u>
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		<u>22</u>	<u>10228101C</u>
DNT UW26	NO	4 DEG C	1 L AG		<u>23</u>	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- cloudy for 5 minutes, clear afterwards  
 - stone collar intact

SIGNATURE: Lyle Tracy / AA  
 RECEIVED BY: Rod K. [unclear]



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PAGE 1 OF 1

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER LON8702B

PROJECT USATHAMA-BAAP  
 SITE ID LON-87-02B  
 LOCATION ACTIVITY START 0900 END 1100

SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C  
 SAMPLING DATE 4/27/02  
 FILE NAME CGW  
 WEATHER Clear 55F

WATER LEVEL / WELL DATA

WELL DEPTH 200 FT  MEASURED  HISTORICAL  
 WATER DEPTH 149.76 FT  
 HEIGHT OF WATER COLUMN 50.24 FT  
 TOP OF WELL  TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.30 FT  
 PROTECTIVE CASING/WELL DIFF. -0.25 FT  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 RISER ELEVATION 921.13  
 GROUNDWATER ELEVATION 771.37  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  CNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR NR PPM WELL MOUTH NR PPM  
 WELL DIAMETER  2 INCH  1 INCH

PURGE DATA

PURGE VOLUME @ 49 GAL @ 98 GAL @ 147 GAL @ 196 GAL @ 245 GAL  
 TEMP, DEG C 11.2 11.4 10.7 10.6 11.2  
 PH, UNITS  PH PAPER 7.3 7.1 7.3 7.3 7.2  
 SPECIFIC CONDUCTIVITY  $\mu$ MOS/CM 704 680 681 672 682  
 PUMP RATE, GPM 2.0  
 SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  COOR  OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  ISCO #  
 SUBMERSIBLE PUMP  GRUNDEPS#  
 BAILER  2"  4" #  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER  
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION 918.9  
 NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			25	
<input checked="" type="checkbox"/> CA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CR	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2			25	0026500
<input checked="" type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY		26	0026500
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY		27	
<input checked="" type="checkbox"/> SO4	YES	4 DEG C			28	
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> TDS	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		29	30
<input checked="" type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG		32	34
<input checked="" type="checkbox"/> NG	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> AM	NO	4 DEG C	1 L AG		34	
<input checked="" type="checkbox"/> CNT	NO	4 DEG C	1 L AG		35	
<input checked="" type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GLM			

NOTES PP METALS (AG, AS, BE, CO, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SBC3, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CO, CA, CR, CO, CU, FE, PB, MG, MM, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SBC3, 99 (TL:GFAA, K/NA:ICP)  
 -NR= No reading - TE inoperable  
 -No concrete collar - stone star - sink hole @ casing collar contact.  
 SIGNATURE: John Tracy  
 RECEIVED BY: Rob R. [unclear]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER LON8903A

PROJECT USATHAMA-SAAP

SITE TYPE WELL

SAMPLING DATE 4-22-92

SITE ID LON-89-103A

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1000 END 1100

PROGRAM C

WEATHER RAIN-10

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.75 FT  
 PROTECTIVE CASING/WELL DIFF. 0.18 FT  
 WELL DEPTH 161 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 150.99 FT  
 RISER ELEVATION 922.14  
 HEIGHT OF WATER COLUMN 10.01 FT  
17 GAL/VOL  
 YES  
 NO  
 N/A  
 WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP  
 GROUNDWATER ELEVATION 771.15  
 PURGE H<sub>2</sub>O CONTAINED?  
 VOC  
 DNT  
 NO  
 WELLS MATERIAL  
 PVC  
 SS  
 AMBIENT AIR NR PPM  
 WELL MOUTH NR PPM  
 WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	<u>17</u> GAL	<u>31</u> GAL	<u>51</u> GAL	<u>68</u> GAL	<u>85</u> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.5</u>	<u>10.8</u>	<u>10.2</u>	<u>10.4</u>	<u>11.0</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.3</u>	<u>7.2</u>	<u>7.2</u>	<u>7.2</u>	<u>7.2</u>	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>769</u>	<u>648</u>	<u>666</u>	<u>671</u>	<u>670</u>	
PUMP RATE, GPM	<u>4.5</u>					

### EQUIPMENT DOCUMENTATION

PIGGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP  GRUNDFOS#   
 BAILER  2"  4" #  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 919.2  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2				
CA	YES	HNO <sub>3</sub> TO pH<2			37	032601C
NA	YES	HNO <sub>3</sub> TO pH<2				
CD	YES	HNO <sub>3</sub> TO pH<2				
CR	YES	HNO <sub>3</sub> TO pH<2				
HG	YES	HNO <sub>3</sub> TO pH<2				
PB	YES	HNO <sub>3</sub> TO pH<2				
NI	YES	HNO <sub>3</sub> TO pH<2				
BA	YES	HNO <sub>3</sub> TO pH<2				
HARD	YES	HNO <sub>3</sub> TO pH<2			37	032601C
NIT	YES	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY		38	032601C
CL	YES	4 DEG C	500 ML POLY		39	
SO <sub>4</sub>	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		40	
TDS	NO	4 DEG C				
TOC	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	(3) 40 ML VIAL			
MH3N2	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		41	042601C
BN/A	NO	4 DEG C	(2) 1 L AG		44	022810C
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG		46	022810C
DNT	NO	4 DEG C	1 L AG		47	
TPH	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

NR = No reading - TE impossible  
 No concrete collar - stone collar

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER LON8903B

PROJECT USATHAMA-BAAP  
 SITE ID LON-89-03B  
 LOCATION ACTIVITY START 1400 END 1500

SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C

SAMPLING DATE 4/22/92  
 FILE NAME CGW  
 WEATHER OVERCAST 40 S

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE  
 TOP OF CASING CASING STICK-UP (FROM GROUND) 2.46 FT  
 PROTECTIVE CASING/WELL DIFF. .21 FT

WELL DEPTH 200 FT  
 MEASURED  
 HISTORICAL

WATER DEPTH 150.68 FT  
35 GAL/VOL  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

HEIGHT OF WATER COLUMN 49.32 FT  
175 TOTAL GAL PURGED

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 00 PPM  
 WELL MOUTH 00 PPM

RISER ELEVATION 921.79  
 GROUNDWATER ELEVATION 771.01  
 WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

### PURGE DATA

PURGE VOLUME	@ 35 GAL	@ 70 GAL	@ 105 GAL	@ 140 GAL	@ 175 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODCR <input type="checkbox"/> OTHER (SEE NOTES)	
TEMP, DEG C	<u>11.4</u>	<u>11.2</u>	<u>11.3</u>	<u>11.7</u>	<u>11.4</u>		
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.60</u>	<u>7.54</u>	<u>7.56</u>	<u>7.53</u>	<u>7.55</u>		
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>814</u>	<u>796</u>	<u>782</u>	<u>792</u>	<u>814</u>		
PUMP RATE, GPM	<u>3</u>						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
 BAILER  GRUNDFOS # A2242  
 PVC/SILICON TUBING  2"  4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 919.5

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	49	03200014
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI1	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	49	03200014
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	50	03200014
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	51	
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	52	
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
TCC	NO	H2SO4 TO pH<2 (3)40 ML VIAL		<input checked="" type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2 500 ML POLY		<input checked="" type="checkbox"/>		
VOC	NO	HCL, 4 DEG C (3)40 ML VIAL		<input checked="" type="checkbox"/>	53	03200014
BN/A	NO	4 DEG C (2) 1 L AG		<input checked="" type="checkbox"/>	54	03200014
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	55	03200014
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	56	03200014
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	57	03200014
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	58	03200014
	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	59	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Juan E. Cate  
 RECEIVED BY: \_\_\_\_\_

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SPN 91102D**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4/29/92**

SITE ID **SPN-91-02D**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1200 END 1430**

PROGRAM **C**

WEATHER **HAZY 60°**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE  
 TOP OF CASING CASING STICK-UP (FROM GROUND) **2.70 FT** PROTECTIVE CASING/WELL DIFF. **-1.10 FT**  
 WELL DEPTH **185 FT**  MEASURED  HISTORICAL  
 WATER DEPTH **62 FT** WELL INTEGRITY: YES NO N/A  
 RISER ELEVATION **824.23**  
 HEIGHT OF WATER COLUMN **123 FT** **80.5** GAL/VOL **(80.5)** PROT. CASING SECURE   
 GROUNDWATER ELEVATION **762.03** CONCRETE COLLAR INTACT   
**504** TOTAL GAL PURGED **(504)** WELL LOCKED   
 PVC WELL CAP   
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO WELL MATERIAL  PVC  SS AMBIENT AIR **0.0** PPM WELL MOUTH **0.0** PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	12:39	1:00	1:21	1:42	2:01	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
	@ 40.5 GAL	@ 161 GAL	@ 241.5 GAL	@ 322 GAL	@ 504 GAL	
TEMP, DEG C	13.1	12.9	12.8	12.6	12.8	
pH, UNITS <input type="checkbox"/> pH PAPER	7.78	7.82	7.82	7.96	7.82	
SPECIFIC CONDUCTIVITY umhos/cm	527	1200	582	583	587	

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING  PERISTALTIC PUMP EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP GRUNDFOS# **A602**  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION **821.6**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1276	022600
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1276	022600
NI1	YES	H2SO4 TO pH<2	500 ML POLY		1277	022600
CL	YES	4 DEG C	500 ML POLY		1278	
SO4	YES	4 DEG C	500 ML POLY		1279	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		1280	042520
BN/A	NO	4 DEG C	(2) 1 L AG		1283	022600
NG	NO	4 DEG C	1 L AG		1285	
NAM	NO	4 DEG C	1 L AG		1286	
DNT	NO	4 DEG C	1 L AG		1287	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Gary R. Peltier*  
 RECEIVED BY: *Paul R. Peltier*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SIPN91103D

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 11 29 92

SITE ID SIPN-911-03D

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1400 END 1600

PROGRAM C

WEATHER sunny

WATER LEVEL / WELL DATA

WELL DEPTH 203 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.14 FT

PROTECTIVE CASING/WELL DIFF. -1.13 FT

WATER DEPTH 57.07 FT

RISER ELEVATION 819.36

HEIGHT OF WATER COLUMN FT

GAL/VOL 116.5

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

GROUNDWATER ELEVATION 162.29

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.1 PPM

WELL MOUTH 1.3 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

PURGE DATA 1:30

PURGE VOLUME

1:45 @ 116 GAL	2:00 @ 233 GAL	2:15 @ 349 GAL	2:30 @ 468 GAL	2:45 @ 582 GAL
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SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODCR
- OTHER (SEE NOTES)

TEMP, DEG C

pH, UNITS  pH PAPER

SPECIFIC CONDUCTIVITY umhos/cm

PUMP RATE, GPM

11.9	11.8	11.4	11.3	11.7
7.8	7.3	7.4	7.4	7.4
585	575	581	579	578
8 gpm				

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

816.7

NUMBER OF FILTERS USED

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1288	032660C
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1288	032660C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1289	052810C
CL	YES	4 DEG C	500 ML POLY		1290	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		1291	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		1292	052870C
BN/A	NO	4 DEG C	(2) 1 L AG		1295	022810C
NG	NO	4 DEG C	1 L AG		1297	
NAM	NO	4 DEG C	1 L AG		1298	
DNT	NO	4 DEG C	1 L AG		1299	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Chick Williams*

RECEIVED BY: *Paul H. [unclear]*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SPN9104D

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4/29/92

SITE ID SPN-91-04D

JOB NUMBER 6855-04

FILE NAME CGW

LOCATION ACTIVITY START 1130 END 1400

PROGRAM C

WEATHER SUNNY 60's

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE TOP OF CASING CASING STICK-UP (FROM GROUND) 1.81 FT

PROTECTIVE CASING/WELL DIFF. -0.34 FT

WELL DEPTH 204 FT

MEASURED HISTORICAL

WATER DEPTH 40.44 FT

131 GAL/VOL 130.5

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION 802.52

HEIGHT OF WATER COLUMN 163.56 FT

655 TOTAL GAL PURGED 653

GROUNDWATER ELEVATION 762.14

PURGE H2O CONTAINED? VOC DNT NO PVC SS

WELL MATERIAL AMBIENT AIR 0.4 PPM WELL MOUTH 0.7 PPM

WELL DIAMETER 2 INCH 4 INCH

PURGE DATA

PURGE VOLUME	1135	1149	1204	1218	1233
	@ 131 GAL	@ 262 GAL	@ 398 GAL	@ 524 GAL	@ 655 GAL
TEMP, DEG C	12.0	11.2	7.4	11.5	11.3
PH, UNITS	7.7	7.4	7.3	7.3	7.3
SPECIFIC CONDUCTIVITY umhos/cm	478	466	464	468	466
PUMP RATE, GPM (2 Pumps)	9 gpm				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING SAMPLING PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER

DECON FLUIDS USED POTABLE WATER LIQUINOX STEAM CLEANING

WATER LEVEL EQUIP. USED ELECTRIC COND. PROBE FLOAT ACTIVATED PRESSURE TRANSDUCER

GROUND ELEVATION 800.8

NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	[Handwritten checkmarks]	1300	1032600
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1300	1032600
CL TT08	YES	4 DEG C	500 ML POLY		1301	1032600
SO4 TT08	YES	4 DEG C	500 ML POLY		1302	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1303	
TDS USEPA 160.1	NO	4 DEG C				
TGC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC Um-33	NO	HCL, 4 DEG C	(3) 40 ML VIAL	1304	1305	
BN/A UM16	NO	4 DEG C	(2) 1 L AG	1306	1306	
NG 99	NO	4 DEG C	1 L AG	1307	1308	
NAM UN06	NO	4 DEG C	1 L AG	1309		
DNT UW26	NO	4 DEG C	1 L AG	1310		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM	1311		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: [Handwritten Signature]  
 RECEIVED BY: [Handwritten Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER SPN8901C

PROJECT USATHAMA-BAAP  
 SITE ID SPN-89-01C  
 LOCATION ACTIVITY START 0800 END 1000

SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C

SAMPLING DATE 4/23/92  
 FILE NAME CGW  
 WEATHER OVERCAST  
T.S.

### WATER LEVEL / WELL DATA

WELL DEPTH 123 FT.  TOP OF WELL  TOP OF CASING  
 WATER DEPTH 680 FT.  MEASURED  HISTORICAL  
 HEIGHT OF WATER COLUMN 55 FT. 47 GAL/VOL (47) TOTAL GAL PURGED (236)  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 247 FT. PROTECTIVE CASING/WELL DIFF. .28 FT.  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 00 PPM WELL MOUTH 0.1 PPM  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 RISER ELEVATION 830.04  
 GROUNDWATER ELEVATION 762.04

### PURGE DATA

PURGE VOLUME	8:04	8:16	8:28	8:40	8:52	SAMPLE OBSERVATIONS
	@ <u>47</u> GAL	@ <u>94</u> GAL	@ <u>141</u> GAL	@ <u>188</u> GAL	@ <u>135</u> GAL	<input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11.7</u>	<u>10.9</u>	<u>10.6</u>	<u>10.7</u>	<u>10.7</u>	
PH, UNITS <input type="checkbox"/> PH PAPER	<u>7.25</u>	<u>7.52</u>	<u>7.57</u>	<u>7.52</u>	<u>7.60</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>621</u>	<u>613</u>	<u>615</u>	<u>622</u>	<u>621</u>	
PUMP RATE, GPM	<u>4</u>					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO # GRUNDEOS# ABB#2  
 SUBMERSIBLE PUMP   2"  4" #  
 BAILER   
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED PRESSURE TRANSDUCER  
 GROUND ELEVATION 827.8  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			<u>1156</u>	<u>032660C</u>
<input checked="" type="checkbox"/> CA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CR	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2			<u>1156</u>	<u>032660C</u>
<input checked="" type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY		<u>1157</u>	<u>032660C</u>
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY		<u>1158</u>	
<input checked="" type="checkbox"/> SO4	YES	4 DEG C				
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY		<u>1159</u>	
<input checked="" type="checkbox"/> TDS	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VCC	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>1160</u> <u>1161</u> <u>1162</u>	<u>032660C</u>
<input checked="" type="checkbox"/> BA/A	NO	4 DEG C	(2) 1 L AG		<u>1163</u> <u>1164</u>	<u>032660C</u>
<input checked="" type="checkbox"/> NG	NO	4 DEG C	1 L AG		<u>1165</u>	
<input checked="" type="checkbox"/> NAM	NO	4 DEG C	1 L AG		<u>1166</u>	
<input checked="" type="checkbox"/> DNT	NO	4 DEG C	1 L AG		<u>1167</u>	
<input checked="" type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, NG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
 SIGNATURE: Laura E. Carter 1/6/92  
 RECEIVED BY: John R. [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SPN 89-02A**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4/29/92**

SITE ID **SPN-89-02A**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1200 END 1300**

PROGRAM **C**

WEATHER **HAZY GC**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) \_\_\_\_\_ FT  
 PROTECTIVE CASING/WELL DIFF. \_\_\_\_\_ FT

WELL DEPTH **74** FT  MEASURED  HISTORICAL

WATER DEPTH **67.65** FT

HEIGHT OF WATER COLUMN **124** FT

RISER ELEVATION **823.67**  
 GROUNDWATER ELEVATION **762.02**

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.0** PPM  
 WELL MOUTH **0.0** PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

	12:23	12:28	12:34	12:39	12:45	12:50	SAMPLE OBSERVATIONS
PURGE VOLUME	@ 21 GAL	@ 42 GAL	@ 63 GAL	@ 84 GAL	@ 106 GAL		<input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	12.6	12.5	12.5	12.1	12.3		
pH, UNITS <input type="checkbox"/> pH PAPER	7.44	7.37	7.38	7.30	7.28		
SPECIFIC CONDUCTIVITY umhos/cm	942	937	947	932	961		
PUMP RATE, GPM							

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
 BAILER  GRUNDFOS# **HA200-1**  
 PVC/SILICON TUBING  2"  4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER  \_\_\_\_\_  
 OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION **820.8**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		1168	1030000
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1165	0326000
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1169	0525100
CL	YES	4 DEG C	500 ML POLY		1170	
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY		1171	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		1172	0423700
BN/A	NO	4 DEG C	(2) 1 L AG		1175	1020000
NG	NO	4 DEG C	1 L AG		1177	
NAM	NO	4 DEG C	1 L AG		1178	
DNT	NO	4 DEG C	1 L AG		1179	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Lynn S. Carter / G.P.*  
 RECEIVED BY: *Paul E. Carter*



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SPN8902B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4.28.92**

SITE ID **SPN-89-02B**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY START **0845** END **1030**

PROGRAM **C**

WEATHER **WINDY 50%**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE  
 TOP OF CASING CASING STICK-UP (FROM GROUND) **2.72 FT** PROTECTIVE CASING/WELL DIFF. **-1.17 FT**  
 WELL DEPTH **102 FT**  MEASURED  HISTORICAL  
 WATER DEPTH **61.49 FT** RISER ELEVATION **823.53**  
 HEIGHT OF WATER COLUMN **40.51 FT** WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELLS LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  YES  
 MATERIAL  PVC  SS  
 AMBIENT AIR **0.2 PPM** WELL MOUTH **0.4 PPM**  
 WELL DIAMETER  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	CP-34	CP-3	CP-12	CP-21	CP-70	SAMPLE OBSERVATIONS
	@ 41 GAL	@ 82 GAL	@ 123 GAL	@ 164 GAL	@ 205 GAL	<input checked="" type="checkbox"/> CLEAR
TEMP, DEG C	10.5	10.4	10.5	10.5	10.4	<input type="checkbox"/> CLOUDY
PH, UNITS <input type="checkbox"/> pH PAPER	7.6	7.5	7.5	7.5	7.6	<input type="checkbox"/> COLORED
SPECIFIC CONDUCTIVITY umhos/cm	567	563	569	568	568	<input type="checkbox"/> TURBID
PUMP RATE, GPM	4.4 gpm					<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
 BAILER  GRUNDFOSS#  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER   
 LIQUINOX   
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE   
 FLOAT ACTIVATED   
 PRESSURE TRANSDUCER  
 GROUND ELEVATION **820.3**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1180	0320600
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1180	0320600
NI7 TF10	YES	H2SO4 TO pH<2	500 ML POLY		1181	0320600
CL TT08	YES	4 DEG C	500 ML POLY		1182	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1183	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC UM33	NO	HCL, 4 DEG C	(3) 40 ML VIAL		1184	1185
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1187	1186
NG 99	NO	4 DEG C	1 L AG		1189	
NAM UN06	NO	4 DEG C	1 L AG		1190	
DNT UW26	NO	4 DEG C	1 L AG		1191	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *A. K. Williams*  
 RECEIVED BY: *Paul R. Blunt*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SPN 89 02 C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4-28-92**

SITE ID **SPN-89-02C**

JOB NUMBER **6855-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0830 END 1000**

PROGRAM **C**

WEATHER **SUNNY 50%**

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE TOP OF CASING CASING STICK-UP (FROM GROUND) **2.42 FT**  PROTECTIVE CASING/WELL DIFF. **-0.125 FT**

WELL DEPTH **131.5 FT**  MEASURED  HISTORICAL

WATER DEPTH **60.61 FT**  RISER ELEVATION **822.60**

HEIGHT OF WATER COLUMN: **70.89 FT** **60** GAL/VOL **(59.5)** WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

**300** TOTAL GAL PURGED **(298)** CONCRETE COLLAR INTACT  YES  NO  N/A

**761.99** GROUNDWATER ELEVATION

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS **AMBIENT AIR 0.2 PPM** **WELL MOUTH 0.6 PPM** WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

	0347	0900	0914	0927	0941	SAMPLE OBSERVATIONS
PURGE VOLUME	@ 60 GAL	@ 120 GAL	@ 180 GAL	@ 240 GAL	@ 300 GAL	<input type="checkbox"/> CLEAR
TEMP, DEG C	10.7	10.5	10.5	10.4	10.5	<input type="checkbox"/> CLOUDY
PH, UNITS <input type="checkbox"/> PH PAPER	7.6	7.5	7.6	7.6	7.4	<input type="checkbox"/> COLORED
SPECIFIC CONDUCTIVITY umhos/cm	921	370	569	573	569	<input type="checkbox"/> TURBID
PUMP RATE, GPM	4.6 gpm					<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID  DECON FLUIDS USED  WATER LEVEL EQUIP. USED  GROUND ELEVATION **820.0**

SAMPLING  SUBMERSIBLE PUMP ISCO #  POTABLE WATER

BAILER GRUNDFOS#  LIQUINOX

PVC/SILICON TUBING  2"  4" #  STEAM CLEANING

IN-LINE/DISPOSABLE FILTER  PRESSURE TRANSDUCER

OTHER \_\_\_\_\_ NUMBER OF FILTERS USED **1**

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	1192	0524601C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1192	0524601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1193	0524601C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1194	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1195	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO			<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
VOC um.33	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
BN/A UM16	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	1196 / 1197 / 1198	0524601C
NG 99	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1199 / 1200	0524601C
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1201	
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1202	
TPH USEPA 418.1	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1203	
		H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* Resampled on 4-29-92 At 1500  
 For TAL METALS (Not preserved 1st time)

SIGNATURE: *[Signature]*  
 RECEIVED BY: *[Signature]*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER SPN8903B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4-27-92

SITE ID SPN-89-103B

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1254 END 1250

PROGRAM C

WEATHER SUNNY 40°

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 3.03 FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. -1.15 FT

WELL DEPTH 97 FT  MEASURED  HISTORICAL

WATER DEPTH 55.72 FT

HEIGHT OF WATER COLUMN 41.28 FT

WELL INTEGRITY: YES  NO  N/A

PROT. CASING SECURE

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

RISER ELEVATION 818.00

GROUNDWATER ELEVATION 762.32

WELL DIAMETER  2 INCH  4 INCH  6 INCH

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  MATERIAL  PVC  SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0.0 PPM

PURGE DATA

PURGE VOLUME	<u>1254</u>	<u>1254</u>	<u>1254</u>	<u>1254</u>	<u>1254</u>
	@ <u>38</u> GAL	@ <u>76</u> GAL	@ <u>114</u> GAL	@ <u>152</u> GAL	@ <u>190</u> GAL
TEMP, DEG C	<u>10.4</u>	<u>10.2</u>	<u>10.2</u>	<u>10.3</u>	<u>10.1</u>
PH, UNITS <input type="checkbox"/> PH PAPER	<u>7.7</u>	<u>7.5</u>	<u>7.4</u>	<u>7.4</u>	<u>7.3</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>307</u>	<u>559</u>	<u>560</u>	<u>557</u>	<u>557</u>
PUMP RATE, GPM	<u>4.0</u>				

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODCR  OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO #

SUBMERSIBLE PUMP  GRUNDFOS#

BAILER  2"  4" #     

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION 815.1

NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		<u>1204</u>	<u>032066</u>
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			<u>1204</u>	<u>032066</u>
NIT	YES	H2SO4 TO pH<2	500 ML POLY		<u>1205</u>	<u>032066</u>
CL	YES	4 DEG C	500 ML POLY		<u>1206</u>	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		<u>1207</u>	
TDS	NO	4 DEG C				
TCC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		<u>1208</u>	<u>032066</u>
B4/A	NO	4 DEG C	(2) 1 L AG		<u>1211</u>	<u>1212</u>
NG	NO	4 DEG C	1 L AG		<u>1213</u>	
NAM	NO	4 DEG C	1 L AG		<u>1214</u>	
DNT	NO	4 DEG C	1 L AG		<u>1215</u>	
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (CA, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

PURGE STARTED @ 1254 ON 4-27-92

SIGNATURE: [Signature]

RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SPN8903C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4.27.92**

SITE ID **SPIN-89-03C**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1400 END 1700**

PROGRAM **C**

WEATHER **SUNNY 50°**

### WATER LEVEL / WELL DATA

WELL DEPTH **131 FT**  MEASURED  HISTORICAL

WATER DEPTH **55.88 FT**

HEIGHT OF WATER COLUMN **75.12 FT**

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **3.18 FT**

PROTECTIVE CASING/WELL DIFF. **-0.55 FT**

RISER ELEVATION **818.25**

GROUNDWATER ELEVATION **762.37**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS

AMBIENT AIR **0.0 PPM** WELL MOUTH **0.2 PPM**

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	1415	1430	1445	1500	1515	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
	@ 60 GAL	@ 120 GAL	@ 180 GAL	@ 240 GAL	@ 300 GAL	
TEMP, DEG C	10.4	10.3	10.5	10.5	10.6	
pH, UNITS <input type="checkbox"/> pH PAPER	7.4	7.3	7.5	7.3	7.4	
SPECIFIC CONDUCTIVITY umhos/cm	581	579	578	579	600	
PUMP RATE, GPM	4.8					

### EQUIPMENT DOCUMENTATION

PURGING	SAMPLING	EQUIPMENT ID	DECON FLUIDS USED	WATER LEVEL EQUIP. USED	GROUND ELEVATION
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PERISTALTIC PUMP ISCO #	<input checked="" type="checkbox"/> POTABLE WATER	<input checked="" type="checkbox"/> ELECTRIC COND. PROBE	<b>815.3</b>
<input type="checkbox"/>	<input type="checkbox"/>	SUBMERSIBLE PUMP GRUNDFOS#	<input type="checkbox"/> LIQUINOX	<input type="checkbox"/> FLOAT ACTIVATED	
<input type="checkbox"/>	<input type="checkbox"/>	BAILER 4" #	<input type="checkbox"/> STEAM CLEANING	<input type="checkbox"/> PRESSURE TRANSDUCER	
<input type="checkbox"/>	<input type="checkbox"/>	PVC/SILICON TUBING			
<input type="checkbox"/>	<input type="checkbox"/>	IN-LINE/DISPOSABLE FILTER			
<input type="checkbox"/>	<input type="checkbox"/>	OTHER	NUMBER OF FILTERS USED <b>1</b>		

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	1216	10326401C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1216	10326401C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1217	10525111C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1218	
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1219	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1220	10425201C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1223	10326401C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1224	
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1225	
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1226	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	1227	

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 PURGE STARTED @ 1400 ON 4-27-92

SIGNATURE: *C. K. Williams* / 13  
 RECEIVED BY: *Paul Johnson*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER SPN 89048

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID SPN-89-048

JOB NUMBER 6853-04

SAMPLING DATE 4/27/92

LOCATION ACTIVITY START 08:30 END 10:00 1030

PROGRAM C

FILE NAME CGW

WEATHER sun 50's

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.53 FT

PROTECTIVE CASING/WELL DIFF. -0.29 FT

WELL DEPTH 77 FT  MEASURED  HISTORICAL

WATER DEPTH 42.15 FT

HEIGHT OF WATER COLUMN 34.85 FT

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION 804.21

GROUNDWATER ELEVATION 762.06

WELL DIAMETER  2 INCH  4 INCH

PLEASE H2O CONTAINED?  VOC  DNT  NO  YES

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0.2 PPM

### PURGE DATA

START: 08:32

PURGE VOLUME	@ 34 GAL	@ 68 GAL	@ 102 GAL	@ 136 GAL	@ 170 GAL
TEMP, DEG C	<u>10.7</u>	<u>10.6</u>	<u>10.6</u>	<u>10.7</u>	<u>10.7</u>
DM, UNITS <input type="checkbox"/> DH PAPER	<u>7.7</u>	<u>8.4</u>	<u>7.3</u>	<u>7.2</u>	<u>7.4</u>
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>632</u>	<u>632</u>	<u>631</u>	<u>631</u>	<u>632</u>
PUMP RATE, GPM	<u>3.5</u>				

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID: PERISTALTIC PUMP, SUBMERSIBLE PUMP, BAILER, PVC/SILICON TUBING, IN-LINE/DISPOSABLE FILTER, OTHER

EQUIPMENT # ISCO, 2"  4" #

DECON FLUIDS USED:  POTABLE WATER,  LIQUINOX,  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE,  FLOAT ACTIVATED,  PRESSURE TRANSDUCER

GROUND ELEVATION: 801.6

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1228</u>	<u>C32000C</u>
NA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1228</u>	<u>C32000C</u>
NI7	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1228</u>	<u>C32000C</u>
CL	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1230</u>	<u>C32000C</u>
SO4	TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1231</u>	
TDS	USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(?) 40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	<u>UM33</u>	NO	HCL, 4 DEG C	(?) 40 ML VIAL	<input checked="" type="checkbox"/>	<u>1232</u> / <u>1233</u> / <u>1234</u>	<u>C32000C</u>
BN/A	UM16	NO	HCL, 4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>1235</u> / <u>1236</u>	<u>C32000C</u>
NG	99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>1237</u>	
NAM	UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>1238</u>	
DNT	UN26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>1239</u>	
TPH	USEPA 419.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

PURGE END @ 10:00 ORAS ON 4-27-92  
 SPLIT W/ EPA

SIGNATURE: Paul S. Smith  
 RECEIVED BY: Kel T. Wright

\* RESAMPLED ON 4/29/92 AT 1200 FOR METALS (NOT PRESENT)

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SPN 89104C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4-27-92**

SITE ID **SPN-89-04C**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0835 END 1100**

PROGRAM **C**

WEATHER **SUN 50's**

WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **2.00** FT  
 PROTECTIVE CASING/WELL DIFF. **-.42** FT

WELL DEPTH **109** FT  
 MEASURED  
 HISTORICAL

WATER DEPTH **41.06** FT  
 GAL/VOL **(55.3)**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

HEIGHT OF WATER COLUMN **67.94** FT  
 TOTAL GAL PURGED **278**

RISER ELEVATION **803.17**  
 GROUNDWATER ELEVATION **762.11**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **00** PPM  
 WELL MOUTH **0.2** PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	SAMPLE OBSERVATIONS
	<b>36</b> GAL	<b>112</b> GAL	<b>168</b> GAL	<b>224</b> GAL	<b>280</b> GAL	<input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>10.7</b>	<b>10.4</b>	<b>10.2</b>	<b>10.4</b>	<b>10.4</b>	
pH, UNITS <input type="checkbox"/> PH PAPER	<b>7.8</b>	<b>7.5</b>	<b>7.5</b>	<b>7.5</b>	<b>7.4</b>	
SPECIFIC CONDUCTIVITY umhos/cm	<b>638</b>	<b>624</b>	<b>620</b>	<b>635</b>	<b>625</b>	
PUMP RATE, GPM	<b>4 gpm</b>					

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDEOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DEGM FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION **800.7**

NUMBER OF FILTERS USED **1**

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<b>1240</b>	<b>032660C</b>
CA	SS16	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	SS16	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	SB03	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	SD24	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	SS16	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	SS16	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	USEPA 130.2	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<b>1240</b>	<b>032660C</b>
NIT	TF10	H2SO4 TC pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<b>1241</b>	<b>052510C</b>
CL	TT08	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<b>1242</b>	
SO4	TT08	4 DEG C		<input checked="" type="checkbox"/>		
ALK	USEPA 310.1	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<b>1243</b>	
TDS	USEPA 160.1	4 DEG C		<input checked="" type="checkbox"/>		
TOC	USEPA 415.1	NO		<input checked="" type="checkbox"/>		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	<input checked="" type="checkbox"/>		
VOC	<b>um33</b>	NO	HCL, 4 DEG C	<input checked="" type="checkbox"/>	<b>1244</b>	<b>042570C</b>
BN/A	UM16	NO	4 DEG C (2) 1 L AG	<input checked="" type="checkbox"/>	<b>1247</b>	<b>022810C</b>
NG	99	NO	4 DEG C 1 L AG	<input checked="" type="checkbox"/>	<b>1249</b>	
NAM	UN06	NO	4 DEG C 1 L AG	<input checked="" type="checkbox"/>	<b>1250</b>	
DNT	UN26	NO	4 DEG C 1 L AG	<input checked="" type="checkbox"/>	<b>1251</b>	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

PURGE END @ 955 ~ 4-27-92  
 SPLIT W/ EPA (DOZ FOR EPA)

SIGNATURE: *Paul C. Sullivan*  
 RECEIVED BY: *Paul C. Sullivan*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER SPN 8905A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4/24/92

SITE ID SPN-89-05A

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0800 END 0930

PROGRAM C

WEATHER Cloudy

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 3.5 ± FT.
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. 7.21 FT.

WELL DEPTH 55 FT.  MEASURED  HISTORICAL

WATER DEPTH 41.30 FT.

HEIGHT OF WATER COLUMN 13.7 FT.

GAL/VOL 23 TOTAL GAL PURGED 116

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION 804.25  
 GROUNDWATER ELEVATION 762.95

PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  NO  
 WELL MATERIAL  UPVC  SS  
 AMBIENT AIR 0 PPM WELL MOUTH 0 PPM  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

PURGE DATA

PURGE VOLUME	<u>23</u> GAL	<u>40</u> GAL	<u>69</u> GAL	<u>92</u> GAL	<u>116</u> GAL	SAMPLE OBSERVATIONS: <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODCR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>9.6</u>	<u>9.9</u>	<u>9.9</u>	<u>9.8</u>	<u>10.1</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.3</u>	<u>7.5</u>	<u>7.5</u>	<u>7.6</u>	<u>7.5</u>	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>478</u>	<u>484</u>	<u>488</u>	<u>480</u>	<u>490</u>	
PUMP RATE, GPM						

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID: PERISTALTIC PUMP ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP GRUNDEOS#   
 BAILER 2"  4"   
 PVC/SILICON TUBING \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_

DECON FLUIDS USED:  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PRBCE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION: 801.6

NUMBER OF FILTERS USED: 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			<u>1252</u>	<u>03220010</u>
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			<u>1252</u>	<u>03220010</u>
NIT	YES	H2SO4 TO pH<2	500 ML POLY		<u>1253</u>	<u>03220010</u>
CL	YES	4 DEG C	500 ML POLY		<u>1254</u>	
SO4	YES	4 DEG C	500 ML POLY		<u>1255</u>	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		<u>1256</u>	<u>03220010</u>
BN/A	NO	4 DEG C	(2) 1 L AG		<u>1257</u>	<u>03220010</u>
NG	NO	4 DEG C	1 L AG		<u>1261</u>	
NAM	NO	4 DEG C	1 L AG		<u>1262</u>	
DNT	NO	4 DEG C	1 L AG		<u>1263</u>	
TPH	NO	H2SO4 TO pH<2	1 L GUM			

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: CK/TH  
 RECEIVED BY: Paul R. K...

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP

SITE ID: 511005

LOCATION ACTIVITY: START 0800 END 0930

FIELD SAMPLING NUMBER: 511005

SITE TYPE: WELL

JOB NUMBER: 6853-04

PROGRAM: C

SAMPLING DATE: 4-23-92

FILE NAME: CGW

WEATHER: Cloudy 40's

### WATER LEVEL / WELL DATA

WELL DEPTH: 115 FT

WATER DEPTH: 92.64 FT

HEIGHT OF WATER COLUMN: 116 FT

MEASURED  HISTORICAL

TOP OF WELL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 2.2 ± FT

PROTECTIVE CASING/WELL DIFF.: 0.05 FT

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

PVC WELL CAP  YES  NO  N/A

WELL DIAMETER:  2 INCH  4 INCH  INCH

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL:  PVC  SS

AMBIENT AIR: 0 PPM

WELL MOUTH: 0 PPM

RISER ELEVATION: 102.57

GROUNDWATER ELEVATION: 102.57

### PURGE DATA

PURGE VOLUME	<u>33</u> GAL	<u>66</u> GAL	<u>99</u> GAL	<u>132</u> GAL	<u>166</u> GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.9</u>	<u>10.4</u>	<u>10.4</u>	<u>10.3</u>	<u>10.5</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.4</u>	<u>7.6</u>	<u>7.7</u>	<u>7.7</u>	<u>7.6</u>	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>443</u>	<u>421</u>	<u>421</u>	<u>420</u>	<u>421</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID: ISCO #

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED PRESSURE TRANSDUCER

GROUND ELEVATION: 106.10

NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	<u>10571</u>	<u>10326601C</u>
TAL METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
NIT	YES	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>10571</u>	<u>10326601C</u>
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>10571</u>	<u>10528101C</u>
SO <sub>4</sub>	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>10571</u>	
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>10571</u>	
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>	<u>10571</u>	
TOC	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2 (3)40 ML VIAL		<input checked="" type="checkbox"/>	<u>10571</u>	
NH <sub>3</sub> N <sub>2</sub>	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2 500 ML POLY		<input checked="" type="checkbox"/>	<u>10571</u>	
VOC	NO	HCL, 4 DEG C (3)40 ML VIAL		<input checked="" type="checkbox"/>	<u>10571</u>	<u>10326601C</u>
BN/A	NO	4 DEG C (2) 1 L AG		<input checked="" type="checkbox"/>	<u>10571</u>	
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>10571</u>	<u>10326601C</u>
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>10571</u>	
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>10571</u>	
TPH	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	<u>10571</u>	

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: C/K/TH  
 RECEIVED BY: Karl R. West



ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SITE ID: 5111116

JOB NUMBER: 6853-04

SAMPLING DATE: 4/28/92

LOCATION ACTIVITY: START 0930 END 1100

PROGRAM: C

FILE NAME: CGW

WEATHER: Cloudy

WATER LEVEL / WELL DATA

WELL DEPTH: 145.5 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 2.45 FT

PROTECTIVE CASING/WELL DIFF.:

WATER DEPTH: 91.59 FT

49 GAL/VOL (49)

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION:

HEIGHT OF WATER COLUMN: 770.72

246 TOTAL GAL PURGED (246)

GROUNDWATER ELEVATION: 770.72

PURGE H2O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR  PPM

WELL MOUTH  PPM

WELL DIAMETER:  2 INCH  
 4 INCH  
 6 INCH

PURGE DATA

PURGE VOLUME	@ 49 GAL	@ 98 GAL	@ 147 GAL	@ 196 GAL	@ 246 GAL
TEMP, DEG C	11.4	11.4	11.6	11.5	11.7
pH, UNITS <input type="checkbox"/> pH PAPER	7.9	7.6	7.7	7.7	7.6
SPECIFIC CONDUCTIVITY umhos/cm	245	491	491	492	416
PUMP RATE, GPM					

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING	SAMPLING	EQUIPMENT ID	DECON FLUIDS USED	WATER LEVEL EQUIP. USED	GROUND ELEVATION
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER	<input checked="" type="checkbox"/> POTABLE WATER <input type="checkbox"/> LIQUINOX <input type="checkbox"/> STEAM CLEANING	<input checked="" type="checkbox"/> ELECTRIC COND. PROBE <input type="checkbox"/> FLOAT ACTIVATED <input type="checkbox"/> PRESSURE TRANSDUCER	770.72
		EQUIPMENT ID ISCO # GRUNDFOS # 2" 4" #	NUMBER OF FILTERS USED: 1		

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2	1 L POLY			220600
TAL METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2				
CA SS16	YES	HN03 TO pH<2				
NA SS16	YES	HN03 TO pH<2				
CD SS16	YES	HN03 TO pH<2				
CR SS16	YES	HN03 TO pH<2				
HG SB03	YES	HN03 TO pH<2				
PB SD24	YES	HN03 TO pH<2				
NI SS16	YES	HN03 TO pH<2				
BA SS16	YES	HN03 TO pH<2				
HARD USEPA 130.2	YES	HN03 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL				
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY				
VCC Um35	NO	HCL, 4 DEG C (3)40 ML VIAL				
BN/A UM16	NO	4 DEG C (2) 1 L AG				
NG 99	NO	4 DEG C 1 L AG				
NAM UN05	NO	4 DEG C 1 L AG				
DNT UW26	NO	4 DEG C 1 L AG				
TPH USEPA 418.1	NO	H2SO4 TO pH<2 1 L GWM				

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: CK/TU

RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

51117

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.11.92

SITE ID 51117

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1430 END 1600

PROGRAM C

WEATHER cloudy wet 40°

### WATER LEVEL / WELL DATA

WELL DEPTH 121 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.72 FT

PROTECTIVE CASING/WELL DIFF. - .11 FT

WATER DEPTH 94.67 FT

43 GAL/VOL

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT

RISER ELEVATION 869.40

HEIGHT OF WATER COLUMN 26.33 FT

215 TOTAL GAL PURGED

WELL LOCKED   
PVC WELL CAP

GROUNDWATER ELEVATION 769.73

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.7 PPM

WELL MOUTH 0.9 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	243 GAL	360 GAL	129 GAL	172 GAL	215 GAL
TEMP, DEG C	10.6	10.5	10.4	11.2	10.5
pH, UNITS	6	6	6	6	6.0
SPECIFIC CONDUCTIVITY umhos/cm	608	609	606	606	605
PUMP RATE, GPM	4.3 gpm				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID ISCO #  
GROUND FOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 869.40

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2				
CA SS16	YES	HN03 TO pH<2				
NA SS16	YES	HN03 TO pH<2				
CD SS16	YES	HN03 TO pH<2				
CR SS16	YES	HN03 TO pH<2				032640 C
HG SB03	YES	HN03 TO pH<2				
PB SD24	YES	HN03 TO pH<2				
NI SS16	YES	HN03 TO pH<2				
BA SS16	YES	HN03 TO pH<2				
HARD USEPA 130.2	YES	HN03 TO pH<2				032640 C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			032640 C
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL			012270 C
BN/A UM16	NO	4 DEG C	(2) 1 L AG			022810 C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			022810 C
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Rick Stillwater*  
RECEIVED BY: *Nancy E. Rofa*

Bow = 11 ft.  
 Depth to H<sub>2</sub>O = 1 ft.  
 Height of H<sub>2</sub>O column = 10 ft. (a)


Bottom of screen =      ft.  
 Top of screen =      ft.  
 Length of screen =      ft. (b)

Bottom of sandpack =      ft.  
 Top of sandpack =      ft.  
 Height of sandpack =      ft. (c)

OD well = .35 ft.  
 OR well = .175 ft

ID well = .33 ft.  
 IR well = .167 ft

10" borehole = .833 ft d  
 = .416 ft r

volume of  =  $\pi r^2 h$

volume of well inside sand =  $\pi (.175 \text{ ft})^2 (\underline{20} \text{ ft})$   
 = 2.28 ft<sup>3</sup> (then b)

volume of saturated borehole =  $\pi (.416 \text{ ft})^2 (\underline{20} \text{ ft})$   
 = 11.1 ft<sup>3</sup> (then c)

area of annulus = (volume saturated borehole - volume well inside sand) = 11.1 ft<sup>3</sup> - 2.28 ft<sup>3</sup> = 8.82 ft<sup>3</sup>

(8.82 ft<sup>3</sup>) ( $\frac{7.48 \text{ gal}}{\text{ft}^3}$ ) (.3 porosity) = (20.09 gal/vol in annulus) (5) = 100.4 gal total from annulus

volume of saturated well =  $\pi (.167 \text{ ft})^2 (\underline{20} \text{ ft})$   
 = 2.28 ft<sup>3</sup> (a)

(2.28 ft<sup>3</sup>) ( $\frac{7.48 \text{ gal}}{\text{ft}^3}$ ) = (17.03 gal/volume in well) (5) = 85.15 gal total from well

100.4 gal total from annulus + 85.15 gal total from well = 185.5 gal total to purge

Location \_\_\_\_\_

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP

SITE ID: 1111111111

LOCATION ACTIVITY: START 0800 END 0930

FIELD SAMPLING NUMBER: 1111111111

SITE TYPE: WELL

JOB NUMBER: 6853-04

PROGRAM: C

SAMPLING DATE: 4 22 92

FILE NAME: CGW

WEATHER: Cloudy

### WATER LEVEL / WELL DATA

WELL DEPTH: 111 FT

WATER DEPTH: 101.36 FT

HEIGHT OF WATER COLUMN: 10 FT

MEASURED  HISTORICAL

TOP OF WELL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 1.2 FT

PROTECTIVE CASING/WELL DIFF.: 1 FT

WELL INTEGRITY: YES  NO  N/A

PROT. CASING SECURE

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

RISER ELEVATION: 774.49

GROUNDWATER ELEVATION: 773.63

PURGE H2O CONTAINED?  VOC  DNT  NO  PVC  SS

WELL MATERIAL:  PVC  SS

AMBIENT AIR  PPM

WELL MOUTH  PPM

WELL DIAMETER:  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	<u>17</u> GAL	<u>34</u> GAL	<u>51</u> GAL	<u>65</u> GAL	<u>84</u> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11.4</u>	<u>10.8</u>	<u>11.1</u>	<u>10.7</u>	<u>11.0</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.2</u>	<u>7.6</u>	<u>7.7</u>	<u>7.2</u>	<u>7.7</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>393</u>	<u>570</u>	<u>571</u>	<u>572</u>	<u>578</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP

SUBMERSIBLE PUMP

BAILER

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

EQUIPMENT ID: ISCO #

GRUNDEOS#

2"  4"

DECON FLUIDS USED

POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

NUMBER OF FILTERS USED: 1

GROUND ELEVATION: 872.5

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

### OTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: CK/T14

RECEIVED BY: Paul R. [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP  
 SITE ID:                       
 LOCATION ACTIVITY: START 1530 END 1630

FIELD SAMPLING NUMBER:                       
 SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C

SAMPLING DATE: 4/21/92  
 FILE NAME: CGW  
 WEATHER: 10/14/92

### WATER LEVEL / WELL DATA

WELL DEPTH: 102 FT  MEASURED  HISTORICAL  
 WATER DEPTH: 104.30 FT  
 HEIGHT OF WATER COLUMN: 17.7 FT  
 PROTECTIVE CASING/WELL DIFF.: 1.75 FT  
 PROTECTIVE CASING/WELL DIFF.: 50 FT  
 RISER ELEVATION: 771.09  
 GROUNDWATER ELEVATION: 775.39  
 WELLS INTACT: YES  NO  N/A   
 PROT. CASING SECURE: YES  NO   
 CONCRETE COLLAR INTACT: YES  NO   
 WELL LOCKED: YES  NO   
 PVC WELL CAP: YES  NO   
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 WELL MATERIAL:                       
 AMBIENT AIR: 0 PPM  
 WELL MOUTH: 1 PPM  
 WELL DIAMETER:  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	@ <u>2</u> GAL	@ <u>5</u> GAL	@ <u>10</u> GAL	@ <u>15</u> GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	<u>10.0</u>	<u>10.6</u>	<u>10.6</u>	<u>10.0</u>	<input checked="" type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	<u>544</u>	<u>528</u>	<u>574</u>	<u>570</u>	<input type="checkbox"/> COLGRED
PUMP RATE, GPM					<input type="checkbox"/> TURBID
					<input type="checkbox"/> OOCR
					<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP  ISCO #                       
 SUBMERSIBLE PUMP  GRUNDEFS#                       
 BAILER  2"  4" #                       
 PVC/SILICON TUBING                       
 IN-LINE/DISPOSABLE FILTER                       
 OTHER                       
 DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION: 871.4  
 NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI7 TF10	YES	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY			
<input type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL			
<input type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG			
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

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# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

5110101

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID 71150

JOB NUMBER 6853-04

SAMPLING DATE 4/22/92

LOCATION ACTIVITY START 1000 END 1130

PROGRAM C

FILE NAME CGW

WEATHER Cloudy 40%

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.5 ± FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. - .2 FT  
 MEASURED  
 HISTORICAL  
 WELL DEPTH 136 FT  
 WATER DEPTH 105.78 FT  
 HEIGHT OF WATER COLUMN 20.22 FT  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR — PPM WELL MOUTH — PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH  
 RISER ELEVATION 774.50  
 GROUNDWATER ELEVATION 773.98

### PURGE DATA

PURGE VOLUME	33 GAL	66 GAL	99 GAL	132 GAL	167 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.1	10.7	11.0	10.8	10.9	
pH, UNITS <input type="checkbox"/> pH PAPER	7.6	7.6	7.7	7.6	7.7	
SPECIFIC CONDUCTIVITY umhos/cm	522	490	492	424	482	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDEOS#  2"  4" # \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 777.6

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				032500C
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
PA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				072601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			0528107C
CL TT08	YES	4 DEG C	500 ML POLY			
SD4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL			0628107C
BN/A UM16	NO	4 DEG C	(2) 1 L AG			0428107C
NG 99	NO	4 DEG C	1 L AG			0228107C
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

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# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

PROJECT USATHAMA-BAAP  
 SITE ID 51121  
 LOCATION ACTIVITY START 1530 END 1630

FIELD SAMPLING NUMBER 111211  
 SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM 2

SAMPLING DATE 4/13/92  
 FILE NAME CGW  
 WEATHER CLOUDY 30°

### WATER LEVEL / WELL DATA

WELL DEPTH 6.1 FT.  MEASURED  HISTORICAL  
 WATER DEPTH 40.23 FT.  
 HEIGHT OF WATER COLUMN 21 FT.  
 PROTECTIVE TOP OF WELL  TOP OF CASING   
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.0± FT.  
 PROTECTIVE CASING/WELL DIFF. -0.54 FT.  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  NO  
 WELP MATERIAL  PVC  SS  
 AMBIENT AIR — PPM WELL MOUTH — PPM  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 RISER ELEVATION 515.45  
 GROUNDWATER ELEVATION 775.20

### PURGE DATA

PURGE VOLUME	@ <u>35</u> GAL	@ <u>70</u> GAL	@ <u>105</u> GAL	@ <u>140</u> GAL	@ <u>175</u> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> COOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.1</u>	<u>10.4</u>	<u>10.4</u>	<u>10.5</u>	<u>10.2</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.9</u>	<u>7.8</u>	<u>7.8</u>	<u>7.8</u>	<u>7.8</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>636</u>	<u>610</u>	<u>660</u>	<u>677</u>	<u>676</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS#   
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION 813.9  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		10324601C
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		10324601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		10563101C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input type="checkbox"/>		0425301C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>		0225101C
NG 99	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

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 RECEIVED BY: Nancy E. [Signature]

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PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 577201

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SITE ID: 51122

JOB NUMBER: 6853-04

SAMPLING DATE: 4.12.92

LOCATION ACTIVITY: START 1100 END 1200

PROGRAM: C

FILE NAME: CGW

WEATHER: Sunny, 40°S

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.2 FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. .61 FT

WELL DEPTH 144 FT  MEASURED  HISTORICAL

WATER DEPTH 130.05 FT

HEIGHT OF WATER COLUMN 16 FT

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION: 907.16

GROUNDWATER ELEVATION: 777.11

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS

WELL MATERIAL:  PVC  SS

AMBIENT AIR 0 PPM WELL MOUTH 0 PPM

WELL DIAMETER:  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 25 GAL	@ 50 GAL	@ 75 GAL	@ 100 GAL	@ 125 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11.7</u>	<u>12.1</u>	<u>12.1</u>	<u>12.1</u>	<u>12.4</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.2</u>	<u>7.0</u>	<u>7.0</u>	<u>7.1</u>	<u>7.1</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>390</u>	<u>385</u>	<u>386</u>	<u>287</u>	<u>326</u>	
PUMP RATE, GPM	<u>2.8</u>					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID: PERISTALTIC PUMP ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP GRUNDEFS# 2  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION: 904.5

NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		<u>878</u>	<u>032601C</u>
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			<u>878</u>	<u>032601C</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>879</u>	<u>052801C</u>
CL TT08	YES	4 DEG C	500 ML POLY		<u>880</u>	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>881</u>	
TDS USEPA 160.1	NO	4 DEG C			<u>882</u>	
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC <u>um33</u>	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>883</u>	<u>042801C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG		<u>884</u>	<u>022801C</u>
NG 99	NO	4 DEG C	1 L AG		<u>885</u>	
NAM UN06	NO	4 DEG C	1 L AG		<u>886</u>	<u>022801C</u>
DNT UW26	NO	4 DEG C	1 L AG		<u>887</u>	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		<u>888</u>	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

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PAGE \_\_\_ OF \_\_\_

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID 511123

JOB NUMBER 6853-04

SAMPLING DATE 7/14/92

LOCATION ACTIVITY START 1230 END 1500

PROGRAM C

FILE NAME CGW

WEATHER Cloudy

WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 1.8 ± FT  
 PROTECTIVE CASING/WELL DIFF. -.05 FT  
 WELL DEPTH 170 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 89.67 FT  
 HEIGHT OF WATER COLUMN 146 FT  
 59 GAL/VOL (59)  
 296 TOTAL GAL PURGED (296)  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 RISER ELEVATION 768.71  
 GROUNDWATER ELEVATION 779.12  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR \_\_\_\_\_ PPM  
 WELL MOUTH \_\_\_\_\_ PPM  
 WELL DIAMETER  2 INCH  4 INCH  \_\_\_\_\_ INCH

PURGE DATA

PURGE VOLUME	1	2	3	4	5	SAMPLE OBSERVATIONS
	59 GAL	118 GAL	177 GAL	236 GAL	296 GAL	<input checked="" type="checkbox"/> CLEAR
TEMP, DEG C	10.7	10.5	10.5	10.6	10.5	<input type="checkbox"/> CLOUDY
pH, UNITS <input type="checkbox"/> pH PAPER	7.9	7.7	7.5	7.7	7.7	<input type="checkbox"/> COLORED
SPECIFIC CONDUCTIVITY umhos/cm	575	566	565	563	563	<input type="checkbox"/> TURBID
PUMP RATE, GPM						<input type="checkbox"/> COOR
						<input type="checkbox"/> OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GROUND FOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_  
 DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 767.6  
 NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
PA SS16	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO <sub>3</sub> TO pH<2		<input checked="" type="checkbox"/>		
NIT TF10	YES	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO <sub>4</sub> TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
NH <sub>3</sub> N USEPA 350.2	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC um33	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AC	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

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PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

1104

PROJECT: USATHAMA-BAAP  
 SITE ID: 1104  
 LOCATION ACTIVITY: START 0930 END 1030

SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C

SAMPLING DATE: 4.14.92  
 FILE NAME: CGW  
 WEATHER: CLOUDY 30

### WATER LEVEL / WELL DATA

WELL DEPTH: 103.41 FT  
 WATER DEPTH: 103.41 FT  
 HEIGHT OF WATER COLUMN: 275 FT  
 MEASURED HISTORICAL:  MEASURED  
 TOP OF WELL:  TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND): 1.7± FT  
 PROTECTIVE CASING/WELL DIFF.: -.10 FT  
 RISER ELEVATION: 776.42  
 GROUNDWATER ELEVATION: 776.42  
 WELLS DIAMETER: 2 INCH

### PURGE DATA

PURGE VOLUME	2	3	4	5	SAMPLE OBSERVATIONS
~30 GAL	/	/	/	/	CLEAR
TEMP, DEG C	10.9	/	/	/	CLOUDY
pH, UNITS	7.5	/	/	/	COLOR
SPECIFIC CONDUCTIVITY umhos/cm	802	/	/	/	TURBID
PUMP RATE, GPM	/	/	/	/	ODOR
					OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER: \_\_\_\_\_  
 EQUIPMENT ID: ISCO # \_\_\_\_\_  
 GROUNDEDS# \_\_\_\_\_  
 2" # \_\_\_\_\_  
 4" # \_\_\_\_\_  
 DECON FLUIDS USED:  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION: 776.42  
 NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		/	/
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			/	/
CA	YES	HNO3 TO pH<2			/	/
NA	YES	HNO3 TO pH<2			/	/
CD	YES	HNO3 TO pH<2			/	/
CR	YES	HNO3 TO pH<2			/	/
HG	YES	HNO3 TO pH<2			/	/
PB	YES	HNO3 TO pH<2			/	/
NI	YES	HNO3 TO pH<2			/	/
BA	YES	HNO3 TO pH<2			/	/
HARD	YES	HNO3 TO pH<2			/	/
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1571	032601C
CL	YES	4 DEG C	500 ML POLY		1572	0528101C
SO4	YES	4 DEG C			1573	/
ALK	NO	4 DEG C	500 ML POLY		1574	/
TDS	NO	4 DEG C			/	/
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL		/	/
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY		/	/
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		1575	0528101C
BN/A	NO	4 DEG C	(2) 1 L AG		1576	0228101C
NG	NO	4 DEG C	1 L AG		/	/
NAM	NO	4 DEG C	1 L AG		/	/
DNT	NO	4 DEG C	1 L AG		/	/
TPH	NO	H2SO4 TO pH<2	1 L GWM		/	/

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* Purged dry after ~ 30-35 gal. Let recharge ~ 10 min. then sampled

SIGNATURE: *Vm/eks*  
 RECEIVED BY: *Nancy E. Porto*

ONLY MANAGER'S TWO VOLUMES  
 LAST ROUND ~ 20 MIN RECHARGE

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SITE ID: 5711205

JCS NUMBER: 6853-04

SAMPLING DATE: 4.14.92

LOCATION ACTIVITY: START 1445 END 1530

PROGRAM: C

FILE NAME: CGW

WEATHER: cloudy 30's

### WATER LEVEL / WELL DATA

WELL DEPTH: 28 FT

MEASURED  HISTORICAL

TOP OF WELL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 3.35 FT

PROTECTIVE CASING/WELL DIFF.: 2.4 FT

WATER DEPTH: 121.09 FT

15 GAL/VOL (15)

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A   
 CONCRETE COLLAR INTACT  YES  NO  N/A   
 WELL LOCKED  YES  NO  N/A   
 PVC WELL CAP  YES  NO  N/A

RISER ELEVATION: 774.75

HEIGHT OF WATER COLUMN: 7 FT

75 TOTAL GAL PURGED (75)

GROUNDWATER ELEVATION: 774.65

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR - PPM

WELL MOUTH - PPM

WELL DIAMETER:  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 15 GAL	@ 30 GAL	@ 45 GAL	@ 60 GAL	@ 75 GAL
TEMP, DEG C	10.4	10.7	10.1	10.7	10.7
pH, UNITS <input type="checkbox"/> pH PAPER	7.87	7.73	7.03	7.65	7.67
SPECIFIC CONDUCTIVITY umhos/cm	403	401	401	400	401
PUMP RATE, GPM	3.0				

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING	SAMPLING	EQUIPMENT ID	DECON FLUIDS USED	WATER LEVEL EQUIP. USED	GROUND ELEVATION
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER	<input checked="" type="checkbox"/> POTABLE WATER <input type="checkbox"/> LIQUINOX <input type="checkbox"/> STEAM CLEANING	<input checked="" type="checkbox"/> ELECTRIC COND. PROBE <input type="checkbox"/> FLOAT ACTIVATED <input type="checkbox"/> PRESSURE TRANSDUCER	774.4
		ISCO # GRUNDFOS # 2" <input type="checkbox"/> 4" #			
					NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		054501C
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		054651C
<input type="checkbox"/> NI7 TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		054510C
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		054510C
<input type="checkbox"/> VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>		012570C
<input type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		022810C
<input type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES: PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]*  
 RECEIVED BY: *Wendy E. Rosta*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SAMPLING DATE: 4/15/92

SITE ID: [grid]

JOB NUMBER: 6853-04

FILE NAME: CGW

LOCATION ACTIVITY: START 0930 END 1100

PROGRAM: C

WEATHER: rain, 40's

WATER LEVEL / WELL DATA

TOP OF WELL TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) 0.25 FT PROTECTIVE CASING/WELL DIFF. -0.2 FT

WELL DEPTH: 113 FT

MEASURED HISTORICAL

WATER DEPTH: 91.82 FT

40 GAL/VOL (40) TOTAL GAL PURGED 199

WELL INTEGRITY: PROT. CASING SECURE YES NO N/A CONCRETE COLLAR INTACT YES NO N/A WELL LOCKED YES NO N/A PVC WELL CAP YES NO N/A

RISER ELEVATION: 874.95

GROUNDWATER ELEVATION: 785.13

HEIGHT OF WATER COLUMN: 24 FT

PURGE H2O CONTAINED? VOC DNT NO YES PVC SS

AMBIENT AIR PPM WELL MOUTH PPM

WELL DIAMETER: 2 INCH 4 INCH 1 INCH

PURGE DATA

Table with 6 columns: PURGE VOLUME (40, 80, 120, 160, 200 GAL), TEMP, DEG C (11.1, 11.5, 11.5, 11.6, 11.6), pH, UNITS (7.5, 7.4, 7.4, 7.4, 7.4), SPECIFIC CONDUCTIVITY umhos/cm (629, 636, 639, 641, 637), PUMP RATE, GPM

SAMPLE OBSERVATIONS: CLEAR, CLOUDY, COLORED, TURBID, ODOR, OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

Equipment documentation form with sections for Purging, Sampling, Equipment ID, Recon Fluids Used, Water Level Equip. Used, and Ground Elevation.

ANALYTICAL PARAMETERS

Table with columns: METHOD NUMBER, FILTERED, PRESERVATION METHOD, VOLUME REQUIRED, SAMPLE COLLECTED, SAMPLE BOTTLE ID NUMBERS, BOTTLE LOT #. Lists parameters like PP METALS, TAL METALS, ALK, TDS, TOC, VOC, etc.

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP) TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: VM/CK RECEIVED BY: Nancy E. Rota

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF   

## FIELD DATA RECORD - GROUNDWATER

PROJECT USATHAMA-BAAP

SITE ID 511127

LOCATION ACTIVITY START 0945 END 1115

FIELD SAMPLING NUMBER 511127

SITE TYPE WELL

JOB NUMBER 6853-04

PROGRAM C

SAMPLING DATE 4.13.92

FILE NAME CGW

WEATHER cloudy, 30's

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.1 FT

PROTECTIVE CASING/WELL DIFF. .05 FT

WELL DEPTH 77 FT  MEASURED  HISTORICAL

WATER DEPTH 50.93 FT

HEIGHT OF WATER COLUMN 27 FT

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION   

GROUNDWATER ELEVATION 829.52

PURGE H2O CONTAINED?  VOC  DNT  NO  PVC  SS

WELL MATERIAL  AMBIENT AIR    PPM  WELL MOUTH    PPM

WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	@ 50 GAL	@ 100 GAL	@ 150 GAL	@ 200 GAL	@ 250 GAL
TEMP, DEG C	<u>9.8</u>	<u>10.5</u>	<u>10.6</u>	<u>10.6</u>	<u>10.6</u>
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.97</u>	<u>7.79</u>	<u>8.0</u>	<u>8.02</u>	<u>8.0</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>190</u>	<u>172</u>	<u>175</u>	<u>192</u>	<u>199</u>
PUMP RATE, GPM	<u>40</u>				

SAMPLE OBSERVATIONS  CLEAR  CLOUDY  COLORED  TURBID  OCCR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID ISCO #    GRUNDFOS# X 2"  4"  #   

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION 829.52

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2				
<input type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY			
<input type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL			
<input type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG			
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: [Signature]  
 RECEIVED BY: Nancy E. Ro

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 511128

PROJECT USATHAMA-SAAP

SITE TYPE WELL

SAMPLING DATE 4.13.92

SITE ID 511128

JOB NUMBER 6853-G

FILE NAME CGW

LOCATION ACTIVITY START 0800 END 0930

PROGRAM C

WEATHER cloudy, 30°S

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.2 FT  
 PROTECTIVE CASING/WELL DIFF. .02 FT  
 WELL DEPTH 77 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 71.88 FT  
 HEIGHT OF WATER COLUMN 36 FT  
 RISER ELEVATION 837.81  
 GROUNDWATER ELEVATION 837.43  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR — PPM  
 WELL MOUTH — PPM  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	@ 50 GAL	@ 100 GAL	@ 150 GAL	@ 200 GAL	@ 250 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	<u>10.5</u>	<u>10.3</u>	<u>10.6</u>	<u>10.6</u>	<u>7.0</u>	<input checked="" type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER	<u>5.9</u>	<u>7.5</u>	<u>7.6</u>	<u>7.7</u>	<u>8.0</u>	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	<u>205</u>	<u>203</u>	<u>303</u>	<u>205</u>	<u>205</u>	<input type="checkbox"/> COLORED
PUMP RATE, GPM	<u>4.0</u>					<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDEFS# 2  
 2"  4" # \_\_\_\_\_  
 RECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PRGE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 287.5  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				<u>0428.01C</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SC4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TP- USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)

SIGNATURE: W. E. Korta  
 RECEIVED BY: W. E. Korta

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 111129

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID 11129

JOB NUMBER 6853-04

SAMPLING DATE 4.9.92

LOCATION ACTIVITY START 0800 END 1030

PROGRAM C

FILE NAME CGW

WEATHER partly cloudy

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.1 FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. — FT

WELL DEPTH 120 FT  MEASURED  HISTORICAL

WATER DEPTH 76.34 FT

HEIGHT OF WATER COLUMN 44 FT

60 GAL/VOL 50 WELL INTEGRITY: YES NO N/A

300 TOTAL GAL PURGED 290 PROT. CASING SECURE  CONCRETE COLLAR INTACT  WELL LOCKED  PVC WELL CAP

RISER ELEVATION 413.12

GROUNDWATER ELEVATION 836.78

PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  NO WELL MATERIAL  PVC  SS AMBIENT AIR 0 PPM WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	<u>a 60</u> GAL	<u>a 120</u> GAL	<u>a 180</u> GAL	<u>a 240</u> GAL	<u>a 300</u> GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>9.9</u>	<u>9.9</u>	<u>9.9</u>	<u>10.0</u>	<u>10.0</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.4</u>	<u>7.8</u>	<u>7.7</u>	<u>7.7</u>	<u>7.7</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>543</u>	<u>552</u>	<u>553</u>	<u>554</u>	<u>560</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDEFS# X

BAILER   2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION 916.9

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		<u>022280</u>
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		<u>022280</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		<u>070310</u>
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VCC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>		<u>022280</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		<u>022280</u>
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, NG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: J. R. ...  
 RECEIVED BY: Umaru E. ...

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 517-50

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SAMPLING DATE: 4.8.92

SITE ID: 91130

JOB NUMBER: 6853-04

FILE NAME: CGW

LOCATION ACTIVITY: START 0900 END 0945

PROGRAM: C

WEATHER: Sunny, 50's

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 3.7 FT  
 PROTECTIVE CASING/WELL DIFF. 1.5 FT

WELL DEPTH 126 FT  
 MEASURED  
 HISTORICAL

WATER DEPTH 105.00 FT  
 RISER ELEVATION 711.1

HEIGHT OF WATER COLUMN 21 FT  
 40 GAL/VOL  
 40 TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

GROUNDWATER ELEVATION 836.18

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0.0 PPM  
 WELL MOUTH 0.0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	<u>40</u> GAL	GAL	GAL	GAL	GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.6</u>	/	/	/	/	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>5.2</u>	/	/	/	/	
SPECIFIC CONDUCTIVITY umhos/cm	<u>157</u>	/	/	/	/	
PUMP RATE, GPM	<u>3</u>	/	/	/	/	

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP  GRUNDEOS#  
 BAILER  2"  4"  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION: 951.2

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		<u>0222801C</u>
CA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		<u>0222801C</u>
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		<u>02281010</u>
CL	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4	TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS	USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>		<u>0212301C</u>
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		<u>0228101C</u>
NG	99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)

Labeled on well # 1131 well ran dry at 30 gallons. Let recharge pump out 10 more gallons for one volume than sampled.

SIGNATURE: J. P. Samuels  
 RECEIVED BY: Marcy E. Rota



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER                     

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4 8 92

SITE ID                     

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1000 END 1045

PROGRAM C

WEATHER Sunny, 50's

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 MEASURED  
 HISTORICAL

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.9 FT  
 PROTECTIVE CASING/WELL DIFF. 1.45 FT

WELL DEPTH 156 FT  
 WATER DEPTH 101.47 FT  
 HEIGHT OF WATER COLUMN 155 FT

RISER ELEVATION             
 GROUNDWATER ELEVATION 84070

WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A

PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR  PPM  
 WELL MOUTH  PPM  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	@ <u>50</u> GAL	@ <u>    </u> GAL	@ <u>    </u> GAL	@ <u>    </u> GAL	@ <u>    </u> GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	<u>10.3</u>					
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.0</u>					
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>356</u>					
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID: PERISTALTIC PUMP  ISCO #             
 SUBMERSIBLE PUMP  GROUND LOS #             
 BAILER  2"  4" #             
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER

DECON FLUIDS USED:  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 74071

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input checked="" type="checkbox"/> TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG			
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L G/M			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

well can dry at 50 gallons. let recharge then sampled. plus recharge took 1hr to recharge.  label on well # S1130

SIGNATURE:                       
 RECEIVED BY:

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE        OF       

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER                     

PROJECT USATHAMA-BAAP  
 SITE ID                       
 LOCATION ACTIVITY START 1640 END 1800

SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C

SAMPLING DATE 4.9.92  
 FILE NAME CGW  
 WEATHER Sunny, 60's

## WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 1.9 FT  
 PROTECTIVE CASING/WELL DIFF. 0.1 FT

WELL DEPTH          FT  
 MEASURED  
 HISTORICAL

WATER DEPTH 137.85 FT  
 RISER ELEVATION 775.4

HEIGHT OF WATER COLUMN 22 FT  
 35 GAL/VOL  
 175 TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

GROUNDWATER ELEVATION 777.54

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR          PPM  
 WELL MOUTH          PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

## PURGE DATA

PURGE VOLUME	<u>235</u> GAL	<u>290</u> GAL	<u>105</u> GAL	<u>140</u> GAL	<u>175</u> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>12.2</u>	<u>12.2</u>	<u>12.2</u>	<u>12.2</u>	<u>12.1</u>	
pH, UNITS <input checked="" type="checkbox"/> pH PAPER	<u>6.5</u>	<u>6.0</u>	<u>6.0</u>	<u>6.0</u>	<u>6.5</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>425</u>	<u>425</u>	<u>425</u>	<u>425</u>	<u>425</u>	
PUMP RATE, GPM	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>	

## EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID           
 SUBMERSIBLE PUMP  ISCO #           
 BAILER  GROUND FOS#           
 PVC/SILICON TUBING  3"  4" #           
 IN-LINE/DISPOSABLE FILTER   
 OTHER

DECON FLUIDS USED   
 POTABLE WATER   
 LIQUINOX   
 STEAM CLEANING

WATER LEVEL EQUIP. USED   
 ELECTRIC COND. PROBE   
 FLOAT ACTIVATED   
 PRESSURE TRANSDUCER

GROUND ELEVATION         

NUMBER OF FILTERS USED         

## ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1537</u>	<u>01228010</u>
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1537</u>	<u>01228010</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1535</u>	<u>01228010</u>
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1534</u>	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1546</u>	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL		<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 500 ML POLY		<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C (3)40 ML VIAL		<input checked="" type="checkbox"/>	<u>1541</u>	<u>01228010</u>
BN/A UM16	NO	4 DEG C (2) 1 L AG		<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C 1 L AG		<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2 1 L GWM		<input checked="" type="checkbox"/>		

## NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: J. Brown  
 RECEIVED BY: William F. Rota

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 111313

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4/23/92

SITE ID 111313

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1030 END 1200

PROGRAM C

WEATHER OVERCAST 40s

### WATER LEVEL / WELL DATA

WELL DEPTH 47 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.03 FT

PROTECTIVE CASING/WELL DIFF. 2.3 FT

WATER DEPTH 68.5 FT

30.5 GAL/VOL

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION 758.21

HEIGHT OF WATER COLUMN 28.5 FT

152 TOTAL GAL PURGED

GROUNDWATER ELEVATION 759.79

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0.0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	@ <u>30.5</u> GAL	@ <u>61</u> GAL	@ <u>91.5</u> GAL	@ <u>122</u> GAL	@ <u>152.5</u> GAL
TEMP, DEG C	<u>10.7</u>	<u>10.5</u>	<u>10.6</u>	<u>10.7</u>	<u>10.9</u>
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.65</u>	<u>7.10</u>	<u>7.61</u>	<u>7.53</u>	<u>7.40</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>615</u>	<u>620</u>	<u>623</u>	<u>621</u>	<u>620</u>
PUMP RATE, GPM	<u>4</u>				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS# 428 #2  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER 1  
 OTHER \_\_\_\_\_

RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 758.5

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC Um33	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
HG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
AAW UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Kam E. Cate  
 RECEIVED BY: Paul W. Kuster

**ABB ENVIRONMENTAL SERVICES, INC.**

**FIELD DATA RECORD - GROUNDWATER**

PROJECT: USATHAMA-BAAP

SITE ID: 1111514

LOCATION ACTIVITY: START 1306 END 1500

FIELD SAMPLING NUMBER: 1111514

SITE TYPE: WELL

JOB NUMBER: 6853-04

PROGRAM: C

SAMPLING DATE: 28 APR 92

FILE NAME: CGW

WEATHER: Sunny 50°

**WATER LEVEL / WELL DATA**

WELL DEPTH: 140 FT

WATER DEPTH: 149.68 FT

HEIGHT OF WATER COLUMN: 143.82 FT

TOTAL GAL PURGED: 5

PROTECTIVE CASING STICK-UP (FROM GROUND): 1.39 FT

PROTECTIVE CASING/WELL DIFF. RISER ELEVATION: 921.81

GROUNDWATER ELEVATION: 777.99

WELL DIAMETER: 2 INCH

**PURGE DATA**

PURGE VOLUME	@ 5 GAL	@ 10 GAL	@ 15 GAL	@ 20 GAL	@ 25 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	<u>13.8</u>					<input checked="" type="checkbox"/> CLEAR
pH, UNITS	<u>7.3</u>					<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	<u>1200</u>					<input type="checkbox"/> COLORED
PUMP RATE, GPM						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING:  PERISTALTIC PUMP,  SUBMERSIBLE PUMP,  BAILER,  PVC/SILICON TUBING,  IN-LINE/DISPOSABLE FILTER,  OTHER

SAMPLING:  PERISTALTIC PUMP,  SUBMERSIBLE PUMP,  BAILER,  PVC/SILICON TUBING,  IN-LINE/DISPOSABLE FILTER,  OTHER

EQUIPMENT ID: ISCO # GRUNDFOS

DECON FLUIDS USED:  POTABLE WATER,  LIQUINOX,  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE,  FLOAT ACTIVATED,  PRESSURE TRANSDUCER

GROUND ELEVATION:         

NUMBER OF FILTERS USED: 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		<u>032691C</u>
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		<u>032691C</u>
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		<u>0528101C</u>
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		<u>0428101C</u>
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		<u>0228101C</u>
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

*Very slow seepage*

SIGNATURE: TU/G-F  
 RECEIVED BY: [Signature]

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PROJECT: USATHAMA-BAAP  
 SITE ID: 511136  
 LOCATION ACTIVITY: START 0945 END 1300

SITE TYPE: WELL  
 JOB NUMBER: 6553-0-  
 PROGRAM: C

SAMPLING DATE: 3/21/92  
 FILE NAME: CGW  
 WEATHER: SUNNY

WATER LEVEL / WELL DATA

WELL DEPTH: 146 FT  
 WATER DEPTH: 149.68 FT  
 HEIGHT OF WATER COLUMN: 116.32 FT  
 PROTECTIVE TOP OF CASING: 1.39 FT  
 PROTECTIVE CASING/WELL DIFF: 0.05 FT  
 RISER ELEVATION: 920.99  
 GROUNDWATER ELEVATION: 776.3  
 WELL DIAMETER: 2 INCH

PURGE DATA

PURGE VOLUME	28 GAL	76 GAL	84 GAL	113 GAL	141 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	12.9	13.2	13.4	13.5	13.6	<input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
PH, UNITS	7.14	7.3	7.0	6.98	6.95	
SPECIFIC CONDUCTIVITY umhos/cm	122	125	126	125	1245	
PUMP RATE, GPM						

EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP  
 SAMPLING:  SUBMERSIBLE PUMP  
 EQUIPMENT ID: ISCO #  
 DECON FLUIDS USED:  POTABLE WATER  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 GROUND ELEVATION:   
 NUMBER OF FILTERS USED: 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				032601C
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				032601C
NIT	YES	H2SO4 TO pH<2	500 ML POLY			032601C
CL	YES	4 DEG C	500 ML POLY			
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC	NO	HCL, 4 DEG C	(3) 40 ML VIAL			042521C
BN/A	NO	4 DEG C	(2) 1 L AG			032601C
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* RESAMPLED ON 4.29.92 AT 1430 FOR TAL METALS AND NIT

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 517451

PROJECT USATHAMA-BAAP

SITE ID 3-5-1-1-1-1-1

LOCATION ACTIVITY START      END     

SITE TYPE WELL

JOB NUMBER 6853-04

PROGRAM C

SAMPLING DATE     

FILE NAME CGW

WEATHER     

### WATER LEVEL / WELL DATA

WELL DEPTH      FT  MEASURED  HISTORICAL

WATER DEPTH      FT

HEIGHT OF WATER COLUMN      FT

TOTAL GAL PURGED      GAL/VOL

PROTECTIVE CASING STICK-UP (FROM GROUND)      FT

PROTECTIVE CASING/WELL DIFF.      FT

WELL INTEGRITY: YES NO N/A

PROT. CASING SECURE

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

RISER ELEVATION     

GROUNDWATER ELEVATION     

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR PPM     

WELL MOUTH PPM     

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ GAL	@ GAL	@ GAL	@ GAL	@ GAL	SAMPLE OBSERVATIONS
TEMP, DEG C						<input type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER						<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm						<input type="checkbox"/> COLORED
PUMP RATE, GPM						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  ISCO #     

SUBMERSIBLE PUMP  GRUNDFOS#     

BAILER  2"  4" #     

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED  POTABLE WATER

LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE

FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION     

NUMBER OF FILTERS USED     

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			733	
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		734	
CL TF8	YES	4 DEG C	500 ML POLY		735	
SO4 108	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		736	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		737	738 739
BN/A UM16	NO	4 DEG C	(2) 1 L AG		740	741
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		742	
DNT UW26	NO	4 DEG C	1 L AG		743	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

4.9.92 H<sub>2</sub>O level measurement indicated that no H<sub>2</sub>O is in well

SIGNATURE: N. Roka

RECEIVED BY: W. M. E. Roka

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE      OF     

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER                     

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID                     

JOB NUMBER 6853-04

SAMPLING DATE 4.12.92

LOCATION ACTIVITY START 0700 END 1000

PROGRAM C

FILE NAME CGW

WEATHER Sunny windy

**WATER LEVEL / WELL DATA**

TOP OF WELL     PROTECTIVE CASING STICK-UP (FROM GROUND) 1.90 FT     PROTECTIVE CASING/WELL DIFF. FLUSH FT

MEASURED     HISTORICAL

WELL DEPTH 91 FT

WATER DEPTH 89.19 FT

HEIGHT OF WATER COLUMN 1.81 FT

WELL INTEGRITY: YES  NO  N/A

PROT. CASING SECURE  CONCRETE COLLAR INTACT  WELL LOCKED  PVC WELL CAP

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS

WELL MATERIAL                     

AMBIENT AIR 0.7 PPM    WELL MOUTH 1.0 PPM

RISER ELEVATION 858.68

GROUNDWATER ELEVATION 769.49

WELL DIAMETER  2 INCH  4 INCH  INCH

**PURGE DATA**

PURGE VOLUME	<u>1.5</u> GAL	GAL	GAL	GAL	GAL
TEMP, DEG C	<u>10</u>				
PH, UNITS <input checked="" type="checkbox"/> PH PAPER	<u>6.0</u>				
SPECIFIC CONDUCTIVITY umhos/cm	<u>512</u>				
PUMP RATE, GPM					

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

EQUIPMENT ID: PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

ISCO #                      GRUNDEOS#                      2"  4" #

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION                     

NUMBER OF FILTERS USED 2

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2				
<input type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY			
<input type="checkbox"/> SC4 TT08	YES	4 DEG C				
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VCC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL			
<input type="checkbox"/> BA/A UM16	NO	4 DEG C	(2) 1 L AG			
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 BAILED (1/2 VOLUME) AND LET RECHARGE OVERNIGHT  
 COLLECTED @ 1000 ON 4-12-92

SIGNATURE: REC 5/11/92  
 RECEIVED BY: Nancy F. Roman

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

51110041

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4/25/12

SITE ID 51110041

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 4/24/12 END 4/25/12 30

PROGRAM C

WEATHER Rain 45

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 3.1 ± FT

PROTECTIVE CASING/WELL DIFF. - 10 FT

WELL DEPTH 51 FT

MEASURED  
 HISTORICAL

WATER DEPTH 51.72 FT

8.5 GAL/VOL (8.5)

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION 515.53

HEIGHT OF WATER COLUMN 5.3 FT

6.25 TOTAL GAL PURGED (42)

GROUNDWATER ELEVATION 261.26

PURGE H2O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  
 2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME

a 3 GAL	a 1 GAL	a 1 GAL	a 1 GAL	a 0.25 GAL
---------	---------	---------	---------	------------

SAMPLE OBSERVATIONS

TEMP, DEG C

9.8	9.6	9.6	9.8	9.6
-----	-----	-----	-----	-----

pH, UNITS  pH PAPER

6.8	7.45	7.35	7.42	7.41
-----	------	------	------	------

SPECIFIC CONDUCTIVITY umhos/cm

685	696	705	712	704
-----	-----	-----	-----	-----

PUMP RATE, GPM

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID

ISCO #  
 GRUNDEPOS# 488#2  
 2"  4" #

DECON FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

210.2

NUMBER OF FILTERS USED 2

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1456	082601C
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1456	020601C
MIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1457	052810.C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1455	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1457	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1458 / 1459 / 1460	0423A.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1463 / 1464	022810.C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MM,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

Purged on 4/24 and 4/25 Sampled on 4/25

SIGNATURE: C. ITH JEL/CP  
 RECEIVED BY: [Signature]



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP  
 SITE ID: 511525  
 LOCATION ACTIVITY: START 4/24 END 4/25 1300

FIELD SAMPLING NUMBER: 11152131  
 SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C

SAMPLING DATE: 4/25/12  
 FILE NAME: CGW  
 WEATHER: Rainy

### WATER LEVEL / WELL DATA

WELL DEPTH: 74.5 FT  
 WATER DEPTH: 51.26 FT  
 HEIGHT OF WATER COLUMN: 25.3 FT  
 MEASURED HISTORICAL:  MEASURED  HISTORICAL  
 TOP OF WELL TOP OF CASING:  TOP OF WELL  TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND): 2.9 FT  
 PROTECTIVE CASING/WELL DIFF.: .15 FT  
 RISER ELEVATION: 813.15  
 GROUNDWATER ELEVATION: 761.59  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE:     
 CONCRETE COLLAR INTACT:     
 WELL LOCKED:     
 PVC WELL CAP:     
 PURGE H2O CONTAINED? VOC DNT NO   
 WELL MATERIAL: PVC  SS   
 AMBIENT AIR: 0 PPM  
 WELL MOUTH: 0 PPM  
 WELL DIAMETER: 2 INCH

### PURGE DATA

PURGE VOLUME	4/24	4/25			
	@ 20 GAL	@ 30 GAL	@ GAL	@ GAL	@ GAL
TEMP, DEG C	10.0	10.7			
pH, UNITS	7.4	7.4			
SPECIFIC CONDUCTIVITY umhos/cm	677	475			
PUMP RATE, GPM					

SAMPLE OBSERVATIONS: CLEAR  CLOUDY  COLCRED  TURBID  COOR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING:  SAMPLING:   
 EQUIPMENT ID: ISCO # \_\_\_\_\_  
 DECON FLUIDS USED: POTABLE WATER  LIQUINOX  STEAM CLEANING   
 WATER LEVEL EQUIP. USED: ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER   
 GROUND ELEVATION: 809.9  
 NUMBER OF FILTERS USED: 2

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL T108	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 \* AFTER ~ 20 GALLONS THE PUMP STARTED PUMPING ALMOST PURE SAND, WHEN THE PUMP WAS SHUT OFF IT FROZE UP (4/24)  
 \* AFTER 30 MIN PUMP FROZE UP (4/25)  
 \* SAMPLED ON 4/25

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# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP  
 SITE ID: 51153  
 LOCATION ACTIVITY: START 0800 END 1000  
 FIELD SAMPLING NUMBER: 511  
 SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C  
 SAMPLING DATE: 28 APR 91  
 FILE NAME: CGW  
 WEATHER: Sunny

### WATER LEVEL / WELL DATA

WELL DEPTH: 140 FT  
 WATER DEPTH: 130.8 FT  
 HEIGHT OF WATER COLUMN: 9.14 FT  
 MEASURED:  HISTORICAL:   
 TOP OF WELL:  TOP OF CASING:   
 PROTECTIVE CASING STICK-UP (FROM GROUND): 1.69 FT  
 PROTECTIVE CASING/WELL DIFF.: -0.11 FT  
 RISER ELEVATION: 968.00  
 GROUNDWATER ELEVATION: 777.14  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE:     
 CONCRETE COLLAR INTACT:     
 WELL LOCKED:     
 PVC WELL CAP:     
 PURGE H<sub>2</sub>O CONTAINED? VOC:  DNT:  NO:   
 WELL MATERIAL: PVC:  SS:   
 AMBIENT AIR: 0.0 PPM  
 WELL MOUTH: 0.0 PPM  
 WELL DIAMETER:  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 15 GAL	@ 30 GAL	@ 45 GAL	@ 60 GAL	@ 75 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	11.1	11.4	11.4	11.5	11.5	<input type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER	7.3	7.3	7.3	7.3	7.3	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	561	612	622	624	627	<input type="checkbox"/> COLORED
PUMP RATE, GPM						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP  
 EQUIPMENT ID: ISCO #  
 DECON FLUIDS USED:  POTABLE WATER  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 GROUND ELEVATION: 965.2  
 SUBMERSIBLE PUMP:  GRUNDEOS #  
 LIQUINOX  
 BAILER:  2"  4" #  
 STEAM CLEANING  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER: \_\_\_\_\_  
 NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		0326401C
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		0326401C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	114	0326401C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	112	0326401C
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input type="checkbox"/>		
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>	113	042701C
NG 99	NO	4 DEG C	1 L AG	<input type="checkbox"/>	112	0326401C
NAM UN06	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

END PURGING at 0915

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# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

511471

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID 511471

JOB NUMBER 6853-04

SAMPLING DATE 4/26/92

LOCATION ACTIVITY START 0800 END 1000

PROGRAM C

FILE NAME CGW

WEATHER RAIN 40%

### WATER LEVEL / WELL DATA

WELL DEPTH 73 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.65 FT

PROTECTIVE CASING/WELL DIFF. -0.35 FT

WATER DEPTH 54.70 FT

48 GAL/VOL (47.5)

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION 517.14

HEIGHT OF WATER COLUMN 18.30 FT

2.10 TOTAL GAL PURGED (238)

GROUNDWATER ELEVATION 762.44

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0.0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME

@ 48 GAL @ 96 GAL @ 144 GAL @ 192 GAL @ 240 GAL

SAMPLE OBSERVATIONS

TEMP, DEG C

pH, UNITS  pH PAPER

SPECIFIC CONDUCTIVITY umhos/cm

PUMP RATE, GPM

9.7	9.5	9.5	9.5	9.5
7.2	7.6	7.6	7.6	7.6
648	644	653	648	648

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 COOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO #  
 GRUNDEOS#  
 2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION ~ 517.14

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2			1420	032660C
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2			1420	032660C
<input type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1421	052810C
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		1422	
<input type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1423	
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL		1424	1425
<input type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG		1427	1428
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG		1429	
<input type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG		1430	
<input type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG		1431	
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, S9, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

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# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP

SITE ID: 51148

LOCATION ACTIVITY: START 1330 END 1500

FIELD SAMPLING NUMBER: 11148

SITE TYPE: WELL

JOB NUMBER: 6853-04

PROGRAM: C

SAMPLING DATE: 4/24/92

FILE NAME: CGW

WEATHER: RAIN 45°F

### WATER LEVEL / WELL DATA

WELL DEPTH: 59 FT

WATER DEPTH: 41.52 FT

HEIGHT OF WATER COLUMN: 17.48 FT

MEASURED  HISTORICAL

TOP OF WELL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 1.4 FT

PROTECTIVE CASING/WELL DIFF.: -0.03 FT

WELL INTEGRITY: YES  NO  N/A

PROT. CASING SECURE

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

RISER ELEVATION: 305.69

GROUNDWATER ELEVATION: 762.08

PURGE H<sub>2</sub>O CONTAINED? VCC  DNT  NO

WELL MATERIAL: PVC  SS

AMBIENT AIR: 0 PPM

WELL MOUTH: 0 PPM

WELL DIAMETER:  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	<u>27</u> GAL	<u>56</u> GAL	<u>84</u> GAL	<u>112</u> GAL	<u>14</u> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.1</u>	<u>10.2</u>	<u>10.4</u>	<u>10.2</u>	<u>10.4</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.4</u>	<u>7.4</u>	<u>7.5</u>	<u>7.4</u>	<u>7.4</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>773</u>	<u>763</u>	<u>751</u>	<u>751</u>	<u>753</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP

SUBMERSIBLE PUMP

BAILER

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

EQUIPMENT ID: ISCO # \_\_\_\_\_

GRUNDFOS #  2"  4" # \_\_\_\_\_

DECON FLUIDS USED: POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED: ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION: ~799.5

NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1422</u>	<u>103260X</u>
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1422</u>	<u>1032601C</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1425</u>	<u>10528101C</u>
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1454</u>	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1421</u>	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>1436</u> / <u>1457</u> / <u>1425</u>	<u>10428701C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>1421</u> / <u>1440</u>	<u>1028701C</u>
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>1441</u>	
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>1442</u>	
DNT UM26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>1443</u>	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

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# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

51149

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SAMPLING DATE: 4.25.92

SITE ID: 51149

JOB NUMBER: 6853-04

FILE NAME: CGW

LOCATION ACTIVITY: START 1400 END 1530

PROGRAM: C

WEATHER: Cloudy 40's

### WATER LEVEL / WELL DATA

WELL DEPTH: 63 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 1.2 FT

PROTECTIVE CASING/WELL DIFF.: 0.1 FT

WATER DEPTH: 44.65 FT

30 GAL/VOL

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION: 267.99

HEIGHT OF WATER COLUMN: 18.4 FT

150 TOTAL GAL PURGED

GROUNDWATER ELEVATION: 262.99

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR: 0.0 PPM

WELL MOUTH: 0.0 PPM

WELL DIAMETER:  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	@ 30 GAL	@ 60 GAL	@ 90 GAL	@ 120 GAL	@ 150 GAL
TEMP, DEG C	10.0	9.7	9.6	9.8	9.7
pH, UNITS <input type="checkbox"/> pH PAPER	7.54	7.83	7.76	7.72	7.74
SPECIFIC CONDUCTIVITY umhos/cm	590	591	582	587	589
PUMP RATE, GPM	540.4				

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 COOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID: PERISTALTIC PUMP, SUBMERSIBLE PUMP, BAILER, PVC/SILICON TUBING, IN-LINE/DISPOSABLE FILTER, OTHER

EQUIPMENT ID: ISCO #, GRUNDEOS # ABB#2, 2" 4" #

DECON FLUIDS USED:  POTABLE WATER,  LIQUINOX,  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE,  FLOAT ACTIVATED,  PRESSURE TRANSDUCER

GROUND ELEVATION: 262.99

NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	H2SO4 TO pH<2	500 ML POLY			
CL	YES	4 DEG C	500 ML POLY			
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 340 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 340 ML VIAL			
BN/A	NO	4 DEG C	(2) 1 L AG			
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)

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# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

11150

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.14.92

SITE ID 51150

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1545 END 1630

PROGRAM C

WEATHER cloudy, 30°

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 19 FT  
 PROTECTIVE CASING/WELL DIFF. 05 FT  
 WELL DEPTH 130 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 120.83 FT  
 RISER ELEVATION 877.50  
 HEIGHT OF WATER COLUMN 9 FT  
 19 GAL/VOL  
 15  
 TOTAL GAL PURGED 75  
 75  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 GROUNDWATER ELEVATION 776.67  
 PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR — PPM  
 WELL MOUTH — PPM  
 WELL DIAMETER  2 INCH  
 4 INCH  
 1 INCH

### PURGE DATA

PURGE VOLUME	15 GAL	30 GAL	45 GAL	60 GAL	75 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	10.0	10.6	10.6	10.6	10.7	<input checked="" type="checkbox"/> CLEAR
PH, UNITS <input type="checkbox"/> PH PAPER	7.9	7.4	7.4	7.4	7.4	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	506	505	506	508	506	<input type="checkbox"/> COLORED
PUMP RATE, GPM	2.8					<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
 BAILER  GRUNDFOS# 2  
 PVC/SILICON TUBING  2"  4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 893.1  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	SS16	YES HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	SS16	YES HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	YES HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	YES HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	SB03	YES HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	SD24	YES HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	SS16	YES HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	SS16	YES HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	USEPA 130.2	YES HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT	TF10	YES H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		0528101C
CL	TT08	YES 4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		0528101C
SO4	TT08	YES 4 DEG C		<input checked="" type="checkbox"/>		
ALK	USEPA 310.1	NO 4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS	USEPA 160.1	NO 4 DEG C		<input checked="" type="checkbox"/>		
TCC	USEPA 415.1	NO H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	USEPA 350.2	NO H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		0528101C
VOC	Um33	NO HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1614 1615 1616	0528101C
BN/A	UM16	NO 4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG	99	NO 4 DEG C	1 L AG	<input checked="" type="checkbox"/>		0528101C
NAM	UN06	NO 4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	UW26	NO 4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	USEPA 418.1	NO H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

**OTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: [Signature]  
 RECEIVED BY: Nancy F. Rotter

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.8.92

SITE ID

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1030 END 1100

PROGRAM C

WEATHER Sunny, 50°

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 1.85 FT

TOP OF CASING

PROTECTIVE CASING/WELL DIFF. -12 FT

WELL DEPTH 134 FT

MEASURED  HISTORICAL

WATER DEPTH 115.40 FT

WELL INTEGRITY: YES NO N/A

PROT. CASING SECURE

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

HEIGHT OF WATER COLUMN 18.5 FT

31 GAL/VOL

157 TOTAL GAL PURGED

RISER ELEVATION

GROUNDWATER ELEVATION

PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ <u>31</u> GAL	@ <u>62</u> GAL	@ <u>93</u> GAL	@ <u>124</u> GAL	@ <u>157</u> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11.3</u>	<u>11.0</u>	<u>10.9</u>	<u>10.9</u>	<u>11.0</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.8</u>	<u>7.6</u>	<u>7.6</u>	<u>7.9</u>	<u>7.6</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>466</u>	<u>473</u>	<u>482</u>	<u>490</u>	<u>491</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_

SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_

BAILER  GRUNDFOS # \_\_\_\_\_

PVC/SILICON TUBING  2"  4" # \_\_\_\_\_

IN-LINE/DISPOSABLE FILTER  \_\_\_\_\_

OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE

FLOAT ACTIVATED PRESSURE TRANSDUCER

GROUND ELEVATION 590.5

NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		<u>0222801C</u>
<input type="checkbox"/> NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		<u>0222801C</u>
<input type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		<u>052801C</u>
<input type="checkbox"/> CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input type="checkbox"/> TCC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> VCC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>		<u>0512301C</u>
<input type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
<input type="checkbox"/> NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input type="checkbox"/> NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input type="checkbox"/> DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

SIGNATURE: VM/CK

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PAGE      OF     

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER GRAF

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID GRAF

JOB NUMBER 6853-0-

SAMPLING DATE 4.7.92

LOCATION ACTIVITY START 1430 END 1515

PROGRAM C

FILE NAME CGW

WEATHER prt. cloudy 50%

WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 MEASURED  
 HISTORICAL  
 PROTECTIVE CASING STICK-UP (FROM GROUND)      FT.  
 PROTECTIVE CASING/WELL DIFF.      FT.  
 WELL DEPTH      FT.  
 WATER DEPTH      FT.  
 HEIGHT OF WATER COLUMN      FT.  
 GAL/VOL       
 TOTAL GAL PURGED       
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  
 PVC WELL CAP  YES  NO  
 RISER ELEVATION       
 GROUNDWATER ELEVATION       
 WELL DIAMETER  2 INCH  4 INCH  INCH  
 PURGE  VCC  DNT  NO  PVC  SS  
 AMBIENT AIR PPM:      WELL MOUTH PPM:     

PURGE DATA

PURGE VOLUME	<u>15 min</u> GAL	GAL	GAL	GAL	GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	<u>17.1</u>	<u>17.0</u>	<u>17.0</u>	<u>17.0</u>	<u>17.0</u>	<input type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.30</u>	<u>7.31</u>				<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	<u>637</u>					<input type="checkbox"/> COLORED
PUMP RATE, GPM						<input type="checkbox"/> TURBID
						<input type="checkbox"/> CDCR
						<input type="checkbox"/> OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID      DECON FLUIDS USED   
 SUBMERSIBLE PUMP  ISCO #      POTABLE WATER   
 BAILER  GRUNDFOS#      LIGHTNOX   
 PVC/SILICON TUBING  2" 1/4" # STEAM CLEANING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER  NUMBER OF FILTERS USED       
 WATER LEVEL EQUIP. USED  GROUND ELEVATION       
 ELECTRIC COND. PROBE   
 FLOAT ACTIVATED   
 PRESSURE TRANSDUCER

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	<u>3061</u>	<u>022280C</u>
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>3061</u>	<u>022280C</u>
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>3061</u>	<u>022280C</u>
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>3061</u>	<u>050810C</u>
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>3063</u>	
<input checked="" type="checkbox"/> SC4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>3064</u>	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	<u>3065</u>	<u>042870C</u>
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>3068</u>	<u>022810C</u>
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>3071</u>	
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>3070</u>	
<input checked="" type="checkbox"/> D.T. UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>3072</u>	
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

Start 14:20 M. Graf says depth to 115'  
 end 15:00 Sandpoint well - 2" diameter (plus) diameter pipe

SIGNATURE: [Signature]  
 RECEIVED BY: Nancy E. Roten



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PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**SCHAEFER**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **SCHAEFER**

JOB NUMBER **6853-04**

SAMPLING DATE **4.9.92**

LOCATION ACTIVITY START **1530** END **1615**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **part. cloudy, D's**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) \_\_\_\_\_ FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. \_\_\_\_\_ FT  
 WELL DEPTH \_\_\_\_\_ FT  MEASURED  HISTORICAL  
 WATER DEPTH \_\_\_\_\_ FT  
 HEIGHT OF WATER COLUMN \_\_\_\_\_ FT  
 GAL/VOL \_\_\_\_\_  
 TOTAL GAL PURGED \_\_\_\_\_  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  UNT  NO  WELL MATERIAL  PVC  SS  
 AMBIENT AIR PPM \_\_\_\_\_ WELL MOUTH PPM \_\_\_\_\_  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 15 min GAL	@ _____ GAL	@ _____ GAL	@ _____ GAL	@ _____ GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	<b>10.9</b>					<input type="checkbox"/> CLEAR
PH, UNITS <input type="checkbox"/> PH PAPER	<b>8.14</b>					<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	<b>520</b>					<input type="checkbox"/> COLORED
PUMP RATE, GPM						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING  EQUIPMENT ID **ISCO # \_\_\_\_\_** DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION \_\_\_\_\_  
 NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		1816	0222801C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1816	0222801C
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1816	0222801C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1817	0528101C
CL TT08	YES	4 DEG C	500 ML POLY		1818	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1819	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		1820	0128701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1823	0222101C
NG 99	NO	4 DEG C	1 L AG		1825	
NAM UN06	NO	4 DEG C	1 L AG		1826	
DNT UW26	NO	4 DEG C	1 L AG		1827	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

Start **15:15**  
 End **15:45**

took sample @ end of hose  
 1 lit vol water stand in a capped  
 bottle for about 3min bc water

SIGNATURE: *J. Currah*

RECEIVED BY: *Nancy E. R...*

has alot of bubbles (Ray. Olin suggested  
 that I might get a better vol sample  
 that way.

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SPEAR 1**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **SPEAR**

JOB NUMBER **6853-04**

SAMPLING DATE **4.9.92**

LOCATION ACTIVITY **START 1630 END 1715**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **prt. cloudy, 50's**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) \_\_\_\_\_ FT  
 PROTECTIVE CASING/WELL DIFF \_\_\_\_\_ FT  
 WELL DEPTH \_\_\_\_\_ FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH \_\_\_\_\_ FT  
 HEIGHT OF WATER COLUMN \_\_\_\_\_ FT  
 GAL/VOL \_\_\_\_\_  
 TOTAL GAL PURGED \_\_\_\_\_  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR \_\_\_\_\_ PPM  
 WELL MOUTH \_\_\_\_\_ PPM  
 WELL DIAMETER  2 INCH  4 INCH  \_\_\_\_\_ INCH

### PURGE DATA

PURGE VOLUME	@ 15 ml/GAL	@ _____ GAL	@ _____ GAL	@ _____ GAL	@ _____ GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	11.1					<input type="checkbox"/> CLEAR
PH, UNITS <input type="checkbox"/> PH PAPER	7.75					<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	650					<input type="checkbox"/> COLORED
PUMP RATE, GPM						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_  
 BAILER  GRUNDEFS# \_\_\_\_\_  
 PVC/SILICON TUBING  2"  4"  
 IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUOR  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION \_\_\_\_\_  
 NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1828	0222501C
CA	SS16	YES	HNO3 TO pH<2			
NA	SS16	YES	HNO3 TO pH<2			
CD	SS16	YES	HNO3 TO pH<2			
CR	SS16	YES	HNO3 TO pH<2			
HG	SB03	YES	HNO3 TO pH<2			
PB	SD24	YES	HNO3 TO pH<2			
NI	SS16	YES	HNO3 TO pH<2			
BA	SS16	YES	HNO3 TO pH<2			
HARD	USEPA 130.2	YES	HNO3 TO pH<2		1828	0222501C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	1829	0222501C
CL	TT08	YES	4 DEG C	500 ML POLY	1830	
SO4	TT08	YES	4 DEG C			
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	1831	
TDS	USEPA 160.1	NO	4 DEG C			
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	1832	0423701C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	1833	0222501C
NG	99	NO	4 DEG C	1 L AG	1834	
NAM	UN06	NO	4 DEG C	1 L AG		
DNT	UW26	NO	4 DEG C	1 L AG	1835	0222501C
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	1836	

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

Start 15:55 took sample  
 end 16:30 from faucet  
 in well house

SIGNATURE: *J. L. Cunniff*  
 RECEIVED BY: *Wendy E. Rosta*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**PREMO**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **PREMO**

JOB NUMBER **6853-04**

SAMPLING DATE **4.7.92**

LOCATION ACTIVITY **START 1330 END 1415**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **prt. cloudy, 50%**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) \_\_\_\_\_ FT  
 PROTECTIVE CASING/WELL DIFF \_\_\_\_\_ FT  
 MEASURED  
 HISTORICAL  
 WELL DEPTH \_\_\_\_\_ FT  
 WATER DEPTH \_\_\_\_\_ FT  
 HEIGHT OF WATER COLUMN \_\_\_\_\_ FT  
 GAL/VOL \_\_\_\_\_  
 TOTAL GAL PURGED \_\_\_\_\_  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  RO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR PPM \_\_\_\_\_  
 WELL MOUTH PPM \_\_\_\_\_  
 WELL DIAMETER  2 INCH  4 INCH  INCH  
 RISER ELEVATION \_\_\_\_\_  
 GROUNDWATER ELEVATION \_\_\_\_\_

### PURGE DATA

PURGE VOLUME: 20 GAL  
 TEMP, DEG C: 10.0  
 pH, UNITS: 7.81  
 SPECIFIC CONDUCTIVITY  $\mu$ mos/cm: 740  
 PUMP RATE, GPM: \_\_\_\_\_  
 SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP \_\_\_\_\_  
 SUBMERSIBLE PUMP \_\_\_\_\_  
 BAILER \_\_\_\_\_  
 PVC/SILICON TUBING \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDEOS# 2" 4" #  
 DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION \_\_\_\_\_  
 NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2	1 L POLY	<input type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2		<input type="checkbox"/>		
CA SS16	YES	HNO <sub>3</sub> TO pH<2		<input type="checkbox"/>	1804	0222801C
NA SS16	YES	HNO <sub>3</sub> TO pH<2		<input type="checkbox"/>	1804	0222801C
CD SS16	YES	HNO <sub>3</sub> TO pH<2		<input type="checkbox"/>		
CR SS16	YES	HNO <sub>3</sub> TO pH<2		<input type="checkbox"/>		
HG SB03	YES	HNO <sub>3</sub> TO pH<2		<input type="checkbox"/>		
PB SD24	YES	HNO <sub>3</sub> TO pH<2		<input type="checkbox"/>		
NI SS16	YES	HNO <sub>3</sub> TO pH<2		<input type="checkbox"/>		
BA SS16	YES	HNO <sub>3</sub> TO pH<2		<input type="checkbox"/>		
HARD USEPA 130.2	YES	HNO <sub>3</sub> TO pH<2		<input type="checkbox"/>	1804	0222801C
NIT TF10	YES	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY	<input type="checkbox"/>	1805	0222801C
CL TT08	YES	4 DEG C	500 ML POLY	<input type="checkbox"/>	1806	
SO <sub>4</sub> TT08	YES	4 DEG C		<input type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>	1807	
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
TOC USEPA 415.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
NH <sub>3</sub> N USEPA 350.2	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input type="checkbox"/>	1808 / 1809 / 1810	0423701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>	1811 / 1812	0128101C
NG 99	NO	4 DEG C	1 L AG	<input type="checkbox"/>	1813	
NAM UN06	NO	4 DEG C	1 L AG	<input type="checkbox"/>	1814	
DNT UW25	NO	4 DEG C	1 L AG	<input type="checkbox"/>	1815	
TPH USEPA 413.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	1 L GWM	<input type="checkbox"/>		

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

Start 1315 took sample from  
 End 1415 outdoor pump

SIGNATURE: *[Signature]*  
 RECEIVED BY: *[Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SPN2905B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.24.92

SITE ID SPN-89-05B

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1000 END 1200

PROGRAM C

WEATHER Cloudy, 40's

### WATER LEVEL / WELL DATA

WELL DEPTH 90 FT MEASURED  TOP OF WELL  HISTORICAL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.7 FT

PROTECTIVE CASING/WELL DIFF. - 22 FT

WATER DEPTH 41.2 FT

WELL INTEGRITY: YES NO N/A

RISER ELEVATION 804.02

HEIGHT OF WATER COLUMN 48.88 FT

WELL MATED: 45 GAL/VOL (45)

PROT. CASING SECURE

CONCRETE COLLAR INTACT

GROUNDWATER ELEVATION 62.90

TOTAL GAL PURGED 224

WELL LOCKED

PVC WELL CAP

PURGE H<sub>2</sub>O CONTAINED? VOC  DNT  NO

WELL MATERIAL PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER 2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	2.5 GAL	90 GAL	135 GAL	180 GAL	224 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.3	9.6	9.6	9.6	9.6	
pH, UNITS <input type="checkbox"/> pH PAPER	7.6	7.5	7.5	7.5	7.5	
SPECIFIC CONDUCTIVITY umhos/cm	529	533	534	536	535	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID

SUBMERSIBLE PUMP  ISCO #

BAILER  GRUNDEOS#

PVC/SILICON TUBING  2"  4" #

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED  POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

GROUND ELEVATION 801.6

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1264	022201C
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1264	022201C
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1265	022201C
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1266	
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1267	
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1268	022201C
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1271	022201C
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1273	
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1274	
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1275	
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CO, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: CK/TH  
 RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

DBM8901

PROJECT USATHAMA-BAAP

SITE TYPE WELL

4-13-92

SITE ID DBM-89-011

JOB NUMBER 6853-04

SAMPLING DATE 4-13-92

LOCATION ACTIVITY START 07:15 END 10:00

PROGRAM C

FILE NAME CG

WEATHER cloudy

### WATER LEVEL / WELL DATA

WELL DEPTH 127 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.6 FT

PROTECTIVE CASING/WELL DIFF. -.21 FT

WATER DEPTH 115.83 FT

19 GAL/VOL  
92 TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION 275.99

GROUNDWATER ELEVATION 780.16

HEIGHT OF WATER COLUMN ~11 FT

PURGE H<sub>2</sub>O CONTAINERS  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	<u>@ 19</u> GAL	<u>@ 38</u> GAL	<u>@ 57</u> GAL	<u>@ 76</u> GAL	<u>@ 92</u> GAL
TEMP, DEG C	<u>10.7</u>	<u>11.4</u>	<u>11.6</u>	<u>11.2</u>	<u>11.3</u>
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.4</u>	<u>7.7</u>	<u>7.8</u>	<u>7.9</u>	<u>8.0</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>439</u>	<u>454</u>	<u>445</u>	<u>442</u>	<u>444</u>
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID ISCO #       
 GROUND #       
 2"  4" #     

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 893.6

NUMBER OF FILTERS USED     

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	<u>801</u>	<u>032601C</u>
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CO SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>801</u>	<u>032601C</u>
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>802</u>	<u>032601C</u>
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>	<u>803</u>	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>804</u>	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM.33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>805</u>	<u>032601C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>806</u>	<u>032601C</u>
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>807</u>	<u>032601C</u>
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>808</u>	<u>032601C</u>
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>809</u>	<u>032601C</u>
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	<u>810</u>	<u>032601C</u>
				<input checked="" type="checkbox"/>	<u>811</u>	<u>032601C</u>

### NOTES

PP METALS (AG, AS, BE, CO, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/VA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CO, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/VA:ICP)

SIGNATURE: Vm/ck  
 RECEIVED BY: Wancy E. Port

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER DBN 8902A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID DBN-89-02A

JOB NUMBER 6853-04

SAMPLING DATE 4.13.92

LOCATION ACTIVITY START 1400 END 1445

PROGRAM C

FILE NAME CGW

WEATHER cloudy, 30°s

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING  
 TOP OF CASING CASING STICK-UP (FROM GROUND) 2.3 FT  
 MEASURED PROTECTIVE CASING/WELL DIFF. 118 FT  
 HISTORICAL  
 WELL DEPTH 122 FT  
 WATER DEPTH 110.05 FT  
 RISER ELEVATION 887.10  
 HEIGHT OF WATER COLUMN 12 FT  
20 GAL/VOL  
100 TOTAL GAL PURGED  
 WELLS INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 GROUNDWATER ELEVATION 777.05  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 AMBIENT AIR — PPM  
 WELL MOUTH — PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	20 GAL	40 GAL	60 GAL	80 GAL	100 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11.0</u>	<u>11.6</u>	<u>11.7</u>	<u>11.7</u>	<u>11.8</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.6</u>	<u>7.59</u>	<u>7.5</u>	<u>7.6</u>	<u>7.6</u>	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>515</u>	<u>513</u>	<u>514</u>	<u>514</u>	<u>511</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDEOS# 3  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 884.8  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		812	0326601C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			812	0326601C
NI T F10	YES	H2SO4 TO pH<2	500 ML POLY		813	0326601C
CL T T08	YES	4 DEG C	500 ML POLY		814	
SO4 T T08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		815	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL		816	0422701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		819	0278101C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		821	0278101C
DNT UW26	NO	4 DEG C	1 L AG		822	
J TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: [Signature]  
 RECEIVED BY: Wancy E. Porter

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **DBN8702B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4-13-92**

SITE ID **DBN-87-02B**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1500 END 1630**

PROGRAM **C**

WEATHER **cloudy, 30's**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.15** FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. **02** FT

WELL DEPTH **152** FT  MEASURED  HISTORICAL

WATER DEPTH **110.05** FT

HEIGHT OF WATER COLUMN: **41.95** FT

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION **886.90**

GROUNDWATER ELEVATION **776.85**

PURGE H2O CONTAINED?  VOC  DNT  NO  PVC  SS

WELL MATERIAL  PVC  SS

AMBIENT AIR  PPM WELL MOUTH  PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	a 40 GAL	a 80 GAL	a 120 GAL	a 160 GAL	a 200 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	11.3	11.5	11.5	11.5	11.4	
pH, UNITS <input type="checkbox"/> pH PAPER	7.57	7.8	7.5	7.72	7.5	
SPECIFIC CONDUCTIVITY umhos/cm	372	373	373	374	374	
PUMP RATE, GPM	2.9					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID  PERISTALTIC PUMP ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP GRUNDOS# **X**  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION **884.8**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	823 / / /	032601C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	823 / / /	032601C
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	824 / / /	032801C
S04	YES	4 DEG C		<input checked="" type="checkbox"/>	825 / / /	
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	826 / / /	
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>	/ / /	
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>	/ / /	
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	/ / /	
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	827 / 828 / 829	042801C
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	850 / 831	022801C
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	/ / /	
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	832 / / /	022801C
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	833 / / /	
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	/ / /	

NOTES PP METALS (AG, AS, BE, CO, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CO, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *John [Signature]*  
 RECEIVED BY: *Nancy E. [Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **DBM 8903**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **DBM-189-031**

JOB NUMBER **6853-04**

SAMPLING DATE **4-11-92**

LOCATION ACTIVITY **START 1530 END 1630**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **cloudy, 50's**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.4** FT  
 TOP OF CASING  
 MEASURED  
 HISTORICAL  
 PROTECTIVE CASING/WELL DIFF. **.15** FT  
 WELL DEPTH **135.5** FT  
 WATER DEPTH **121.81** FT  
 HEIGHT OF WATER COLUMN **14** FT  
 RISER ELEVATION **892.85**  
 GROUNDWATER ELEVATION **777.04**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 AMBIENT AIR **0** PPM WELL MOUTH **0** PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 25 GAL	@ 50 GAL	@ 75 GAL	@ 100 GAL	@ 125 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	10.8	11.3	11.4	11.4	11.3	
PH, UNITS <input type="checkbox"/> pH PAPER	7.6	7.3	7.30	7.3	7.43	
SPECIFIC CONDUCTIVITY umhos/cm	455	466	464	464	472	
PUMP RATE, GPM	2.8					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS# **Y**  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION **896.4**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		834 /	032601C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			834 /	1052601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		835 /	032601C
CL TT08	YES	4 DEG C	500 ML POLY		836 /	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		837 /	
TCS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL		838 / 839 / 840	0428701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		841 / 842	0228101C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		843 /	0228101C
DNT UW26	NO	4 DEG C	1 L AG		844 /	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *J. Pearson / DL*  
 RECEIVED BY: *Nancy E. Pota*



# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

DBN 89046

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID DBN-89-046

JOB NUMBER 6853-04

SAMPLING DATE 4-10-72

LOCATION ACTIVITY START 0715 END 1030

PROGRAM C

FILE NAME CGW

WEATHER clear, 40°C

### WATER LEVEL / WELL DATA

WELL DEPTH 189.5 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.4 FT

PROTECTIVE CASING/WELL DIFF. 0.20 FT

WATER DEPTH 143.4 FT

40 GAL/VOL

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
PVC WELL CAP

YES NO N/A

RISER ELEVATION 920.14

HEIGHT OF WATER COLUMN 46 FT

200 TOTAL GAL PURGED

GROUNDWATER ELEVATION 776.73

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR \_\_\_\_\_ PPM

WELL MOUTH \_\_\_\_\_ PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 1 INCH

### PURGE DATA

PURGE VOLUME	@ 40 GAL	@ 80 GAL	@ 120 GAL	@ 160 GAL	@ 200 GAL
TEMP, DEG C	11.4	11.9	12.0	11.9	12.0
PH, UNITS <input type="checkbox"/> PH PAPER	5.0	7.4	7.3	7.4	7.4
SPECIFIC CONDUCTIVITY umhos/cm	517	518	512	517	505
PUMP RATE, GPM	3.8				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLCRED  
 TURBID  
 COOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING	SAMPLING	EQUIPMENT ID	DECON FLUIDS USED	WATER LEVEL EQUIP. USED	GROUND ELEVATION
<input type="checkbox"/>	<input checked="" type="checkbox"/>	PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER _____	<input checked="" type="checkbox"/> POTABLE WATER <input type="checkbox"/> LIQUINOX <input type="checkbox"/> STEAM CLEANING	<input checked="" type="checkbox"/> ELECTRIC COND. PROBE <input type="checkbox"/> FLOAT ACTIVATED <input type="checkbox"/> PRESSURE TRANSDUCER	917.7
		EQUIPMENT ID ISCO # GRUNDEOS# 2 2" 4" #			
			NUMBER OF FILTERS USED 1		

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	856	012289.C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	856	012289.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	857	012289.C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	858	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>	859	
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input type="checkbox"/>	860	012289.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>	863 / 864	012289.C
NG 99	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input type="checkbox"/>	865	012289.C
DNT UM26	NO	4 DEG C	1 L AG	<input type="checkbox"/>	866	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]*  
RECEIVED BY: *[Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**D B M 3 9 1 0 5**

PROJECT: **USATHAMA-BAAP**

SITE TYPE: **WELL**

SITE ID: **D B M - 8 9 1 - 0 5**

JOB NUMBER: **6853-04**

SAMPLING DATE: **4.11.92**

LOCATION ACTIVITY: **START 1430 END 1530**

PROGRAM: **C**

FILE NAME: **CGW**

WEATHER: **cloudy, 50's**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND): **24** FT  
 PROTECTIVE CASING/WELL DIFF.: **.12** FT  
 WELL DEPTH: **129.5** FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH: **116.68** FT  
 RISER ELEVATION: **900.43**  
 HEIGHT OF WATER COLUMN: **13** FT  
 20 GAL/VOL  
 22  
 WELL INTEGRITY:  
 PROT. CASING SECURE:  YES  NO  N/A  
 CONCRETE COLLAR INTACT:  YES  NO  N/A  
 WELL LOCKED:  YES  NO  N/A  
 PVC WELL CAP:  YES  NO  N/A  
 TOTAL GAL PURGED: **100**  
 GROUNDWATER ELEVATION: **78375**  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL:  PVC  SS  
 AMBIENT AIR - PPM: \_\_\_\_\_  
 WELL MOUTH - PPM: \_\_\_\_\_  
 WELL DIAMETER:  2 INCH  4 INCH  \_\_\_\_\_ INCH

### PURGE DATA

PURGE VOLUME	@ 20 GAL	@ 70 GAL	@ 60 GAL	@ 90 GAL	@ 100 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	11.5	11.7	11.8	11.7	11.7	
pH, UNITS <input type="checkbox"/> pH PAPER	7.60	7.47	7.55	7.57	7.50	
SPECIFIC CONDUCTIVITY umhos/cm	486	488	488	487	488	
PUMP RATE, GPM	2.9					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 EQUIPMENT ID: ISCO # \_\_\_\_\_  
 DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION: **897.9**  
 NUMBER OF FILTERS USED: **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		867 / / /	0326501C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			867 / / /	0326501C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		866 / / /	0326501C
CL TT08	YES	4 DEG C	500 ML POLY		869 / / /	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		870 / / /	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL		871 / 872 / 873	0128701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		874 / 875	0128701C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		876 / / /	022701C
DNT UW26	NO	4 DEG C	1 L AG		877 / / /	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]*  
 RECEIVED BY: *Nancy E. Rotter*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **DBM8201**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **DBM-82-01**

JOB NUMBER **6853-04**

SAMPLING DATE **4/1/02**

LOCATION ACTIVITY **START 0915 END 1030**

PROGRAM **C**

FILE NAME **CG**

WEATHER **rainy, 40°**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **1.8** FT.  TOP OF CASING PROTECTIVE CASING/WELL DIFF.  FT.

WELL DEPTH **175.5** FT.  MEASURED  HISTORICAL

WATER DEPTH **141.72** FT.  MEASURED  HISTORICAL

HEIGHT OF WATER COLUMN **34** FT. **50** GAL/VOL **50**

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION **918.72**

GROUNDWATER ELEVATION **777.00**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS

AMBIENT AIR  PPM WELL MOUTH  PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 50 GAL	@ 100 GAL	@ 150 GAL	@ 200 GAL	@ 250 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURSID <input type="checkbox"/> CCCR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>11.4</b>	<b>11.9</b>	<b>11.9</b>	<b>11.9</b>	<b>12.0</b>	
pH, UNITS <input type="checkbox"/> pH PAPER	<b>7.4</b>	<b>7.2</b>	<b>7.1</b>	<b>7.2</b>	<b>7.2</b>	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<b>551</b>	<b>511</b>	<b>502</b>	<b>453</b>	<b>474</b>	
PUMP RATE, GPM	<b>2.8</b>					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID **ISCO #**

SAMPLING  SUBMERSIBLE PUMP **GRUNDFOS #**

BAILER  2"  4" #

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION **917.0**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		<b>757</b> / /	<b>07225010</b>
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			/ /	/
CA	YES	HNO3 TO pH<2			/ /	/
NA	YES	HNO3 TO pH<2			/ /	/
CD	YES	HNO3 TO pH<2			/ /	/
CR	YES	HNO3 TO pH<2			/ /	/
HG	YES	HNO3 TO pH<2			/ /	/
PB	YES	HNO3 TO pH<2			/ /	/
NI	YES	HNO3 TO pH<2			/ /	/
BA	YES	HNO3 TO pH<2			/ /	/
HARD	YES	HNO3 TO pH<2			<b>757</b> / /	<b>07225010</b>
NIT	YES	H2SO4 TO pH<2	500 ML POLY		<b>758</b> / /	<b>07225010</b>
CL	YES	4 DEG C	500 ML POLY		<b>759</b> / /	/
SO4	YES	4 DEG C			/ /	/
ALK	NO	4 DEG C	500 ML POLY		<b>760</b> / /	/
TDS	NO	4 DEG C			/ /	/
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL		/ /	/
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY		/ /	/
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		<b>761</b> / <b>762</b> / <b>763</b>	<b>07225010</b>
BN/A	NO	4 DEG C	(2) 1 L AG		<b>764</b> / <b>765</b>	<b>07225010</b>
NG	NO	4 DEG C	1 L AG		/ /	/
NAM	NO	4 DEG C	1 L AG		<b>766</b> / /	<b>07225010</b>
DNT	NO	4 DEG C	1 L AG		<b>767</b> / /	/
TPH	NO	H2SO4 TO pH<2	1 L GWM		/ /	/

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

pump silted up during purging - cleaned out twice

SIGNATURE: *J. [Signature]*

RECEIVED BY: *Wendy E. [Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER D18M8121012

PROJECT: USATHAMA-BAAP  
 SITE ID: D18M-82-012  
 LOCATION ACTIVITY: START 0800 END 0700

SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C

SAMPLING DATE: 4-11-72  
 FILE NAME: CGW  
 WEATHER: rain/40'S  
(16.124)

### WATER LEVEL / WELL DATA

WELL DEPTH: 158 FT.  MEASURED  HISTORICAL  
 WATER DEPTH: 139.77 FT.  TOP OF WELL  TOP OF CASING  
 HEIGHT OF WATER COLUMN: 18 FT.  PROTECTIVE CASING STICK-UP (FROM GROUND): 2.15 FT.  PROTECTIVE CASING/WELL DIFF.:      FT.  
 PURGE VOLUME: 30 GAL/VOL  YES  NO  N/A  
 TOTAL GAL PURGED: 150  WELLED INTEGRITY: PROT. CASING SECURE  CONCRETE COLLAR INTACT  WELL LOCKED  PVC WELL CAP   
 RISER ELEVATION: 920.16  
 GROUNDWATER ELEVATION: 780.39  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS AMBIENT AIR      PPM WELL MOUTH      PPM  
 WELL DIAMETER:  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	<u>30</u> GAL	<u>60</u> GAL	<u>90</u> GAL	<u>120</u> GAL	<u>150</u> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11.0</u>	<u>11.8</u>	<u>11.9</u>	<u>11.9</u>	<u>11.9</u>	
pH, UNITS <input type="checkbox"/> DH PAPER	<u>7.2</u>	<u>7.0</u>	<u>7.0</u>	<u>7.0</u>	<u>7.0</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>1311</u>	<u>1316</u>	<u>1314</u>	<u>1312</u>	<u>1304</u>	
PUMP RATE, GPM	<u>3.2</u>					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 EQUIPMENT ID: ISCO #  
 PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  1-LINE/DISPOSABLE FILTER  OTHER   
 DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION: 918.2  
 NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		<u>762</u> /	<u>0222801C</u>
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			<u>768</u> /	<u>0222801C</u>
NIT	YES	H2SO4 TO pH<2	500 ML POLY		<u>769</u> /	<u>0222810C</u>
CL	YES	4 DEG C	500 ML POLY		<u>770</u> /	
SO4	YES	4 DEG C			<u>771</u> /	
ALK	NO	4 DEG C	500 ML POLY		<u>772</u> /	
TDS	NO	4 DEG C			<u>773</u> /	
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL		<u>774</u> /	<u>0222810C</u>
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY		<u>775</u> /	<u>0222810C</u>
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>776</u> /	
BN/A	NO	4 DEG C	(2) 1 L AG		<u>777</u> /	<u>0222810C</u>
NG	NO	4 DEG C	1 L AG		<u>778</u> /	
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)

SIGNATURE: G. P. ... / DL  
 RECEIVED BY: Nancy E. Rofa

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **DBN82018**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4-12-92**

SITE ID **DIBN-82-018**

JOB NUMBER **6853-0-**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0800 END 0915**

PROGRAM **C**

WEATHER **SUNNY, 40°**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **2.5 FT**  
 PROTECTIVE CASING/WELL DIFF. **0.4 FT**  
 WELL DEPTH **159.5 FT**  MEASURED  HISTORICAL  
 WATER DEPTH **130.75 FT**  
 HEIGHT OF WATER COLUMN **19 FT**  
 RISER ELEVATION **907.80**  
 GROUNDWATER ELEVATION **777.05**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR  PPM  
 WELL MOUTH  PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 30 GAL	@ 60 GAL	@ 90 GAL	@ 120 GAL	@ 150 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	1.6	12.2	12.2	12.2	12.3	<input type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER	6.6	7.66	7.61	7.50	7.62	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	251	270	273	250	251	<input type="checkbox"/> COLORED
PUMP RATE, GPM						<input type="checkbox"/> TURBID
						<input type="checkbox"/> OOCR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_ ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS#   
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION **905.5**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	779 /	032601C
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>	779	032601C
<input checked="" type="checkbox"/> NIT	YES	H2S04 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	780	052810C
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	781	
<input checked="" type="checkbox"/> SO4	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	782	
<input checked="" type="checkbox"/> TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC	NO	H2S04 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2	NO	H2S04 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	783 / 784 / 785	0428701C
<input checked="" type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	786 / 787	0228101C
<input checked="" type="checkbox"/> NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	788	032801C
<input checked="" type="checkbox"/> DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	789	
<input checked="" type="checkbox"/> TPH	NO	H2S04 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *G. P. Samuel*  
 RECEIVED BY: *W. Nancy E. Post*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

DBN 82-01C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID DBN-82-01C

JOB NUMBER 6853-04

SAMPLING DATE 4.12.92

LOCATION ACTIVITY START 0930 END 1045

PROGRAM C

FILE NAME CGW

WEATHER Sunny, 40'S

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.4 FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. 0.2 FT

WELL DEPTH 169 FT  MEASURED  HISTORICAL

WATER DEPTH 130.23 FT

HEIGHT OF WATER COLUMN 39 FT

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION 907.36

GROUNDWATER ELEVATION 777.08

PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	<u>236</u> GAL	<u>212</u> GAL	<u>108</u> GAL	<u>44</u> GAL	<u>120</u> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOCR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11.7</u>	<u>12.4</u>	<u>12.4</u>	<u>12.2</u>	<u>12.2</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.59</u>	<u>7.65</u>	<u>7.73</u>	<u>7.5</u>	<u>7.5</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>269</u>	<u>267</u>	<u>262</u>	<u>261</u>	<u>257</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID ISCO #

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION 905.0

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		<u>790</u> /	<u>0326601C</u>
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			<u>790</u> /	<u>0326601C</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>791</u> /	<u>052801C</u>
CL TT08	YES	4 DEG C	500 ML POLY		<u>792</u> /	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>793</u> /	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>794</u> / <u>795</u> / <u>796</u>	<u>012801C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG		<u>797</u> / <u>798</u>	<u>022801C</u>
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG		<u>799</u> /	<u>022801C</u>
DNT UW26	NO	4 DEG C	1 L AG		<u>800</u> /	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* One BN/A bottle broke - sample was poured into another bottle

SIGNATURE: J. [Signature]

RECEIVED BY: \_\_\_\_\_

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

**DIBN 89104A**

PROJECT **USATHAMA-BAAP**

SITE TYPE

**WELL**

SITE ID **DIBN-89-104A**

JOB NUMBER

**6853-04**

SAMPLING DATE

**4.10.92**

LOCATION ACTIVITY **START 0800 END 0900**

PROGRAM

**C**

FILE NAME

**CGW**

WEATHER

**cloudy, 40's**

**WATER LEVEL / WELL DATA**

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

**2.4 FT**

PROTECTIVE CASING/WELL DIFF.

**.21 FT**

WELL DEPTH **157 FT**

MEASURED  
 HISTORICAL

WATER DEPTH **132.4 FT**

**30** GAL/VOL

WELL INTEGRITY:

YES NO N/A

RISER ELEVATION

**919.29**

HEIGHT OF WATER COLUMN **13 FT**

**150** TOTAL GAL PURGED

PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
PVC WELL CAP

GROUNDWATER ELEVATION

**780.09**

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR \_\_\_\_\_ PPM

WELL MOUTH \_\_\_\_\_ PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

**PURGE DATA**

PURGE VOLUME

**30** GAL

**60** GAL

**90** GAL

**120** GAL

**150** GAL

SAMPLE OBSERVATIONS

TEMP, DEG C

**11.2**

**11.6**

**11.5**

**11.5**

**11.5**

pH, UNITS  pH PAPER

**7.0**

**7.1**

**7.0**

**7.2**

**7.2**

SPECIFIC CONDUCTIVITY umhos/cm

**246**

**340**

**517**

**548**

**548**

PUMP RATE, GPM

**3**

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER \_\_\_\_\_

EQUIPMENT ID

ISCO # \_\_\_\_\_  
GRUNDFOS# **X**  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

**917.5**

NUMBER OF FILTERS USED **1**

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		<b>845</b> / /	<b>02222010</b>
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			/ /	/
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2			/ /	/
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2			/ /	/
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2			/ /	/
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2			/ /	/
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2			/ /	/
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2			/ /	/
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2			/ /	/
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2			/ /	/
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2			<b>845</b> / /	<b>02222010</b>
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<b>846</b> / /	<b>02222010</b>
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		<b>847</b> / /	/
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C			<b>848</b> / /	/
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<b>848</b> / /	/
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C			<b>848</b> / /	/
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		/ /	/
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		/ /	/
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		<b>849</b> / <b>850</b> / <b>851</b> /	<b>02222010</b>
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG		<b>852</b> / <b>853</b> /	<b>02222010</b>
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG		/ /	/
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG		<b>854</b> / /	<b>02222010</b>
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG		<b>855</b> / /	/
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		/ /	/

**NOTES**

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *J. Jaramila*

RECEIVED BY: *Nancy E. B.*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **ELN9107A**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4.11.92**

SITE ID **ELN-91-07A**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1415 END 1500**

PROGRAM **C**

WEATHER **wet, cloudy, 50°**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 MEASURED  
 HISTORICAL

WELL DEPTH **128** FT  
 WATER DEPTH **120.79** FT  
 HEIGHT OF WATER COLUMN **7** FT

PROTECTIVE CASING STICK-UP (FROM GROUND) **1.7±** FT  
 PROTECTIVE CASING/WELL DIFF. **-11** FT

WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A

RISER ELEVATION **897.65**  
 GROUNDWATER ELEVATION **776.86**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELLY MATERIAL  PVC  SS  
 AMBIENT AIR — PPM  
 WELL MOUTH — PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

### PURGE DATA

PURGE VOLUME	9 GAL	18 GAL	27 GAL	36 GAL	45 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input checked="" type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	11.0	11.0	11.1	11.0	11.1	
pH, UNITS <input type="checkbox"/> pH PAPER	7.9	7.8	7.8	7.8	7.6	
SPECIFIC CONDUCTIVITY umhos/cm	643	633	627	627	639	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDFOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION **895.3**

NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1123	032601C
CA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1123	032601C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1124	0528101C
CL	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1125	
SO4	TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1126	
TDS	USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1127	0428701C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1130	0228101C
NG	99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	UNC6	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1132	0228101C
DNT	UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1135	
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CO, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

*Purge water silty/cloudy thru 3 1/2 Vol. then cleared up*

SIGNATURE: *VM/CK*  
 RECEIVED BY: *Wendy E Rofca*



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN 91107B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4-11-92

SITE ID ELN-911-07B

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION/ACTIVITY START 1515 END 1700

PROGRAM C

WEATHER cloudy w+50%

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.61 FT

PROTECTIVE CASING/WELL DIFF. -10 FT

WELL DEPTH 147 FT

MEASURED  
 HISTORICAL

WATER DEPTH 118.97 FT

36 GAL/VOL 36

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION 875.82

HEIGHT OF WATER COLUMN 28 FT

179 TOTAL GAL PURGED

GROUNDWATER ELEVATION 776.91

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  
 1 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	36 GAL	72 GAL	108 GAL	144 GAL	179 GAL
TEMP, DEG C	10.3	10.7	10.7	10.8	10.7
pH, UNITS <input type="checkbox"/> pH PAPER	7.7	7.7	7.7	7.7	7.7
SPECIFIC CONDUCTIVITY umhos/cm	619	608	605	609	620
PUMP RATE, GPM					

### SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- OOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
 SAMPLING

EQUIPMENT ID  
 PERISTALTIC PUMP ISCO #  
 SUBMERSIBLE PUMP GRUNDEOS#  
 BAILER 2" 4" #  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 893.7

NUMBER OF FILTERS USED

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	1134	0326601C
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CO SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1134	0326601C
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1135	0528101C
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1136	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1137	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1138	0428701C
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1141	0228101C
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1143	0228101C
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1144	
<input checked="" type="checkbox"/> TPH USEPA 418.1	NJ	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *VM/CK*

RECEIVED BY: *Wendy E. Rose*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

E L M 9 1 1 1 0

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SAMPLING DATE: 4.13.92

SITE ID: E L M - 9 1 1 - 1 1 0

JOB NUMBER: 6853-04

FILE NAME: CGW

LOCATION ACTIVITY: START 1045 END 1130

PROGRAM: C

WEATHER: cloudy, 30°S

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.4 FT

PROTECTIVE CASING/WELL DIFF.

-14 FT

WELL DEPTH: 156 FT

MEASURED  
 HISTORICAL

WATER DEPTH: 145.96 FT

15 GAL/VOL

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
PVC WELL CAP

RISER ELEVATION: 923.04

HEIGHT OF WATER COLUMN: 10 FT

75 TOTAL GAL PURGED

GROUNDWATER ELEVATION: 145.96

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

WELL DIAMETER: 2 INCH  
 4 INCH  
 6 INCH

777.05

### PURGE DATA

PURGE VOLUME	@ 15 GAL	@ 30 GAL	@ 45 GAL	@ 60 GAL	@ 75 GAL
TEMP, DEG C	9.3	9.9	10.3	10.3	10.2
pH, UNITS <input type="checkbox"/> pH PAPER	7.2	7.0	7.0	7.0	7.0
SPECIFIC CONDUCTIVITY umhos/cm	1165	1250	1276	1289	1260
PUMP RATE, GPM					

### SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOSS # \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION: 920.8

NUMBER OF FILTERS USED: \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1145	032660C
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1145	032660C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1146	032660C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1147	
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1148	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1149 / 1150 / 1151	042870C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1152 / 1153	022810C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1154	022810C
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1155	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Vinick  
 RECEIVED BY: Nancy E. Rota

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELM8701

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.12.92

SITE ID ELM-89-01

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1400 END 1515

PROGRAM C

WEATHER Sunny, windy, 40

### WATER LEVEL / WELL DATA

WELL DEPTH 167 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.25 FT

PROTECTIVE CASING/WELL DIFF. 62.18 FT

WATER DEPTH 144.78 FT

40 GAL/VOL

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
4 VC WELL CAP  YES  NO  N/A

RISER ELEVATION 922.73

HEIGHT OF WATER COLUMN: 23 FT

200 TOTAL GAL PURGED

GROUNDWATER ELEVATION 777.95

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 1 INCH

### PURGE DATA

PURGE VOLUME	@ 40 GAL	@ 80 GAL	@ 120 GAL	@ 160 GAL	@ 200 GAL
TEMP, DEG C	11.1	11.4	11.1	11.2	11.2
PH, UNITS <input type="checkbox"/> PH PAPER	6.99	7.0	6.7	6.7	6.7
SPECIFIC CONDUCTIVITY umhos/cm	715	714	719	719	714
PUMP RATE, GPM	3.2				

### SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDEOS#

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 L/DUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 920.5

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	997 /	0326601C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	997 /	0326601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	997 /	0328101C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	999 /	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1000 /	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1001 / 1002 / 1003	0428701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1004 / 1005	0338101C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]*  
RECEIVED BY: Nancy E. Pot

ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER ELN 89102A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4-13-92

SITE ID ELN-89-02A

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1015 END 1030

PROGRAM C

WEATHER cloudy, 30's

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE TOP OF CASING (FROM GROUND) 2.3± FT.  PROTECTIVE CASING/WELL DIFF. -.73 FT.

WELL DEPTH 160.5 FT.  MEASURED  HISTORICAL

WATER DEPTH 144.31 FT. GAL/VOL 27 WELL INTEGRITY: YES NO N/A

HEIGHT OF WATER COLUMN 16 FT. 3-4 TOTAL GAL PURGED 133 PROT. CASING SECURE  CONCRETE COLLAR INTACT  WELL LOCKED  PVC WELL CAP

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  P/C  SS AMBIENT AIR 0 PPM WELL MOUTH 0 PPM

RISER ELEVATION 921.10 GROUNDWATER ELEVATION 776.79 WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

4-13-92

PURGE VOLUME	a	b	c	d	e	SAMPLE OBSERVATIONS
	GAL	GAL	GAL	GAL	GAL	
TEMP, DEG C	<u>7.6</u>	/	/	/	/	<input type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER	<u>9.8</u>	/	/	/	/	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>340</u>	/	/	/	/	<input type="checkbox"/> COLORED
PUMP RATE, GPM		/	/	/	/	<input type="checkbox"/> TURBID
		/	/	/	/	<input type="checkbox"/> ODOR
		/	/	/	/	<input type="checkbox"/> OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

EQUIPMENT ID ISCO #      GRUNDEOS# 2" 4" #

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION 919.4

NUMBER OF FILTERS USED     

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	<u>1006</u>	<u>052660-C</u>
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1006</u>	<u>032660-C</u>
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1007</u>	<u>052660-C</u>
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1008</u>	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1009</u>	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC $\mu$ m 33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>1010</u>	<u>012570-C</u>
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>1013</u>	<u>022300-C</u>
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<u>1014</u>	
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

2) Bailed ~ 3-4 gal. pulled H<sub>2</sub>O column down ~ 4 Ft. very silty, "grouty".  
 2) collected most of samples at 1030. Will return later on to get the rest of the SVCAJ.

SIGNATURE: Vm/CK  
 RECEIVED BY: Nancy E. Rosta

ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN8902B

PROJECT USATHAMA-6AAP

SITE TYPE WELL

SITE ID ELN1-89-02B

JOB NUMBER 6853-04

SAMPLING DATE 4.10.92

LOCATION ACTIVITY START 0930 END 1100

PROGRAM C

FILE NAME CGW

WEATHER Sunny Windy

WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 3.1 ± FT  
 PROTECTIVE CASING/WELL DIFF. -1.35 FT  
 WELL DEPTH 180.5 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 144.41 FT  
 HEIGHT OF WATER COLUMN 26 FT  
 RISER ELEVATION 920.19  
 GROUNDWATER ELEVATION 775.78  
 WELLS INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 LEAK MATERIAL  PVC  SS  
 AMBIENT AIR 0 PPM  
 WELL MOUTH 0 PPM  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

PURGE DATA

PURGE VOLUME	36 GAL	72 GAL	108 GAL	144 GAL	182 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	9.7	10.3	11.2	11.2	11.2	<input checked="" type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER	7.3	7.6	7.8	7.7	7.7	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	439	471	443	447	452	<input type="checkbox"/> COLORED
PUMP RATE, GPM						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GROUNDEOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROB  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 918.0  
 NUMBER OF FILTERS USED \_\_\_\_\_

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		1015	03266010
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1015	03266010
NIT TT10	YES	H2SO4 TO pH<2	500 ML POLY		1016	03266010
CL TT08	YES	4 DEG C	500 ML POLY		1017	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1018	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL		1019	03266010
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1022	03266010
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 413.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, CB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: VM/CK

RECEIVED BY: Nancy E. Koria

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **ELM 8903**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4.10.92**

SITE ID **ELM-89-03**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1445 END 1600**

PROGRAM **C**

WEATHER **rain, 40's**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.45** FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. **13** FT

WELL DEPTH **152** FT  MEASURED  HISTORICAL

WATER DEPTH **139.15** FT

HEIGHT OF WATER COLUMN **13** FT

WELL INTEGRITY: PROTECTIVE CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

PVC WELL CAP  YES  NO  N/A

RISER ELEVATION **916.28**

GROUNDWATER ELEVATION **777.13**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR \_\_\_\_\_ PPM

WELL MOUTH \_\_\_\_\_ PPM

WELL DIAMETER  2 INCH  4 INCH  \_\_\_\_\_ INCH

### PURGE DATA

PURGE VOLUME	a 20 GAL	a 40 GAL	a 60 GAL	a 80 GAL	a 120 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.7	10.9	10.6	10.6	10.8	
pH, UNITS <input type="checkbox"/> pH PAPER	7.4	7.2	7.2	7.3	7.3	
SPECIFIC CONDUCTIVITY umhos/cm	557	560	561	564	565	
PUMP RATE, GPM	3.2					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP ISCO # \_\_\_\_\_

SAMPLING  SUBMERSIBLE PUMP GRUNDEOS# **2**

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

GROUND ELEVATION **914.0**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	1024	022501C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1024	022501C
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1025	022501C
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1026	
SO4	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1027	
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1028 / 1029 / 1030	022501C
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1031 / 1032	022501C
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *J. Deamuel / DL*

RECEIVED BY: *Wendy E. Potter*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN 29104A

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SAMPLING DATE: 1/27/92

SITE ID: ELN-29-104A

JOB NUMBER: 6853-04

FILE NAME: CGW

LOCATION ACTIVITY: START                      END                      1800

PROGRAM: C

WEATHER:                     

### WATER LEVEL / WELL DATA

WELL DEPTH: 164 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 2.31 FT

PROTECTIVE CASING/WELL DIFF.: -0.02 FT

WATER DEPTH: 26 FT

26 GAL/VOL

WELL INTEGRITY: YES  NO  N/A

RISER ELEVATION: 926.22

HEIGHT OF WATER COLUMN: 14.62

130 TOTAL GAL PURGED

PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
PVC WELL CAP

GROUNDWATER ELEVATION: 776.9

PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR PPM:                     

WELL MOUTH PPM:                     

WELL DIAMETER:  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	<u>26</u> GAL	<u>52</u> GAL	<u>78</u> GAL	<u>104</u> GAL	<u>130</u> GAL
TEMP, DEG C	<u>12.8</u>	<u>12.5</u>	<u>12.1</u>	<u>12.1</u>	<u>11.9</u>
pH, UNITS <input type="checkbox"/> pH PAPER	<u>6.21</u>	<u>6.83</u>	<u>6.92</u>	<u>6.91</u>	<u>6.95</u>
SPECIFIC CONDUCTIVITY $\mu$ mos/cm	<u>116.9</u>	<u>118.5</u>	<u>119.3</u>	<u>118.9</u>	<u>117.2</u>
PUMP RATE, GPM					

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID   
SUBMERSIBLE PUMP  ISCO #   
BAILER  GRUNDOS#   
PVC/SILICON TUBING  2"  4" #   
IN-LINE/DISPOSABLE FILTER   
OTHER

DECON FLUIDS USED   
POTABLE WATER   
LIQUINOX   
STEAM CLEANING

WATER LEVEL EQUIP. USED   
ELECTRIC COND. PROBE   
FLOAT ACTIVATED   
PRESSURE TRANSDUCER

GROUND ELEVATION: 924.1

NUMBER OF FILTERS USED:                     

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			<u>1033</u>	<u>032000</u>
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2			<u>1033</u>	<u>032000</u>
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>1034</u>	<u>032500</u>
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		<u>1035</u>	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C	500 ML POLY		<u>1036</u>	
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NP3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VCC UM 33	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>1037</u>	<u>032000</u>
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG		<u>1040</u>	<u>032000</u>
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

ENCLOSURE AT 1710 TO THE FILE

SIGNATURE:                       
RECEIVED BY:

ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **ELN89104B**

PROJECT: **USATHAMA-GAAP**

SITE TYPE: **WELL**

SAMPLING DATE: **4/25/92**

SITE ID: **ELN-89-104B**

JOB NUMBER: **6853-04**

FILE NAME: **CGW**

LOCATION ACTIVITY: START **4/25/92 10:00** END **17:30**

PROGRAM: **C**

WEATHER: **OVERCAST 40'S**

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING/WELL DIFF. **1.75 FT**  
 TOP OF CASING (FROM GROUND)  
 MEASURED  
 HISTORICAL  
 WELL DEPTH: **201 FT**  
 WATER DEPTH: **150.5 FT**  
 HEIGHT OF WATER COLUMN: **50.5 FT**  
 RISER ELEVATION: **926.63**  
 GROUNDWATER ELEVATION: **776.13**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL: AMBIENT AIR **0.0 PPM** WELL MOUTH **0.0 PPM**  
 PVC  SS  
 WELLS DIAMETER:  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	@ 45 GAL	@ 90 GAL	@ 135 GAL	@ 180 GAL	@ 224 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLCRED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.7	10.8	10.6	10.9	10.8	
pH, UNITS <input type="checkbox"/> pH PAPER	7.72	7.69	7.67	7.65	7.62	
SPECIFIC CONDUCTIVITY umhos/cm	617	617	614	612	611	
PUMP RATE, GPM	4					

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID: ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GROUNDS# **ABB #2**  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION: **924.8**  
 NUMBER OF FILTERS USED: **1**

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	1042	0226601C
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1042	0326601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1043	0226601C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1044	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1045	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1046 / 1047 / 1048	0226601C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1049 / 1050	0226601C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *James E. Carter / GEP*  
 RECEIVED BY: *Paul S. Kuebler*



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER ELM8905

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELM-89-05

JOB NUMBER 6853-3-

SAMPLING DATE 4.10.72

LOCATION ACTIVITY START 1015 END 1100

PROGRAM C

FILE NAME CGW

WEATHER RAIN, 40°S

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.65 FT

PROTECTIVE CASING/WELL DIFF. 7.03 FT

WELL DEPTH 136 FT  MEASURED  HISTORICAL

WATER DEPTH 123.46 FT

HEIGHT OF WATER COLUMN 12.5 FT

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

RISER ELEVATION 900.95

GROUNDWATER ELEVATION 777.49

### PURGE DATA

PURGE VOLUME	@ 20 GAL	@ 40 GAL	@ 60 GAL	@ 80 GAL	@ 100 GAL	SAMPLE OBSERVATIONS: <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>9.9</u>	<u>10.0</u>	<u>10.1</u>	<u>10.1</u>	<u>12.3</u>	
PH, UNITS <input type="checkbox"/> PH PAPER	<u>7.6</u>	<u>7.5</u>	<u>7.4</u>	<u>7.5</u>	<u>7.5</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>607</u>	<u>664</u>	<u>614</u>	<u>707</u>	<u>612</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID 1SCO #

SUBMERSIBLE PUMP  GROUND FOS#

BAILER  2"  4" #

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED:  POTABLE WATER,  LIQUINOX,  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE,  FLOAT ACTIVATED,  PRESSURE TRANSDUCER

GROUND ELEVATION 129.5

NUMBER OF FILTERS USED

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1051</u>	<u>072301C</u>
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1051</u>	<u>072301C</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1052</u>	<u>072301C</u>
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1053</u>	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1054</u>	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>1055</u> / <u>1056</u> / <u>1057</u>	<u>072301C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>1058</u> / <u>1059</u>	<u>072301C</u>
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		<u>072301C</u>
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: VM/CK  
 RECEIVED BY: Nancy F. Potea

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER ELN 891063

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.10.92

SITE ID ELN-89-063

JOB NUMBER 6853-0-

FILE NAME CGW

LOCATION ACTIVITY START 1315 END 1530

PROGRAM C

WEATHER rain, 40° S

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP (FROM GROUND) 2.7± FT

PROTECTIVE CASING/WELL DIFF. -0.76 FT

WELL DEPTH 184 FT  
 MEASURED  
 HISTORICAL

WATER DEPTH 131.44 FT

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION 908.22

HEIGHT OF WATER COLUMN 53 FT  
47 GAL/VOL  
231 TOTAL GAL PURGED

GROUNDWATER ELEVATION 776.78

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0 PPM  
 WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	<u>47</u> GAL	<u>97</u> GAL	<u>141</u> GAL	<u>188</u> GAL	<u>231</u> GAL
TEMP, DEG C	<u>9.8</u>	<u>10.5</u>	<u>10.6</u>	<u>10.5</u>	<u>10.6</u>
PH, UNITS <input type="checkbox"/> PH PAPER	<u>7.8</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>	<u>7.6</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>525</u>	<u>532</u>	<u>534</u>	<u>535</u>	<u>534</u>
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO #  
 GRUNDEOS#  
 2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 906.1

NUMBER OF FILTERS USED     

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	<u>1060</u>	<u>022830.C</u>
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1060</u>	<u>022830.C</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1061</u>	<u>022830.C</u>
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1062</u>	
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1063</u>	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>1064</u>	<u>022830.C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>1067</u>	<u>022830.C</u>
NG 99	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Vm/ck  
 RECEIVED BY: Stanley E. Rosta

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELM8907

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELM-89-07

JOB NUMBER 6853-04

SAMPLING DATE 4.13.92

LOCATION ACTIVITY START 1400 END 1445

PROGRAM C

FILE NAME CGW

WEATHER cloudy, 30°S

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 24± FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. -.09 FT

WELL DEPTH 152.5 FT  MEASURED  HISTORICAL

WATER DEPTH 139.96 FT

HEIGHT OF WATER COLUMN 12.5 FT

20 GAL/VOL

100 TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A

PROT. CASING SECURE

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

RISER ELEVATION 916.19

GROUNDWATER ELEVATION 776.23

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR — PPM WELL MOUTH — PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	20 GAL	40 GAL	60 GAL	80 GAL	100 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	9.5	10.6	10.6	10.6	10.6	<input checked="" type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER	7.8	7.8	7.8	7.8	7.5	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	520	634	529	533	537	<input type="checkbox"/> COLORED
PUMP RATE, GPM						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID ISCO #

SAMPLING  SUBMERSIBLE PUMP GRUNDFOS#

BAILER 2" 4" #

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

NUMBER OF FILTERS USED 1

DECON FLUIDS USED  POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

GROUND ELEVATION 913.7

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			1069	032660
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1069	032660
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1070	0528101
CL	YES	4 DEG C	500 ML POLY		1071	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		1072	
TDS	NO	4 DEG C				
TCC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		1073 / 1074 / 1075	0428701
BN/A	NO	4 DEG C	(2) 1 L AG		1076 / 1077	032660
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: VM/ck

RECEIVED BY: W. Nancy E. R...

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PAGE 1 OF 1

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELM8908

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.13.92

SITE ID ELM-89-08

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1200 END 1300

PROGRAM C

WEATHER cloudy, 30'S

WATER LEVEL / WELL DATA

TOP OF WELL  
TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.87 FT

PROTECTIVE CASING/WELL DIFF. -0.20 FT

WELL DEPTH 148 FT

MEASURED HISTORICAL

WATER DEPTH 129.40 FT

30 GAL/VOL 30

WELL INTEGRITY: PROT. CASING SECURE YES NO N/A  
CONCRETE COLLAR INTACT  
WELL LOCKED  
PVC WELL CAP

RISER ELEVATION 906.04

HEIGHT OF WATER COLUMN 19 FT

150 TOTAL GAL PURGED

GROUNDWATER ELEVATION 776.64

PURGE H2O CONTAINED? VOC DNT NO

WELL MATERIAL PVC SS

AMBIENT AIR PPM

WELL MOUTH PPM

WELL DIAMETER 2 INCH 4 INCH

PURGE DATA

PURGE VOLUME	30 GAL	60 GAL	90 GAL	120 GAL	150 GAL
TEMP, DEG C	9.1	10.5	10.6	10.7	10.5
pH, UNITS	7.9	7.9	7.9	7.9	7.9
SPECIFIC CONDUCTIVITY umhos/cm	455	491	485	487	490
PUMP RATE, GPM	~5 gpm				

SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP GRUNDFOS#  
 BAILER 2" 4" #  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 903.0

NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	1078	0528601C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1078	0528601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1079	0528601C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1080	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1081	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1082	0428701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1085	0528101C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Um/ck*  
 RECEIVED BY: *Nancy E. Rota*

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PAGE \_\_\_\_\_ OF \_\_\_\_\_

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELM89109

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SITE ID: ELM-89-019

JOB NUMBER: 6853-04

SAMPLING DATE: 4.9.92

LOCATION ACTIVITY: START 1100 END 1200

PROGRAM: C

FILE NAME: CGW

WEATHER: cloudy, 57.5

WATER LEVEL / WELL DATA

WELL DEPTH: 157 FT

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

3.2 ± FT

PROTECTIVE CASING/WELL DIFF. -1.29 FT

WATER DEPTH: 142.80 FT

MEASURED  
 HISTORICAL

2 GAL/VOL

WELL INTEGRITY: YES NO N/A  
PROT. CASING SECURE     
CONCRETE COLLAR INTACT     
WELL LOCKED     
PVC WELL CAP

RISER ELEVATION: 921.79

HEIGHT OF WATER COLUMN: ~14 FT

130 TOTAL GAL PURGED

GROUNDWATER ELEVATION: 778.99

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER:  2 INCH  
 4 INCH  
 INCH

PURGE DATA

PURGE VOLUME	26 GAL	52 GAL	78 GAL	104 GAL	130 GAL
TEMP, DEG C	12.8	12.8	12.9	12.8	12.8
pH, UNITS <input type="checkbox"/> pH PAPER	7.1	7.2	7.0	7.0	7.0
SPECIFIC CONDUCTIVITY umhos/cm	1071	1072	1082	1079	1081
PUMP RATE, GPM					

SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID: ISCO #  
GROUND FOS #  
2"  4"

NUMBER OF FILTERS USED

DECON FLUIDS USED:  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION: 919.6

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	1087	022801C
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1087	022801C
<input checked="" type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1088	02281010
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1089	
<input checked="" type="checkbox"/> SO4	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1090	
<input checked="" type="checkbox"/> TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	1091	0423701C
<input checked="" type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1094	0228101C
<input checked="" type="checkbox"/> NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1095	
<input checked="" type="checkbox"/> NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: VM/CK

RECEIVED BY: Nancy E. Rose

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **ELN8201A**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4.9.92**

SITE ID **ELN-82-01A**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0815 END 0815**

PROGRAM **C**

WEATHER **cloudy, 40's**

### WATER LEVEL / WELL DATA

WELL DEPTH **135** FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING  
PROTECTIVE CASING STICK-UP **2.1 ±** FT  
(FROM GROUND)

PROTECTIVE CASING/WELL DIFF. **Flush** FT

WATER DEPTH **127.12** FT

GAL/VOL **134**

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
PVC WELL CAP  YES  NO  N/A

RISER ELEVATION **905.02**

HEIGHT OF WATER COLUMN **~ 8 FT**  
**127.12m**

TOTAL GAL PURGED **5**

GROUNDWATER ELEVATION **777.90**

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR **0** PPM

WELL MOUTH **0** PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	<b>5</b> GAL	_____ GAL	_____ GAL	_____ GAL	_____ GAL
TEMP, DEG C	<b>16.2</b>				
PH, UNITS <input type="checkbox"/> PH PAPER	<b>7.7</b>				
SPECIFIC CONDUCTIVITY umhos/cm	<b>415</b>				
PUMP RATE, GPM					

### SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODCR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

URGING  SAMPLING   
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDEOS# **2** " 4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. ROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION **902.8**

NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<b>889</b>	<b>022801C</b>
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<b>889</b>	<b>022801C</b>
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<b>890</b>	<b>022810.0</b>
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<b>891</b>	
SO4	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<b>892</b>	
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<b>893</b>	<b>022801C</b>
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<b>894</b>	<b>022810.0</b>
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	<b>895</b>	<b>022801C</b>
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* Purged dry at ~ 5 gal. w/ 2" Bailer (4.8.92) SIGNATURE: UM/CK  
 RECEIVED BY: Wendy E. Rofa

\* Sampled w/ 2" Bailer 4/9/92

Purged on 4/8/92

ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN2201B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.9.92

SITE ID ELN-82-01B

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0900 END 0730

PROGRAM C

WEATHER cloudy, 40°

WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.3± FT

PROTECTIVE CASING/WELL DIFF. 7.13 FT

WELL DEPTH 146 FT

MEASURED  
 HISTORICAL

WATER DEPTH 126.98 FT

25 GAL/VOL 25

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
PVC WELL CAP  YES  NO  N/A

RISER ELEVATION 904.75

HEIGHT OF WATER COLUMN 19 FT

8 TOTAL GAL PURGED 123

GROUNDWATER ELEVATION 777.77

PURGE H2O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

PURGE DATA

PURGE VOLUME

8 GAL

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

TEMP, DEG C

12.3

pH, UNITS  pH PAPER

7.7

SPECIFIC CONDUCTIVITY umhos/cm

458

PUMP RATE, GPM

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID

ISCO #  
GRUNDFOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

902.5

NUMBER OF FILTERS USED

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				02280
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2				
NIT	YES	H2SO4 TO pH<2	500 ML POLY	898		02280
CL	YES	4 DEG C	500 ML POLY	899		02280
SO4	YES	4 DEG C		900		
ALK	NO	4 DEG C	500 ML POLY	901		
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2 (3)40 ML VIAL				
NH3N2	NO	H2SO4 TO pH<2 500 ML POLY				
VOC	NO	HCL, 4 DEG C (3)40 ML VIAL		902	903	04280
BN/A	NO	4 DEG C (2) 1 L AG		905	906	02280
NG	NO	4 DEG C	1 L AG			02280
NAM	NO	4 DEG C	1 L AG			02280
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* Pump kept shutting down - well somewhat silty, only able to purge 8 gal. even after lowering pump to bottom. Purged 4.8.92

SIGNATURE: Jm/ck

RECEIVED BY: Nancy E. Port

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **E L N 8 2 0 1 C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **E L N - 8 2 - 0 1 C**

JOB NUMBER **6853-04**

SAMPLING DATE **4.9.92**

LOCATION ACTIVITY **START 0945 END 1015**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **cloudy, no sun**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **-1.23 FT**  
 PROTECTIVE CASING/WELL DIFF. **-0.02 FT**  
 WELL DEPTH **156 FT**  MEASURED  HISTORICAL  
 WATER DEPTH **127.52 FT**  
 HEIGHT OF WATER COLUMN **28.5 FT**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 RISER ELEVATION **905.06**  
 GROUNDWATER ELEVATION **777.54**  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 AMBIENT AIR **0** PPM WELL MOUTH **0** PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	4/8/92	4/9/92			
	217 GAL	21 GAL	42 GAL	63 GAL	84 GAL
TEMP, DEG C	11.4	12.4	12.0	12.0	11.7
PH, UNITS <input type="checkbox"/> PH PAPER	7.4	7.4	7.5	7.5	7.5
SPECIFIC CONDUCTIVITY umhos/cm	480	475	429	429	429
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

SURGING  SAMPLING  
 PERISTALTIC PUMP ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP BRAND/MS# \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION **902.7**  
 NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2			907	022280: C
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			907	022280: C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		908	052810: C
CL TT08	YES	4 DEG C	500 ML POLY		909	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		910	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		911	042870: C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		914	012810: C
NG 99	NO	4 DEG C	1 L AG		915	
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

Purged 17 gal (dry?) on 4.8.92. Purged 67 more gallons on 4.9.92 and sampled after recharging.

SIGNATURE: VM/CK  
 RECEIVED BY: Nancy E. Rofa



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN-82-02A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELN-82-02A

JOB NUMBER 6853-04

SAMPLING DATE 4/23/92

LOCATION ACTIVITY START 0815 END 1230

PROGRAM C

FILE NAME CGW

WEATHER Clear / 10-22

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 210 FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. 4.00 FT  
 WELL DEPTH 145 FT  MEASURED  HISTORICAL  
 WATER DEPTH 132.60 FT  
 HEIGHT OF WATER COLUMN 6.4 FT  
 10 GAL/VOL  
 50 TOTAL GAL PURGED  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0.0 PPM WELL MOUTH 0.0 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH  
 RISER ELEVATION 916.00  
 GROUNDWATER ELEVATION 777.4

### PURGE DATA

PURGE VOLUME	@ 10 GAL	@ 20 GAL	@ 30 GAL	@ 40 GAL	@ 50 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	12.3	12.8	12.5	12.4	13.3	
PH, UNITS <input type="checkbox"/> PH PAPER	6.0	6.2	6.8	6.9	6.9	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	182	115	120	102	120.05	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP  GRUNDEOS#   
 BAILER  2"  4" #  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER   
 LIQUINOX   
 STEAM CLEANING   
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 913.8  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	916	032660.0
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	916	032660.0
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	917	032660.0
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	918	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	919	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC $\mu\text{m33}$	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	920, 921, 922	032660.0
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	923, 924	032660.0
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

Pump 1/2 hr  
 From 100 ft

SIGNATURE: [Signature]

RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **ELN8202B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **ELN-82-02B**

JOB NUMBER **6853-04**

SAMPLING DATE **4.26.92**

LOCATION ACTIVITY **START 1330 END 1500**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **cloudy - 46°**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 MEASURED  
 HISTORICAL

WELL DEPTH **154** FT  
 WATER DEPTH **139** FT  
 HEIGHT OF WATER COLUMN **14.92** FT

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.18** FT  
 PROTECTIVE CASING/WELL DIFF. **-0.03** FT  
 RISER ELEVATION **916.62**  
 GROUNDWATER ELEVATION **777.54**

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0** PPM  
 WELL MOUTH **0** PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	a 21.2 GAL	a 42.4 GAL	a 63.6 GAL	a 84.8 GAL	a 106 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	11.1	11.0	11.1	11.1	11.2	
pH, UNITS <input type="checkbox"/> pH PAPER	6.79	6.84	6.91	6.90	6.91	
SPECIFIC CONDUCTIVITY umhos/cm	1.16	1.10	1.09	1.08	1.08	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID: PERISTALTIC PUMP 1SCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP GRUNDFOS#   
 BAILER 2" 4" # \_\_\_\_\_  
 PVC/SILICON TUBING \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION **914.6**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY		925	0326000
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			925	0326000
NIT	YES	H2SO4 TO pH<2	500 ML POLY		926	0325000
CL	YES	4 DEG C	500 ML POLY		927	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		928	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		929	0325000
BN/A	NO	4 DEG C	(2) 1 L AG		932	0325000
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* RESAMPLED ON 4.29.92 FOR METALS AND NIT  
 (NO PRESERVED ON 4.26.92) PROO

SIGNATURE: *[Signature]*  
 RECEIVED BY: *[Signature]*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **ELN8202C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **2.26.92**

SITE ID **ELN-82-02C**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1130 END 1300**

PROGRAM **C**

WEATHER **OVERCAST 40's**

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE TOP OF CASING (FROM GROUND) **2.05 FT**

WELL DEPTH **165 FT**  MEASURED  HISTORICAL

WATER DEPTH **137.70 FT**

HEIGHT OF WATER COLUMN **27.30 FT**

PROTECTIVE CASING/WELL DIFF. **-0.03 FT**

RISER ELEVATION **916.19**

GROUNDWATER ELEVATION **778.49**

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS

WELL MATERIAL **AMBIENT AIR 0.0 PPM** **WELL MOUTH 0.0 PPM**

WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	28 GAL	GAL	GAL	GAL	GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	17.2	/	/	/	/	
pH, UNITS <input type="checkbox"/> pH PAPER	6.89	/	/	/	/	
SPECIFIC CONDUCTIVITY umhos/cm	116	/	/	/	/	
PUMP RATE, GPM						

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDEOS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION **914.2**

NUMBER OF FILTERS USED **1**

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	934	0326601C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG S803	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	934	0326601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	935	0525101C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	936	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	937	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	938 939 940	0425701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	941 942	022801C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

1. Daily Report 1 JOL.  
 2. Package then sample

SIGNATURE: *[Signature]*  
 RECEIVED BY: *[Signature]*

\* VERY SLOW RECHARGE RATE  
 \* Recompiled on 4/29/92 for METALS + NIT AT 1230 (NOT PRESERVED 15 T)

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER **ELN 8203A**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4.11.92**

SITE ID **ELN-82-03A**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1130 END 1230**

PROGRAM **C**

WEATHER **cloudy, wet, 10°S**

**WATER LEVEL / WELL DATA**

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM-GROUND) **2.47** FT. PROTECTIVE CASING/WELL DIFF. **-0.02** FT.

WELL DEPTH **152** FT.  MEASURED  HISTORICAL

WATER DEPTH **150.41** FT. WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A RISER ELEVATION **927.68**

HEIGHT OF WATER COLUMN **~7.5** FT. TOTAL GAL PURGED **5** GAL/VOL **10** CONCRETE COLLAR INTACT  YES  NO  N/A GROUNDWATER ELEVATION **777.27**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO WELL MATERIAL  PVC  SS AMBIENT AIR **PPM** WELL MOUTH **PPM** WELL DIAMETER  2 INCH  4 INCH  INCH

**PURGE DATA**

PURGE VOLUME	a <b>5</b> GAL	a _____ GAL	a _____ GAL	a _____ GAL	a _____ GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>10.6</b>					
PH, UNITS <input type="checkbox"/> PH PAPER	<b>7.1</b>					
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<b>1038</b>					
PUMP RATE, GPM						

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID **ISCO # \_\_\_\_\_**

SUBMERSIBLE PUMP  GRUNDFOS# **\_\_\_\_\_**

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION **925.7**

NUMBER OF FILTERS USED \_\_\_\_\_

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	943	032660.C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	943	032660.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	944	052810.C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	945	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	946	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	947	042870.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	950	022810.C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	951	
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* Had to pump from bottom of well to get pump to discharge H<sub>2</sub>O - purged ~5 gal. before running dry.

SIGNATURE: VM/C.K  
 RECEIVED BY: William E. Costa

Observational sample collected - little silt and organic particles (ash)

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN8203A

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELN-82-03A

JOB NUMBER 6853-04

SAMPLING DATE

LOCATION ACTIVITY START END

PROGRAM C

FILE NAME CGW

WEATHER

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 MEASURED  
 HISTORICAL

PROTECTIVE CASING STICK-UP (FROM GROUND) 24 ± FT  
 PROTECTIVE CASING/WELL DIFF. -.02 FT

WELL DEPTH 158 FT  
 WATER DEPTH 150.41 FT  
 HEIGHT OF WATER COLUMN ~7.5 FT

10 GAL/VOL 10  
 5 TOTAL GAL PURGED (50)

WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A

RISER ELEVATION 927.68  
 GROUNDWATER ELEVATION

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR \_\_\_\_\_ PPM  
 WELL MOUTH \_\_\_\_\_ PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	2 GAL	3 GAL	4 GAL	5 GAL	6 GAL
TEMP, DEG C	10.6	/	/	/	/
pH, UNITS <input type="checkbox"/> pH PAPER	7.4	/	/	/	/
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	1033	/	/	/	/
PUMP RATE, GPM					

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDEOS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 925.7  
 NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2	1 L POLY		943	
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2				
<input checked="" type="checkbox"/> CA SS16	YES	HNO <sub>3</sub> TO pH<2				
<input checked="" type="checkbox"/> NA SS16	YES	HNO <sub>3</sub> TO pH<2				
<input checked="" type="checkbox"/> CD SS16	YES	HNO <sub>3</sub> TO pH<2				
<input checked="" type="checkbox"/> CR SS16	YES	HNO <sub>3</sub> TO pH<2				
<input checked="" type="checkbox"/> HG SB03	YES	HNO <sub>3</sub> TO pH<2				
<input checked="" type="checkbox"/> PB SD24	YES	HNO <sub>3</sub> TO pH<2				
<input checked="" type="checkbox"/> NI SS16	YES	HNO <sub>3</sub> TO pH<2				
<input checked="" type="checkbox"/> BA SS16	YES	HNO <sub>3</sub> TO pH<2				
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO <sub>3</sub> TO pH<2			943	
<input checked="" type="checkbox"/> NIT TF10	YES	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY		944	
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		945	
<input checked="" type="checkbox"/> SO <sub>4</sub> TT08	YES	4 DEG C				
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		946	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH <sub>3</sub> N <sub>2</sub> USEPA 350.2	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		947	948 949
<input checked="" type="checkbox"/> B <sub>4</sub> /A UM16	NO	4 DEG C	(2) 1 L AG		950	951
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	1 L GLM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* Had to pump from bottom of well to get pump to discharge water - purged ~ 5 gal. before running dry.

SIGNATURE: VM/CK  
 RECEIVED BY: \_\_\_\_\_

**ABB ENVIRONMENTAL SERVICES, INC.**

PAGE      OF     

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

E LN 2203 C

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID E LN - 182 - 03 C

JOB NUMBER

6853-04

SAMPLING DATE

4 11 92

LOCATION ACTIVITY

START 0945 END 1100

PROGRAM

C

FILE NAME

CGW

WEATHER

wet, cloudy, 40's

**WATER LEVEL / WELL DATA**

WELL DEPTH 179 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.75 FT

PROTECTIVE CASING/WELL DIFF.

+0.01 FT

WATER DEPTH 149.84 FT

20 GAL/VOL 20

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
PVC WELL CAP

YES NO N/A

RISER ELEVATION

926.93

HEIGHT OF WATER COLUMN 29 FT

100 TOTAL GAL PURGED

GROUNDWATER ELEVATION

777.09

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

**PURGE DATA**

PURGE VOLUME	<u>20</u> GAL	<u>40</u> GAL	<u>60</u> GAL	<u>80</u> GAL	<u>100</u> GAL
TEMP, DEG C	<u>10.4</u>	<u>11.2</u>	<u>11.3</u>	<u>11.2</u>	<u>11.9</u>
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.5</u>	<u>7.7</u>	<u>7.6</u>	<u>7.7</u>	<u>7.6</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>650</u>	<u>616</u>	<u>600</u>	<u>595</u>	<u>590</u>
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDFOS# \_\_\_\_\_  
2" 4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION  
925.3

NUMBER OF FILTERS USED \_\_\_\_\_

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>961</u>	<u>022800</u>
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>961</u>	<u>022800</u>
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>962</u>	<u>022800</u>
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>963</u>	
SO4	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>964</u>	
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>965</u>	<u>042800</u>
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>966</u>	<u>022800</u>
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,X,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\* switched order in field - sampled  
E LN-22-03C at 0930

SIGNATURE: VM/CK  
RECEIVED BY: Marcy E. Rosta

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PAGE \_\_\_\_\_ OF \_\_\_\_\_

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

ELN 8204A

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SAMPLING DATE: 4.10.92

SITE ID: ELN-182-04A

JOB NUMBER: 6853-0-

FILE NAME: CGW

LOCATION ACTIVITY: START 0800 END 0830

PROGRAM: C

WEATHER: rain, 40's

WATER LEVEL / WELL DATA

WELL DEPTH: 153 FT.

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.0 ± FT.

PROTECTIVE CASING/WELL DIFF.

Flush FT.

WATER DEPTH: 145.67 FT.

12 GAL/VOL

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
PVC WELL CAP

YES NO N/A

RISER ELEVATION: 923.72

HEIGHT OF WATER COLUMN: 7.5 FT.

5 TOTAL GAL PURGED

GROUNDWATER ELEVATION: 778.05

PURGE H<sub>2</sub>O CONTAINED?  
 VCC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR: 0 PPM

WELL MOUTH: 0 PPM

WELL DIAMETER: 2 INCH  
1 1/2 INCH  
1 INCH

PURGE DATA

4/9/92 "

PURGE VOLUME	@ 2 GAL	@ 5 GAL	@ GAL	@ GAL	@ GAL
TEMP, DEG C	11.7	11.3	/	/	/
pH, UNITS <input type="checkbox"/> pH PAPER	7.0	6.9	/	/	/
SPECIFIC CONDUCTIVITY umhos/cm	849	695	/	/	/
PUMP RATE, GPM			/	/	/

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 COOR  
 OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING   
SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS #  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION: 921.8

NUMBER OF FILTERS USED

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	970	012280: C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	970	012280: C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	971	012280: C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	972	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	973	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	974	012280: C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	975	976
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	977	012810: C
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)

SIGNATURE: Jim CK

RECEIVED BY: Stanley E. Poff

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PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER ELN 821048

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID ELN-82-048

JOB NUMBER 6853-04

SAMPLING DATE 4.10.92

LOCATION ACTIVITY START 0845 END 0915

PROGRAM C

FILE NAME CGW

WEATHER rain, 40's

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.3± FT  
 PROTECTIVE CASING/WELL DIFF. -.06 FT  
 WELL DEPTH 167 FT:  MEASURED  HISTORICAL  
 WATER DEPTH 146.36 FT  
 HEIGHT OF WATER COLUMN 21 FT  
 RISER ELEVATION 924.18  
 GROUNDWATER ELEVATION 777.82  
 WELLS: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELLS MATERIAL  PVC  SS  
 AMBIENT AIR 0 PPM  
 WELL MOUTH 0 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

4/9/92 " " |

PURGE VOLUME	a 7 GAL	a 11 GAL	a GAL	a GAL	a GAL
TEMP, DEG C	13.1	15.3	/	/	/
pH, UNITS <input type="checkbox"/> pH PAPER	7.5	7.6	/	/	/
SPECIFIC CONDUCTIVITY umhos/cm	543	468	/	/	/
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP   
 SUBMERSIBLE PUMP   
 BAITER  2"  4" #  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 EQUIPMENT ID       
 ISCO #       
 GROUND FOS#       
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED PRESSURE TRANSDUCER  
 GROUND ELEVATION 921.9  
 NUMBER OF FILTERS USED     

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	977	0328501C
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	979	01228501C
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	980	0528501C
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	981	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	982	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	983	0428501C
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	984	
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	985	0428501C
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	986	0228501C
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	987	
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,HG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\* Pump near bottom of well - purged dry at ~ 11-12 gal.

SIGNATURE: Vm/CK  
 RECEIVED BY: Nancy E. Rottia



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PAGE      OF     

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER E LN 82204C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID E LN - 82 - 04C

JOB NUMBER 6853-04

SAMPLING DATE 4/10/92

LOCATION ACTIVITY START 0930 END 1000

PROGRAM C

FILE NAME CSW

WEATHER rain, 40's

WATER LEVEL / WELL DATA

WELL DEPTH 175 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.2 ± FT

PROTECTIVE CASING/WELL DIFF. Flush

WATER DEPTH 146.49 FT

305 GAL/VOL

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT:     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION 923.73

HEIGHT OF WATER COLUMN 28.5 FT

85 TOTAL GAL PURGED

GROUNDWATER ELEVATION 777.24

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

PURGE DATA

4/9/92

PURGE VOLUME 33 GAL 45 GAL 65 GAL 85 GAL      GAL

TEMP, DEG C	<u>12.9</u>	<u>13.1</u>	<u>12.9</u>	<u>13.0</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.6</u>	<u>7.5</u>	<u>7.6</u>	<u>7.4</u>	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>540</u>	<u>511</u>	<u>522</u>	<u>497</u>	
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING   
 SAMPLING

EQUIPMENT ID  
 PERISTALTIC PUMP ISCO #  
 SUBMERSIBLE PUMP GRUNDOS#  
 BAILER  2"  4" #  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 921.5

NUMBER OF FILTERS USED     

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	<u>988</u>	<u>032200</u>
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>988</u>	<u>0222800</u>
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>989</u>	<u>0722800</u>
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>990</u>	
SO4	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>991</u>	
TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>992</u> / <u>993</u> / <u>994</u>	<u>0422800</u>
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>995</u> / <u>996</u>	<u>0222800</u>
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GUM	<input checked="" type="checkbox"/>		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Wm/CK  
 RECEIVED BY: William E. Roper

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PAGE \_\_\_\_ OF \_\_\_\_

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER ELN 82-03B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.11.92

SITE ID ELN-82-103B

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0830 END 0930

PROGRAM C

WEATHER wet, cloudy, 40's

WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.0 ± FT

PROTECTIVE CASING/WELL DIFF. + 06 FT

WELL DEPTH 168 FT

MEASURED  
 HISTORICAL

WATER DEPTH 150.39 FT

WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A

HEIGHT OF WATER COLUMN ~ 18 FT

23 GAL/VOL

TOTAL GAL PURGED 116

RISER ELEVATION 927.45

GROUNDWATER ELEVATION 777.06

PURGE H<sub>2</sub>O CONTAINED?  
 VCC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR PPM

WELL MOUTH PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

PURGE DATA

PURGE VOLUME	<u>23</u> GAL	<u>46</u> GAL	<u>69</u> GAL	<u>92</u> GAL	<u>116</u> GAL	SAMPLE OBSERVATIONS: <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11.0</u>	<u>11.6</u>	<u>11.6</u>	<u>11.5</u>	<u>10.1</u>	
PH, UNITS <input type="checkbox"/> DH PAPER	<u>7.2</u>	<u>7.2</u>	<u>7.2</u>	<u>7.2</u>	<u>7.3</u>	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>1104</u>	<u>1018</u>	<u>958</u>	<u>960</u>	<u>879</u>	
PUMP RATE, GPM	<u>1 gpm</u>					

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  ISCO # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDEOS# \_\_\_\_\_

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 925.5

NUMBER OF FILTERS USED \_\_\_\_\_

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			<u>952</u>	<u>0122801C</u>
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			<u>952</u>	<u>0122801C</u>
NIT	YES	H2SO4 TO pH<2	500 ML POLY		<u>953</u>	<u>0522101C</u>
CL	YES	4 DEG C	500 ML POLY		<u>954</u>	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		<u>955</u>	
TDS	NO	4 DEG C				
TCC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>956</u>	<u>0122701C</u>
BN/A	NO	4 DEG C	(2) 1 L AG		<u>957</u>	
NG	NO	4 DEG C	1 L AG		<u>959</u>	<u>0222101C</u>
NAM	NO	4 DEG C	1 L AG		<u>960</u>	
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,X,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

\*switched order in field - sampled ELN-82-03B at 1100

SIGNATURE: Vm/ck  
 RECEIVED BY: Nancy E. Rotia

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER RPM91101

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID RPM-91-01

JOB NUMBER 6853-04

SAMPLING DATE 1/22/92

LOCATION ACTIVITY START 11:30 END 12:30

PROGRAM C

FILE NAME CGW

WEATHER Cloudy

### WATER LEVEL / WELL DATA

WELL DEPTH 108 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.7 ± FT

PROTECTIVE CASING/WELL DIFF. -0.21 FT

WATER DEPTH 160.15 FT

13 GAL/VOL (13)

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
PVC WELL CAP  YES  NO  N/A

RISER ELEVATION 873.96

HEIGHT OF WATER COLUMN 7.75 FT

66 TOTAL GAL PURGED (66)

GROUNDWATER ELEVATION 773.71

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	<u>13</u> GAL	<u>26</u> GAL	<u>39</u> GAL	<u>52</u> GAL	<u>66</u> GAL
TEMP, DEG C	<u>10.1</u>	<u>10.8</u>	<u>11.1</u>	<u>11.1</u>	<u>11.1</u>
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.5</u>	<u>7.5</u>	<u>7.5</u>	<u>7.5</u>	<u>7.5</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>578</u>	<u>582</u>	<u>582</u>	<u>554</u>	<u>535</u>
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 OOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID  
ISCO # \_\_\_\_\_  
GRUNDEFS#   
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 871.8

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)		YES	HN03 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HN03 TO pH<2				
CA	SS16	YES	HN03 TO pH<2				
NA	SS16	YES	HN03 TO pH<2				
CD	SS16	YES	HN03 TO pH<2				
CR	SS16	YES	HN03 TO pH<2			<u>1644</u>	<u>032000C</u>
HG	SB03	YES	HN03 TO pH<2				
PB	SD24	YES	HN03 TO pH<2				
NI	SS16	YES	HN03 TO pH<2				
BA	SS16	YES	HN03 TO pH<2				
HARD	USEPA 130.2	YES	HN03 TO pH<2			<u>1644</u>	<u>032000C</u>
NIT	TF10	YES	H2S04 TO pH<2	500 ML POLY		<u>1645</u>	
CL	TT08	YES	4 DEG C	500 ML POLY		<u>1646</u>	
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>1647</u>	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2S04 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2S04 TO pH<2	500 ML POLY		<u>1648</u>	<u>032000C</u>
VOC	Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>1649</u>	<u>032000C</u>
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		<u>1650</u>	<u>032000C</u>
NG	99	NO	4 DEG C	1 L AG		<u>1651</u>	
NM	UN06	NO	4 DEG C	1 L AG		<u>1652</u>	
CNT	UW26	NO	4 DEG C	1 L AG		<u>1653</u>	
TPH	USEPA 418.1	NO	H2S04 TO pH<2	1 L GWM		<u>1654</u>	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: CK/T11  
 RECEIVED BY: Paul R. Kester

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **RPM 8901**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4/15/92**

SITE ID **RPM-89-011**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0800 END 0900**

PROGRAM **C**

WEATHER **wet, rain, 40° S**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.7** FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. **22** FT  
 MEASURED  
 HISTORICAL  
 WELL DEPTH **126.5** FT  
 WATER DEPTH **113.97** FT  
 HEIGHT OF WATER COLUMN **13** FT  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 RISER ELEVATION **888.65**  
 GROUNDWATER ELEVATION **774.68**  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **—** PPM  
 WELL MOUTH **—** PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 20 GAL	@ 40 GAL	@ 60 GAL	@ 80 GAL	@ 100 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	11.0	10.7	10.7	10.7	10.8	<input checked="" type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> DM PAPER	6.7	7.4	7.6	7.6	7.6	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	531	550	553	540	1632	<input type="checkbox"/> COLORED
PUMP RATE, GPM	3.5					<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 EQUIPMENT ID  
 PERISTALTIC PUMP  ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDEOS#  \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER  \_\_\_\_\_  
 DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION **886.2**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	SS16	HNO3 TO pH<2				
NA	SS16	HNO3 TO pH<2				
CD	SS16	HNO3 TO pH<2			1618	052401C
CR	SS16	HNO3 TO pH<2				
HG	SB03	HNO3 TO pH<2				
PB	SD24	HNO3 TO pH<2				
NI	SS16	HNO3 TO pH<2				
BA	SS16	HNO3 TO pH<2				
HARD	USEPA 130.2	HNO3 TO pH<2			1618	052401C
NI1	TF10	H2SO4 TO pH<2	500 ML POLY		1619	052501C
CL	TT08	4 DEG C	500 ML POLY		1620	
SO4	TT08	4 DEG C				
ALK	USEPA 310.1	4 DEG C	500 ML POLY		1621	
TDS	USEPA 160.1	4 DEG C				
TOC	USEPA 415.1	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY		1622	052401C
VOC	UM33	HCL, 4 DEG C	(3)40 ML VIAL		1623	042501C
BN/A	UM16	4 DEG C	(2) 1 L AG		1624	025101C
NG	99	4 DEG C	1 L AG		1628	
NAM	UN06	4 DEG C	1 L AG		1629	
DNT	UW26	4 DEG C	1 L AG		1630	
TPH	USEPA 418.1	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]* / DL  
 RECEIVED BY: *Nancy E. Rotta*

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **RPM 8902**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **2/15/92**

SITE ID **RPM-89-02**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0900 11a END 1000 1500**

PROGRAM **C**

WEATHER **CLEAR DIRTY 45°**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.0** FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. **2.1** FT  
 WELL DEPTH **114** FT  MEASURED  HISTORICAL  
 WATER DEPTH **100.0** FT  
 HEIGHT OF WATER COLUMN **14** FT  
 RISER ELEVATION **874.76**  
 GROUNDWATER ELEVATION **774.74**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	3:19	3:26	3:34	3:42	3:50	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	11.0	10.7	10.6	10.6	10.3	
PH, UNITS <input type="checkbox"/> DM PAPER	7.10	7.30	7.42	7.47	7.45	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	592	595	595	590	597	
PUMP RATE, GPM	3					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SAMPLING  SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_

EQUIPMENT ID ISCO # \_\_\_\_\_  
 GROUNDOS# **ABD 452**  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION **873.0**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NI7 TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC $\mu\text{mhos/cm}$	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 413.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *James E. Cate*  
 RECEIVED BY: *Ken R. Bush*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER NPM 89101

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4/14/92

SITE ID NPM-89-011

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0800 END 0900

PROGRAM C

WEATHER CLOUDY 30°

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE  
 TOP OF CASING CASING STICK-UP (FROM GROUND) 1.65 FT  
 MEASURED PROTECTIVE CASING/WELL DIFF. -0.32 FT  
 HISTORICAL

WELL DEPTH 100 FT  
 WATER DEPTH 86.76 FT  
 HEIGHT OF WATER COLUMN 13 FT

WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A

RISER ELEVATION 862.77  
 GROUNDWATER ELEVATION 776.01

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELLY MATERIAL  PVC  SS  
 AMBIENT AIR — PPM  
 WELL MOUTH — PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	@ 21 GAL	@ 42 GAL	@ 63 GAL	@ 84 GAL	@ 104 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	<u>10.6</u>	<u>10.3</u>	<u>10.3</u>	<u>10.5</u>	<u>10.2</u>	<input checked="" type="checkbox"/> CLEAR
DH, UNITS <input type="checkbox"/> DH PAPER	<u>7.4</u>	<u>7.4</u>	<u>7.4</u>	<u>7.5</u>	<u>7.6</u>	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>587</u>	<u>585</u>	<u>588</u>	<u>582</u>	<u>585</u>	<input type="checkbox"/> COLORED
PUMP RATE, GPM <u>~ 5gpm</u>						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDEOS#  \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER \_\_\_\_\_

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 861.5

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NI7 TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DN7 UW26	NO	4 DEG C	1 L AG			
TP- USEPA 418.1	NO	H2SO4 TO pH<2	1 L GUM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, VA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Vin/ck  
 RECEIVED BY: Nancy E. Potter

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_ OF \_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **NAN8101A**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4-12-92**

SITE ID **NAN-81-01A**

JOB NUMBER **6853-0-**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1245 END 1400**

PROGRAM **C**

WEATHER **Sunny with clouds**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP **2.31** FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. **+3.31** FT  
 MEASURED  
 HISTORICAL  
 WELL DEPTH **141** FT  
 WATER DEPTH **136.47** FT  
 HEIGHT OF WATER COLUMN **4.5** FT  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0** PPM  
 WELL MOUTH **0** PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH  
 RISER ELEVATION **913.50**  
 GROUNDWATER ELEVATION **777.03**

### PURGE DATA

PURGE VOLUME	@ 8.5 GAL	@ 17 GAL	@ 25.5 GAL	@ 34 GAL	@ 42 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	11.2	11.5	11.4	11.7	11.5	<input type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER	7.5	7.4	7.5	7.5	7.5	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	678	667	659	667	668	<input type="checkbox"/> COLCRED
PUMP RATE, GPM						<input type="checkbox"/> TURBID
						<input type="checkbox"/> COOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP ISCO # \_\_\_\_\_  
 BAILER GRUNDFOS# \_\_\_\_\_  
 PVC/SILICON TUBING  2"  4" # \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUIDIX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION **908.32**  
 NUMBER OF FILTERS USED \_\_\_\_\_

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1714	032650.C
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1714	032650.C
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1714	032650.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1715	052810.C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1716	
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1717	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC Um33	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	1718 / 1719 / 1720	042375.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 419.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (CA, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: VAN/CLK  
 RECEIVED BY: Murray E. R...

ABB ENVIRONMENTAL SERVICES, INC.

PAGE \_\_\_\_\_ OF \_\_\_\_\_

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

NAN 8102B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.12.92

SITE ID NAN-81-02B

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1415 END 1530

PROGRAM C

WEATHER Sunny, 40's

WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.1 ± FT

PROTECTIVE CASING/WELL DIFF.

+ .50 FT

WELL DEPTH 145 FT

MEASURED  
 HISTORICAL

WATER DEPTH 138.01 FT

12 GAL/VOL (11.5)

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
WELL LOCKED   
PVC WELL CAP

YES NO N/A

RISER ELEVATION 914.79

HEIGHT OF WATER COLUMN 7 FT

58 TOTAL GAL PURGED (58)

GROUNDWATER ELEVATION 776.98

PURGE H<sub>2</sub>O CONTAINED?  
 VCC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

PURGE DATA

PURGE VOLUME	a 12 GAL	a 24 GAL	a 36 GAL	a 48 GAL	a 58 GAL
TEMP, DEG C	10.6	11.7	11.4	11.3	11.2
pH, UNITS <input type="checkbox"/> pH PAPER	7.4	7.1	7.4	7.4	7.4
SPECIFIC CONDUCTIVITY umhos/cm	268	230	268	253	253
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODCR  
 OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION ~912.5

NUMBER OF FILTERS USED

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1721	082649C
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1721	082649C
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1721	082649C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1722	082649C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1723	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1724	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VCC UM33	NO	HCL, 4 DEG C	(3) 4 ML VIAL	<input checked="" type="checkbox"/>	1725 / 1726 / 1727	042879C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

OTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* Bottom of well extremely silty/mucky

SIGNATURE: Vm/CK  
RECEIVED BY: Nancy E. Porter



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER NAN 8103B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.12.92

SITE ID NAN-81-03B

JOB NUMBER 6853-0-

FILE NAME CGW

LOCATION ACTIVITY START 1545 END 1700

PROGRAM C

WEATHER Sunny, 40's

### WATER LEVEL / WELL DATA

WELL DEPTH 145 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.05 FT

PROTECTIVE CASING/WELL DIFF. 7.31 FT

WATER DEPTH 138.36 FT

12 GAL/VOL (11.5)

WELL INTEGRITY:  
PROT. CASING SECURE  YES  NO  N/A  
CONCRETE COLLAR INTACT  YES  NO  N/A  
WELL LOCKED  YES  NO  N/A  
PVC WELL CAP  YES  NO  N/A

RISER ELEVATION 915.21

HEIGHT OF WATER COLUMN 7 FT

58 TOTAL GAL PURGED (58)

GROUNDWATER ELEVATION 776.85

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	<u>12</u> GAL	<u>24</u> GAL	<u>36</u> GAL	<u>48</u> GAL	<u>58</u> GAL
TEMP, DEG C	<u>10.2</u>	<u>10.5</u>	<u>10.4</u>	<u>10.3</u>	<u>10.7</u>
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.7</u>	<u>7.5</u>	<u>7.5</u>	<u>7.4</u>	<u>7.5</u>
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>518</u>	<u>500</u>	<u>495</u>	<u>495</u>	<u>500</u>
PUMP RATE, GPM					

### SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID 1SCO #  
 SUBMERSIBLE PUMP  GRUNDEQS#       
 BAILER  2"  4" #       
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION -913.1

NUMBER OF FILTERS USED     

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1728</u>	<u>052660.C</u>
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1728</u>	<u>052660.C</u>
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1728</u>	<u>052660.C</u>
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1729</u>	<u>052660.C</u>
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1730</u>	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1731</u>	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VCC <u>Um33</u>	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>1732</u> / <u>1733</u> / <u>1734</u>	<u>042870.C</u>
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Vmick  
 RECEIVED BY: William E. K...

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER NAN8103C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.13.92

SITE ID NAN-81-03C

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1145 END 1300

PROGRAM C

WEATHER cloudy, 30°

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 1.1 FT

PROTECTIVE CASING/WELL DIFF. 0.3 FT

WELL DEPTH 170 FT;  MEASURED  HISTORICAL

WATER DEPTH 138.04 FT

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION 915.02

HEIGHT OF WATER COLUMN 3.2 FT; 35 GAL/VOL (34) TOTAL GAL PURGED 175 (170)

GROUNDWATER ELEVATION 776.98

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS

AMBIENT AIR - PPM WELL MOUTH - PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	@ 35 GAL	@ 70 GAL	@ 105 GAL	@ 140 GAL	@ 175 GAL
TEMP, DEG C	10.1	10.7	10.8	10.2	10.7
pH, UNITS <input type="checkbox"/> pH PAPER	7.31	7.3	7.3	7.2	7.2
SPECIFIC CONDUCTIVITY umhos/cm	129	139	131	130	131
PUMP RATE, GPM	2.8				

SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING	SAMPLING	EQUIPMENT ID	DECON FLUIDS USED	WATER LEVEL EQUIP. USED	GROUND ELEVATION
<input type="checkbox"/>	<input checked="" type="checkbox"/>	PERISTALTIC PUMP ISCO #	<input checked="" type="checkbox"/> POTABLE WATER	<input checked="" type="checkbox"/> ELECTRIC COND. PROBE	913.2
<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUBMERSIBLE PUMP GRUNDEFS# X	<input type="checkbox"/> LIQUINOX	<input type="checkbox"/> FLOAT ACTIVATED	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	BAILER 2" 4" #	<input type="checkbox"/> STEAM CLEANING	<input type="checkbox"/> PRESSURE TRANSDUCER	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	PVC/SILICON TUBING			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	IN-LINE/DISPOSABLE FILTER			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	OTHER			
NUMBER OF FILTERS USED 1					

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	1735	032603C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1735	032603C
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1735	032603C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1736	052310C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1737	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1738	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1739 / 1740 / 1741	0428701C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]*  
 RECEIVED BY: *Marcy E. Kotter*

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER NAN8104B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID NAN-81-04B

JOB NUMBER 6853-0

SAMPLING DATE 4/14/92

LOCATION ACTIVITY START 0800 END 0830

PROGRAM C

FILE NAME CGW

WEATHER Cloudy 30%

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 1.2 FT  
 PROTECTIVE CASING/WELL DIFF. - FT

WELL DEPTH 156 FT  
 MEASURED  
 HISTORICAL

WATER DEPTH 1-1900 FT  
 RISER ELEVATION 925.91

HEIGHT OF WATER COLUMN 7 FT  
 GAL/VOL 11.5  
 TOTAL GAL PURGED 58

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

GROUNDWATER ELEVATION 776.91

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR - PPM  
 WELL MOUTH - PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	<u>12</u> GAL	<u>24</u> GAL	<u>36</u> GAL	<u>48</u> GAL	<u>60</u> GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLGRED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.0</u>	<u>10.4</u>	<u>10.6</u>	<u>10.7</u>	<u>10.7</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>6.6</u>	<u>7.7</u>	<u>7.8</u>	<u>7.7</u>	<u>7.7</u>	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>1008</u>	<u>100</u>	<u>1006</u>	<u>536</u>	<u>594</u>	
PUMP RATE, GPM	<u>4.3</u>					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID: PERISTALTIC PUMP ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP GRUNDEDS# 5  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER \_\_\_\_\_  
 OTHER \_\_\_\_\_

DECON FLUIDS USED:  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PRGBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION ~922.1

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1742</u>	<u>0326601C</u>
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1742</u>	<u>0326601C</u>
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1742</u>	<u>0326601C</u>
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1743</u>	<u>0528101C</u>
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1744</u>	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1745</u>	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC <u>um33</u>	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	<u>1746</u>	<u>0428701C</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>1747</u>	<u>1748</u>
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DN: UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SE, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: J. P. [Signature] / DL  
 RECEIVED BY: Nancy E. [Signature]

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER NAN 81104C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.14.92

SITE ID NAN-81-04C

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0900 END 1000

PROGRAM C

WEATHER CLOUDY 30s

WATER LEVEL / WELL DATA

TOP OF WELL MEASURED  
 TOP OF CASING HISTORICAL

WELL DEPTH 177 FT

WATER DEPTH 148.3 FT

HEIGHT OF WATER COLUMN 29 FT

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.95 FT

PROTECTIVE CASING/WELL DIFF. .40 FT

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION 925.25

GROUNDWATER ELEVATION 776.95

PERME 420 CONTAINED?  VCC  DNT  NO  PVC  SS

WELL MATERIAL PVC

AMBIENT AIR - PPM

WELL MOUTH - PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	@ 30 GAL	@ 60 GAL	@ 90 GAL	@ 120 GAL	@ 150 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURB'D <input type="checkbox"/> OOCR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.48</u>	<u>10.6</u>	<u>10.7</u>	<u>10.4</u>	<u>10.5</u>	
PH, UNITS <input type="checkbox"/> PH PAPER	<u>7.50</u>	<u>7.3</u>	<u>7.5</u>	<u>7.3</u>	<u>7.5</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>431</u>	<u>455</u>	<u>453</u>	<u>454</u>	<u>455</u>	
PUMP RATE, GPM	<u>2.8</u>					

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  IS60 # \_\_\_\_\_

SUBMERSIBLE PUMP  GRUNDFOS# >

BAILER  2"  4" # \_\_\_\_\_

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION ~922.8

NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1749	0326601C
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1749	0326601C
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1749	0326601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1750	0528101C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1751	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1752	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1753	0326601C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

SIGNATURE: J. De.../DL  
 RECEIVED BY: W. Nancy E. ...

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PAGE \_\_\_\_\_ OF \_\_\_\_\_

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **OPM 8901**

PROJECT **USATHAMA-GAAP**

SITE TYPE **WELL**

SAMPLING DATE **4992**

SITE ID **OPM-89-01**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1045 END 1200**

PROGRAM **C**

WEATHER **partly rain**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE  
 TOP OF CASING CASING STICK-UP (FROM GROUND) **2.1 FT.** PROTECTIVE CASING/WELL DIFF. **25 FT.**

WELL DEPTH **88 FT.**  MEASURED  HISTORICAL  
 WATER DEPTH **55.90 FT.** WELL INTEGRITY: YES NO N/A  
 HEIGHT OF WATER COLUMN **32 FT.** **35** GAL/VOL **36.5** PROT. CASING SECURE  CONCRETE COLLAR INTACT   
**42** TOTAL GAL PURGED **15** WELL LOCKED  PVC WELL CAP

RISER ELEVATION **925.99**  
 GROUNDWATER ELEVATION **870.09**

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR  PPM WELL MOUTH  PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 15 GAL	@ 35 GAL	@ _____ GAL	@ _____ GAL	@ _____ GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<b>11.2</b>	<b>11.3</b>	/	/	/	
PH, UNITS <input type="checkbox"/> PH PAPER	<b>7.6</b>	<b>7.5</b>	/	/	/	
SPECIFIC CONDUCTIVITY umhos/cm	<b>917</b>	<b>772</b>	/	/	/	

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

EQUIPMENT ID **ISCO # \_\_\_\_\_**  
 PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER \_\_\_\_\_

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION **924.3**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			1510	0122801C
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	SB03	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			1510	0122801C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		1511	0702101C
CL	TT08	YES	4 DEG C	500 ML POLY		1512	
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		1513	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3) 40 ML VIAL		1514 / 1515 / 1516	0428701C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG			
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG			
DNT	UN26	NO	4 DEG C	1 L AG			
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GW			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

well ran dry at 42 gallons  
 let recharge then sampled. Recharged quickly.

SIGNATURE: *J. Leonard / DL*  
 RECEIVED BY: *Nancy E. Kofia*

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PAGE      OF     

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER OPM8902

PROJECT: USATHAMA-BAAP  
 SITE ID: OPM-89-02  
 LOCATION ACTIVITY: START 0900 END 1000

SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C  
 SAMPLING DATE: 4.8.92  
 FILE NAME: CGW  
 WEATHER: Sunny, 53°

WATER LEVEL / WELL DATA

WELL DEPTH: 115 FT.  MEASURED  HISTORICAL  
 WATER DEPTH: 101.41 FT.  
 HEIGHT OF WATER COLUMN: 13.5 FT.  
 TOP OF WELL TOP OF CASING PROTECTIVE CASING STICK-UP (FROM GROUND) 2.1 ± FT.  
 PROTECTIVE CASING/WELL DIFF. -.15 FT.  
 RISER ELEVATION: 879.46  
 GROUNDWATER ELEVATION: 778.05  
 WELLS INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0 PPM  
 WELL MOUTH 0 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	23 GAL	46 GAL	69 GAL	92 GAL	115 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.4</u>	<u>10.4</u>	<u>10.4</u>	<u>10.4</u>	<u>10.4</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.7</u>	<u>7.7</u>	<u>7.7</u>	<u>7.7</u>	<u>7.7</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>384</u>	<u>384</u>	<u>385</u>	<u>385</u>	<u>385</u>	
PUMP RATE, GPM <u>~ 2.5</u>						

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER   
 EQUIPMENT ID: ISCO #      GRUNDEOS#      2"  4"   
 DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION: 877.6  
 NUMBER OF FILTERS USED:     

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1519</u>	<u>02225010</u>
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1519</u> <u>1520</u>	<u>02225010</u> <u>05231010</u>
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1521</u>	
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1522</u>	
ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS	NO	4 DEG C		<input type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	<u>1523</u> / <u>1524</u> / <u>1525</u>	<u>02123010</u>
BN/A	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>		
NG	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Vm/CK  
 RECEIVED BY: W Nancy E. Roro

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE      OF     

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER OPM89103

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.8.92

SITE ID OPM-89-03

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1330 END 1430

PROGRAM C

WEATHER cloudy, 50's

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.0 FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. 0.24 FT

WELL DEPTH 164 FT  MEASURED  HISTORICAL

WATER DEPTH 152.75 FT

HEIGHT OF WATER COLUMN 12 FT

WELL INTEGRITY: YES  NO  N/A

PROT. CASING SECURE

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

RISER ELEVATION 929.75

GROUNDWATER ELEVATION 777.00

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS

WELL MATERIAL AMBIENT AIR 0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	<u>20</u> GAL				
TEMP, DEG C	<u>13.5</u>	/	/	/	/
PH, UNITS <input type="checkbox"/> PH PAPER	<u>7.8</u>	/	/	/	/
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>545</u>	/	/	/	/
PUMP RATE, GPM					

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO #

SUBMERSIBLE PUMP  GRUNDEOS# X

BAILER  2"  4" #

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PRGBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION 928.2

NUMBER OF FILTERS USED     

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1528</u>	<u>07228016</u>
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	<u>1528</u>	<u>07228016</u>
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1529</u>	<u>07031016</u>
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1530</u>	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1531</u>	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<u>1532</u>	<u>04228016</u>
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<u>1533</u>	<u>1534</u>
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

Initially put pump on bottom and purge to dryness, pretty slowly. We tried bringing the pump up and pumping but it quit quickly when it down. Pumped 250 gallons total. Sampled after 1 volume.

SIGNATURE: J. P. ...  
 RECEIVED BY: Nancy E. Rofka

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 0AM911011

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.14.92

SITE ID 0AM-91-011

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 16:30 END 17:00

PROGRAM C

WEATHER CLOUDY 30'

### WATER LEVEL / WELL DATA

WELL DEPTH 98 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 1.7± FT

PROTECTIVE CASING/WELL DIFF. -.13 FT

WATER DEPTH 91.36 FT

11.5 GAL/VOL (11.5)

WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION 877.04

HEIGHT OF WATER COLUMN ~7 FT

55 TOTAL GAL PURGED (55)

GROUNDWATER ELEVATION 785.68

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR — PPM

WELL MOUTH — PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME	<u>11</u> GAL	<u>22</u> GAL	<u>33</u> GAL	<u>47</u> GAL	<u>55</u> GAL
TEMP, DEG C	<u>10.0</u>	<u>10.4</u>	<u>10.5</u>	<u>10.4</u>	<u>10.4</u>
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.6</u>	<u>7.6</u>	<u>7.7</u>	<u>7.7</u>	<u>7.6</u>
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>480</u>	<u>483</u>	<u>487</u>	<u>485</u>	<u>488</u>
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING   
 SAMPLING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO #  
 GRUNDFOSS#   
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 875.1

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2			<u>1774</u>	<u>1032600C</u>
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2			<u>1774</u>	<u>032600C</u>
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			<u>1774</u>	<u>032600C</u>
NIT	YES	H2SO4 TO pH<2	500 ML POLY		<u>1775</u>	<u>1052810C</u>
CL	YES	4 DEG C	500 ML POLY		<u>1776</u>	
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY		<u>1777</u>	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>1778</u>	<u>042870C</u>
BN/A	NO	4 DEG C	(2) 1 L AG		<u>1779</u>	<u>1780</u>
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Vmick  
 RECEIVED BY: Wmancy E. Rofa



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 0AM8901

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4/14/92

SITE ID 0AM-89-011

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 15:30 END 16:30

PROGRAM C

WEATHER cloudy 30

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 1.31 FT.    
  TOP OF CASING PROTECTIVE CASING/WELL DIFF. -.09 FT.

WELL DEPTH 102.5 FT.    
  MEASURED    
  HISTORICAL

WATER DEPTH 88.30 FT.    
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

HEIGHT OF WATER COLUMN 14 FT.    
 TOTAL GAL PURGED 116

PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  NO    
 WELL MATERIAL  PVC  SS    
 AMBIENT AIR      PPM    
 WELL MOUTH      PPM

RISER ELEVATION 874.38  
 GROUNDWATER ELEVATION 786.68  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	<u>23</u> GAL	<u>46</u> GAL	<u>69</u> GAL	<u>92</u> GAL	<u>116</u> GAL	SAMPLE OBSERVATIONS: <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.1</u>	<u>10.7</u>	<u>10.6</u>	<u>10.7</u>	<u>10.6</u>	
PH, UNITS <input type="checkbox"/> PH PAPER	<u>7.6</u>	<u>7.5</u>	<u>7.6</u>	<u>7.5</u>	<u>7.5</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>725</u>	<u>738</u>	<u>745</u>	<u>741</u>	<u>742</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP     EQUIPMENT ID ISCO #  
 SAMPLING  SUBMERSIBLE PUMP     GRUNDFOS# 2  
 BAILER  2"  4" #  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION: 872.2  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CA	SS16	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>	<u>1756</u>	<u>0326601C</u>
<input checked="" type="checkbox"/> NA	SS16	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CD	SS16	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> CR	SS16	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HG	SB03	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> PB	SD24	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>	<u>1756</u>	<u>0326601C</u>
<input checked="" type="checkbox"/> NI	SS16	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> BA	SS16	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> HARD	USEPA 130.2	YES	HNO3 TO pH<2	<input checked="" type="checkbox"/>	<u>1756</u>	<u>0326601C</u>
<input checked="" type="checkbox"/> NIT	TF10	YES	H2SO4 TO pH<2	<input checked="" type="checkbox"/>	<u>1757</u>	<u>0326601C</u>
<input checked="" type="checkbox"/> CL	TT08	YES	4 DEG C	<input checked="" type="checkbox"/>	<u>1758</u>	
<input checked="" type="checkbox"/> SO4	TT08	YES	4 DEG C	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> ALK	USEPA 310.1	NO	4 DEG C	<input checked="" type="checkbox"/>	<u>1759</u>	
<input checked="" type="checkbox"/> TDS	USEPA 160.1	NO	4 DEG C	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TOC	USEPA 415.1	NO	H2SO4 TO pH<2	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> VOC	UM33	NO	HCL, 4 DEG C	<input checked="" type="checkbox"/>	<u>1760</u> / <u>1761</u> / <u>1762</u>	<u>0428701C</u>
<input checked="" type="checkbox"/> BN/A	UM16	NO	4 DEG C (2) 1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NG	99	NO	4 DEG C 1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> NAM	UN06	NO	4 DEG C 1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> DNT	UW26	NO	4 DEG C 1 L AG	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/> TPH	USEPA 418.1	NO	H2SO4 TO pH<2 1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: VM/CK  
 RECEIVED BY: Nancy E. Poiré

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PAGE 1 OF 1

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 0AM8902

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4-15-92

SITE ID 0AM-89-02

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0800 END 0900

PROGRAM C

WEATHER rain, 40°S

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP 2.7± FT  
 TOP OF CASING (FROM GROUND)  
 WELL DEPTH 102.5 FT  MEASURED  HISTORICAL  
 WATER DEPTH 89.13 FT 21 GAL/VOL (21.5)  
 HEIGHT OF WATER COLUMN 13 FT 108 TOTAL GAL PURGED (108)  
 WELL INTEGRITY: YES NO N/A  
 PRCT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PROTECTIVE CASING/WELL DIFF. -0.32 FT  
 RISER ELEVATION 874.91  
 GROUNDWATER ELEVATION 785.78  
 PURGE ADD CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR PPM WELL MOUTH PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	22 GAL	44 GAL	66 GAL	88 GAL	108 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	10.4	11.5	11.6	11.5	11.4	<input type="checkbox"/> CLEAR
PH, UNITS <input type="checkbox"/> PH PAPER	7.1	7.5	7.5	7.5	7.5	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	648	679	693	681	657	<input type="checkbox"/> COLORED
PUMP RATE, GPM						<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PERISTALTIC PUMP EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP GROUND#  
 BAILER 2"  4" #  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 872.4  
 NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	1765	032601C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1765	032601C
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1765	032601C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1766	052810C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1767	
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1768	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1769	1770 / 1771 / 042371C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Vm/ck  
 RECEIVED BY: Nancy E. Rotta

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PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

**FTM 8901**

PROJECT **USATHAMA-BAAP**

SITE TYPE

**WELL**

SITE ID

**FTM-89-011**

JOB NUMBER

**6853-0-**

SAMPLING DATE

**4/21/92**

LOCATION ACTIVITY

**START 1400 END 1500**

PROGRAM

**C**

FILE NAME

**CGW**

WEATHER

**Cloudy, 40's**

### WATER LEVEL / WELL DATA

WELL DEPTH

**101.5 FT**

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

**2.0 FT**

PROTECTIVE CASING/WELL DIFF.

**-0.2 FT**

WATER DEPTH

**88.62 FT**

**22**

GAL/VOL

**21.5**

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
PVC WELL CAP

YES NO N/A

RISER ELEVATION

**874.27**

HEIGHT OF WATER COLUMN

**12.85 FT**

**108**

TOTAL GAL PURGED

**108**

GROUNDWATER ELEVATION

**785.65**

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR **20** PPM

WELL MOUTH **20** PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

### PURGE DATA

PURGE VOLUME

**@ 22 GAL**

**@ 44 GAL**

**@ 66 GAL**

**@ 88 GAL**

**@ 108 GAL**

TEMP, DEG C

**11.0**

**11.1**

**11.3**

**10.6**

**11.2**

pH, UNITS  pH PAPER

**6.9**

**7.1**

**7.2**

**7.2**

**7.2**

SPECIFIC CONDUCTIVITY  $\mu$ mhos/cm

**1300**

**1310**

**985**

**1310**

**997**

PUMP RATE, GPM

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 CODR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID

ISCO #  
GRUNDEOS#   
2" 4" #

DECON FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

**272.4**

NUMBER OF FILTERS USED

**1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA	YES	SS16				
<input type="checkbox"/> NA	YES	SS16				
<input type="checkbox"/> CD	YES	SS16				
<input type="checkbox"/> CR	YES	SS16				
<input type="checkbox"/> HG	YES	S803				
<input type="checkbox"/> PB	YES	SD24				
<input type="checkbox"/> NI	YES	SS16				
<input type="checkbox"/> BA	YES	SS16				
<input type="checkbox"/> HARD	YES	USEPA 130.2			1792	C225101C
<input type="checkbox"/> NIT	YES	TF10	H2SO4 TO pH<2	500 ML POLY	1793	
<input type="checkbox"/> CL	YES	TT08	4 DEG C	500 ML POLY	1794	
<input type="checkbox"/> SO4	YES	TT08	4 DEG C			
<input type="checkbox"/> ALK	NO	USEPA 310.1	4 DEG C	500 ML POLY	1795	
<input type="checkbox"/> TDS	NO	USEPA 160.1	4 DEG C			
<input type="checkbox"/> TOC	NO	USEPA 415.1	H2SO4 TO pH<2	(3)40 ML VIAL		
<input type="checkbox"/> NH3N2	NO	USEPA 350.2	H2SO4 TO pH<2	500 ML POLY		
<input type="checkbox"/> VOC	NO	um33	HCL, 4 DEG C	(3)40 ML VIAL	1796 / 1797 / 1798	C425-01C
<input type="checkbox"/> BN/A	NO	UM16	4 DEG C	(2) 1 L AG	1799 / 1800	C225101C
<input type="checkbox"/> NG	NO	99	4 DEG C	1 L AG		
<input type="checkbox"/> NAM	NO	UN06	4 DEG C	1 L AG		
<input type="checkbox"/> DNT	NO	UW26	4 DEG C	1 L AG		
<input type="checkbox"/> TPH	NO	USEPA 418.1	H2SO4 TO pH<2	1 L GWM	1801	C225101C

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, S803, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: **JH-CK**

RECEIVED BY: **Paul R. Rosta**

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PAGE 1 OF 1

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN9101C**

PROJECT: **USATHAMA-BAAP**

SITE TYPE: **WELL**

SAMPLING DATE: **4/24/92**

SITE ID: **PBN-91-01C**

JOB NUMBER: **6853-04**

FILE NAME: **CGW**

LOCATION ACTIVITY: START **1230** END **1600**

PROGRAM: **C**

WEATHER: **RAIN 40S**

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.35** FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. **-16** FT

WELL DEPTH: **154.5** FT  MEASURED  HISTORICAL

WATER DEPTH: **85.95** FT

HEIGHT OF WATER COLUMN: **68.6** FT

WELL INTEGRITY: YES  NO  N/A

PROT. CASING SECURE

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

RISER ELEVATION: **830.04**

GROUNDWATER ELEVATION: **744.09**

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL:  PVC  SS

AMBIENT AIR: **—** PPM

WELL MOUTH: **—** PPM

PURGE DATA

PURGE VOLUME	1:30	1:56	2:22	2:48	3:14	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
	@ <b>69</b> GAL	@ <b>128</b> GAL	@ <b>192</b> GAL	@ <b>256</b> GAL	@ <b>320</b> GAL	
TEMP, DEG C	<b>10.5</b>	<b>11.0</b>	<b>11.0</b>	<b>11.2</b>	<b>11.2</b>	
PH, UNITS <input type="checkbox"/> PH PAPER	<b>7.71</b>	<b>7.73</b>	<b>7.74</b>	<b>7.74</b>	<b>7.74</b>	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<b>709</b>	<b>706</b>	<b>710</b>	<b>714</b>	<b>716</b>	

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID: **ISCO #**

SUBMERSIBLE PUMP  GRUNDFOS#

BAILER  2"  4" #

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION: **828.0**

NUMBER OF FILTERS USED: **1**

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
CA	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
CO	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>	<b>1840</b>	<b>052601C</b>
CR	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HN03 TO pH<2		<input checked="" type="checkbox"/>	<b>1840</b>	<b>032601C</b>
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<b>1841</b>	<b>052601C</b>
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<b>1842</b>	
SO4	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<b>1843</b>	
IDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VCC	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	<b>1844</b> / <b>1845</b> / <b>1846</b>	<b>042601C</b>
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	<b>1847</b> / <b>1848</b>	<b>022601C</b>
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Carly R. Pevel*  
 RECEIVED BY: *Paul R. Pevel*

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN 9102B

PROJECT USATHAMA-SAAP

SITE TYPE

WELL

SITE ID PBN-91-02B

JOB NUMBER

6853-04

SAMPLING DATE

4/28/92

LOCATION

PROGRAM

C

FILE NAME

CGW

ACTIVITY

START 1530

END

1700

WEATHER

SMO

### WATER LEVEL / WELL DATA

WELL DEPTH 118 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.15 FT

PROTECTIVE CASING/WELL DIFF.

1.14 FT

WATER DEPTH 77.35 FT

43 GAL/VOL

WELL INTEGRITY:

YES NO N/A

RISER ELEVATION

821.20

HEIGHT OF WATER COLUMN 40.7 FT

214 TOTAL GAL PURGED

PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
PVC WELL CAP

GROUNDWATER ELEVATION

743.85

PURGE H2O CONTAINED?  
 VCC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0.0 PPM

WELL DIAMETER  
 2 INCH  
 4 INCH  
 6 INCH

### PURGE DATA

PURGE VOLUME

2:33	2:36	2:49	3:02	3:15
@ 43 GAL	@ 86 GAL	@ 129 GAL	@ 172 GAL	@ 24 GAL

SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

TEMP, DEG C

11.5	11.3	11.5	11.6	11.7
------	------	------	------	------

pH, UNITS  pH PAPER

7.72	7.57	7.73	7.76	7.76
------	------	------	------	------

SPECIFIC CONDUCTIVITY umhos/cm

704	75	714	711	701
-----	----	-----	-----	-----

PUMP RATE, GPM

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

- PERISTALTIC PUMP
- SUBMERSIBLE PUMP
- BAILER
- PVC/SILICON TUBING
- IN-LINE/DISPOSABLE FILTER
- OTHER

EQUIPMENT ID

ISCO #  
GRUNDFOS# HAZO  
 2"  4" #

DECON FLUIDS USED

- POTABLE WATER
- LIQUINOX
- STEAM CLEANING

WATER LEVEL EQUIP. USED

- ELECTRIC COND. PROBE
- FLOAT ACTIVATED
- PRESSURE TRANSDUCER

GROUND ELEVATION

819.0

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2			1852	032660.C
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2			1858	032660.C
<input type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1859	092310.C
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		1850	
<input type="checkbox"/> SO4 TT08	YES	4 DEG C	500 ML POLY			
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1851	
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL		1862	042870.C
<input type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG		1865	022810.C
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input type="checkbox"/> DNT UW25	NO	4 DEG C	1 L AG			
<input type="checkbox"/> TPH USEPA 419.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:1CP)

SIGNATURE: *George R. Bell*

RECEIVED BY: *Karl R. Rantz*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBN 91102C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.28.92

SITE ID PBN-91-02C

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1300 END 1500

PROGRAM C

WEATHER Sunny

WATER LEVEL / WELL DATA

WELL DEPTH 163.5 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.27 FT

PROTECTIVE CASING/WELL DIFF. - 18 FT

WATER DEPTH 78.03 FT

76 GAL/VOL 76

WELL INTEGRITY: PROT. CASING SECURE YES NO N/A  
CONCRETE COLLAR INTACT  
WELL LOCKED  
PVC WELL CAP

RISER ELEVATION 221.92

HEIGHT OF WATER COLUMN 85.5 FT

379 TOTAL GAL PURGED

GROUNDWATER ELEVATION 743.84

PURGE H2O CONTAINED? VOC DNT NO

WELL MATERIAL PVC SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0.0 PPM

WELL DIAMETER 2 INCH 4 INCH

PURGE DATA

PURGE VOLUME	12 28	12 37	12 56	13 05	13 34	13 43
	76 GAL	158 GAL	234 GAL	310 GAL	380 GAL	
TEMP, DEG C	12.1	11.7	11.9	11.6	11.5	
PH, UNITS	7.75	7.86	7.90	7.88	7.83	
SPECIFIC CONDUCTIVITY umhos/cm	622	627	626	630	620	
PUMP RATE, GPM	4					

SAMPLE OBSERVATIONS  
CLEAR  
CLOUDY  
COLORED  
TURBID  
ODOR  
OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

URGING	SAMPLING	EQUIPMENT ID	DECON FLUIDS USED	WATER LEVEL EQUIP. USED	GROUND ELEVATION
		PERISTALTIC PUMP	POTABLE WATER	ELECTRIC COND. PROBE	819.9
		SUBMERSIBLE PUMP	LIQUINOX	FLOAT ACTIVATED	
		BAILER	STEAM CLEANING	PRESSURE TRANSDUCER	
		PVC/SILICON TUBING			
		IN-LINE/DISPOSABLE FILTER			
		OTHER			
			NUMBER OF FILTERS USED		

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2			1867	0326601C
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1867	0326601C
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1868	0328101C
CL	YES	4 DEG C	500 ML POLY		1869	
SO4	YES	4 DEG C	500 ML POLY		1870	
ALK	NO	4 DEG C	500 ML POLY			
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		1871	0428701C
BN/A	NO	4 DEG C	(2) 1 L AG		1874	0228101C
NG	NO	4 DEG C	.1 L AG		1875	
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES: PP METALS (AG, AC, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CO, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *James E. Carter ICP*  
RECEIVED BY: *Robert R. Brantel*

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN 9110318**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4-28-92**

SITE ID **PBN-911-0318**

JOB NUMBER **6853-0-**

FILE NAME **CGW**

LOCATION ACTIVITY **START 1130 END 1330**

PROGRAM **C**

WEATHER **SUNNY**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.14** FT  
 TOP OF CASING **1.45** FT  
 PROTECTIVE CASING/WELL DIFF. **0.69** FT  
 WELL DEPTH **108.5** FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH **71.95** FT  
 RISER ELEVATION **814.72**  
 HEIGHT OF WATER COLUMN **36.6** FT  
**42** GAL/VOL **42**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 GROUNDWATER ELEVATION **742.77**  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.0** PPM  
 WELL MOUTH **0.0** PPM  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	10:32	10:42	10:52	11:02	11:12	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
	@ 42 GAL	@ 84 GAL	@ 126 GAL	@ 168 GAL	@ 209 GAL	
TEMP, DEG C	12.0	11.6	11.6	11.6	11.5	
pH, UNITS <input type="checkbox"/> pH PAPER	7.69	7.70	7.75	7.72	7.72	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	673	655	658	657	658	
PUMP RATE, GPM	4					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDFOS# **HA2601**  
 2"  4" # \_\_\_\_\_  
 DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION **812.7**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1865	0520001
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1865	0520001
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1866	052512
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1867	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1868	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC um.33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1869 / 1890 / 1891	052512
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1892 / 1893	052512
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Laura E. Carter / LEP*  
 RECEIVED BY: *Paul R. [Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN91103C**

PROJECT **USATHAMA-SAAP**

SITE TYPE **WELL**

SAMPLING DATE **4 28 92**

SITE ID **PBN-911-03C**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0800 END 1100**

PROGRAM **C**

WEATHER **sun - 50's**

### WATER LEVEL / WELL DATA

WELL DEPTH **154.5 FT**

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) **2.11 FT**

PROTECTIVE CASING/WELL DIFF. **-.14 FT**

WATER DEPTH **71.4 FT**

**74** GAL/VOL **74**

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION **814.37**

HEIGHT OF WATER COLUMN **83.1 FT**

**36.9** TOTAL GAL PURGED

GROUNDWATER ELEVATION **742.97**

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  OMT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR **0.0** PPM

WELL MOUTH **0.0** PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 1 INCH

### PURGE DATA

PURGE VOLUME

**08 33** **08 52** **09 11** **09 27** **09 48** **10 06**

TEMP, DEG C  
 PH, UNITS  PH PAPER  
 SPECIFIC CONDUCTIVITY umhos/cm  
 PUMP RATE, GPM

	<b>08 33</b>	<b>08 52</b>	<b>09 11</b>	<b>09 27</b>	<b>09 48</b>	<b>10 06</b>
PURGE VOLUME	<b>74</b> GAL					
TEMP, DEG C	<b>11.3</b>	<b>10.9</b>	<b>10.5</b>	<b>11.4</b>	<b>11.3</b>	
PH, UNITS	<b>7.10</b>	<b>7.74</b>	<b>7.79</b>	<b>7.78</b>	<b>7.80</b>	
SPECIFIC CONDUCTIVITY	<b>545</b>	<b>550</b>	<b>553</b>	<b>552</b>	<b>562</b>	
PUMP RATE, GPM	<b>4</b>					

### SAMPLE OBSERVATIONS

- CLEAR
- CLOUDY
- COLORED
- TURBID
- ODOR
- OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID  
 ISCO #  
 GRUNDFOS # **HAZCO 1**  
 2"  4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION **812.3**

NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC Um33	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Frank E. Carter*  
 RECEIVED BY: *Paul R. Rustad*



ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER PBM9001D

PROJECT USATHAMA-BAAP  
 SITE ID PBM-90-01D  
 LOCATION ACTIVITY START 1300 END 1200

SITE TYPE WELL  
 JOB NUMBER 6853-C  
 PROGRAM C  
 SAMPLING DATE 4/24/92  
 FILE NAME CGW  
 WEATHER RAIN 40'S

WATER LEVEL / WELL DATA

WELL DEPTH 214 FT.  MEASURED  HISTORICAL  
 WATER DEPTH 87.2 FT.  
 HEIGHT OF WATER COLUMN 126.8 FT.  
 TOP OF WELL  TOP OF CASING   
 PROTECTIVE CASING STICK-UP (FROM GROUND) 2.43 FT.  
 PROTECTIVE CASING/WELL DIFF. 20 FT.  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H2O CONTAINED?  VCC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR PPM WELL MOUTH PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH  
 RISER ELEVATION 731.53  
 GROUNDWATER ELEVATION 744.33

PURGE DATA

PURGE VOLUME	1:16	1:42	2:08	2:34	3:00	SAMPLE OBSERVATIONS
	<u>102</u> GAL	<u>204</u> GAL	<u>306</u> GAL	<u>408</u> GAL	<u>510</u> GAL	<input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11</u>	<u>10.4</u>	<u>10.5</u>	<u>11.1</u>	<u>11.2</u>	
pH, UNITS <input type="checkbox"/> PH PAPER	<u>7.51</u>	<u>7.78</u>	<u>7.79</u>	<u>7.71</u>	<u>7.82</u>	
SPECIFIC CONDUCTIVITY umhos/cm.	<u>632</u>	<u>639</u>	<u>641</u>	<u>639</u>	<u>642</u>	
PUMP RATE, GPM	<u>4</u>					

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP EQUIPMENT ID \_\_\_\_\_  
 SUBMERSIBLE PUMP ISCO # \_\_\_\_\_  
 BAILER GRUNDFOS#  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 1  
 NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC UM33	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BAVA UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE Garrett R. Pollock  
 RECEIVED BY: Bob K. Buehler

ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PBM9002D

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.28.92

SITE ID PBM-90-02D

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1300 END 1530

PROGRAM C

WEATHER SUNNY 50s

WATER LEVEL / WELL DATA

WELL DEPTH 207 FT.  MEASURED  HISTORICAL

WATER DEPTH 776 FT.

HEIGHT OF WATER COLUMN 129.4 FT.

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.28 FT.

PROTECTIVE CASING/WELL DIFF. +.21 FT.

WELL INTEGRITY: PROT. CASING SECURE  YES  NO  N/A

CONCRETE COLLAR INTACT  YES  NO  N/A

WELL LOCKED  YES  NO  N/A

PVC WELL CAP  YES  NO  N/A

RISER ELEVATION 821.32

GROUNDWATER ELEVATION 743.72

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR 0.1 PPM

WELL MOUTH 0.1 PPM

WELL DIAMETER  2 INCH  4 INCH  6 INCH

PURGE DATA

	12:08	12:34	13:00	13:26	13:52	14:08	SAMPLE OBSERVATIONS
PURGE VOLUME	104 GAL	208 GAL	3.2 GAL	416 GAL	520 GAL		
TEMP, DEG C	12.4	11.7	11.9	12.2	11.7		<input type="checkbox"/> CLOUDY
pH, UNITS <input type="checkbox"/> pH PAPER	7.97	7.91	7.92	8.03	8.02		<input type="checkbox"/> COLORED
SPECIFIC CONDUCTIVITY umhos/cm	451	477	484	453	482		<input type="checkbox"/> TURBID
PUMP RATE, GPM	4						<input type="checkbox"/> ODOR
							<input type="checkbox"/> OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

SAMPLING  PERISTALTIC PUMP  SUBMERSIBLE PUMP  BAILER  PVC/SILICON TUBING  IN-LINE/DISPOSABLE FILTER  OTHER

EQUIPMENT ID ISCO # GRUNDFOS# 483 Z 2" 4" #

DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION

NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2			1876	032640.C
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1876	032640.C
NI7 TF10	YES	H2SO4 TO pH<2	500 ML POLY		1877	052810.C
CL TT08	YES	4 DEG C	500 ML POLY		1878	
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1877	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL		1880	042320.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1883	022810.C
NG 99	NO	4 DEG C	1 L AG		1884	
NAM UN05	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Juan E. Cota*  
 RECEIVED BY: *Paul R. Finelli*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBM90103D**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4/28/92**

SITE ID **PBM-90-03D**

JOB NUMBER **6853-C**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0800 END 1130**

PROGRAM **C**

WEATHER **SUNNY 40**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **1 45 FT**  
 TOP OF CASING  
 MEASURED  
 HISTORICAL  
 PROTECTIVE CASING/WELL DIFF. **+ 31 FT**  
 WELL DEPTH **201 FT**  
 WATER DEPTH **71 95 FT**  
 RISER ELEVATION **814.79**  
 WEIGHT OF WATER COLUMN **129.1 FT**  
**105 GAL/VOL**  
**525 TOTAL GAL PURGED**  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 GROUNDWATER ELEVATION **742.84**  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **CO** PPM  
 WELL MOUTH **0.0** PPM  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	@ 105 GAL	@ 210 GAL	@ 315 GAL	@ 420 GAL	@ 525 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	11.0	11.2	11.7	11.8	11.6	
PH, UNITS <input type="checkbox"/> PH PAPER	7.84	7.96	7.90	7.96	7.88	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	467	472	467	477	477	
PUMP RATE, GPM	4					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SAMPLING  SUBMERSIBLE PUMP  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GRUNDFOS# **A28-2**  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING  \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER  \_\_\_\_\_  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION \_\_\_\_\_  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1903	222000
<input type="checkbox"/> CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
<input type="checkbox"/> HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1903	222000
<input type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1904	222000
<input type="checkbox"/> CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1905	
<input type="checkbox"/> SO4	YES	4 DEG C		<input checked="" type="checkbox"/>		
<input type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1906	
<input type="checkbox"/> TDS	NO	4 DEG C		<input checked="" type="checkbox"/>		
<input type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input checked="" type="checkbox"/>		
<input type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
<input type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	1907	222000
<input type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1910	222000
<input type="checkbox"/> NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input type="checkbox"/> NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input type="checkbox"/> DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
<input type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *James E. Carter*  
 RECEIVED BY: *Paul R. [unclear]*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBM190104B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4/24/92**

SITE ID **PBM-190-04B**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0800 END 1000**

PROGRAM **C**

WEATHER **OVERCAST 70's**

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.0 FT**  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. **- .07 FT**  
 WELL DEPTH **120.5 FT**  MEASURED  HISTORICAL  
 WATER DEPTH **90.17 FT**  
 HEIGHT OF WATER COLUMN **30.4 FT** **36 GAL/VOL** WELL INTEGRITY: YES NO N/A  
**181 TOTAL GAL PURGED** PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 AMBIENT AIR **00 PPM** WELL MOUTH **00 PPM**  
 WELL DIAMETER  2 INCH  4 INCH  INCH  
 RISER ELEVATION **830.00**  
 GROUNDWATER ELEVATION **739.83**

PURGE DATA

PURGE VOLUME	8.53	9.11	9.37	9.57	10.15	SAMPLE OBSERVATIONS
	<b>236 GAL</b>	<b>272 GAL</b>	<b>2108 GAL</b>	<b>2144 GAL</b>	<b>2181 GAL</b>	<input type="checkbox"/> CLEAR
TEMP, DEG C	<b>16.6</b>	<b>16.2</b>	<b>10.2</b>	<b>10.1</b>	<b>10.4</b>	<input type="checkbox"/> CLOUDY
PH, UNITS <input type="checkbox"/> PH PAPER	<b>7.26</b>	<b>7.75</b>	<b>7.84</b>	<b>7.87</b>	<b>7.86</b>	<input type="checkbox"/> COLORED
SPECIFIC CONDUCTIVITY umhos/cm	<b>466</b>	<b>460</b>	<b>462</b>	<b>467</b>	<b>462</b>	<input type="checkbox"/> TURBID
PUMP RATE, GPM	<b>2</b>					<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_ DECON FLUIDS USED \_\_\_\_\_ WATER LEVEL EQUIP. USED \_\_\_\_\_ GROUND ELEVATION \_\_\_\_\_  
 SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_ POTABLE WATER \_\_\_\_\_ ELECTRIC COND. PROBE \_\_\_\_\_  
 BAILER  GRUNDFOS# **H4201** LIQUINOX \_\_\_\_\_ FLOAT ACTIVATED \_\_\_\_\_  
 PVC/SILICON TUBING  2"  4" # \_\_\_\_\_ STEAM CLEANING \_\_\_\_\_ PRESSURE TRANSDUCER \_\_\_\_\_  
 IN-LINE/DISPOSABLE FILTER  \_\_\_\_\_ NUMBER OF FILTERS USED **1**  
 OTHER \_\_\_\_\_

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, NG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Laura E. Carter*  
 RECEIVED BY: *Phil K. [Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **PBN 910104D**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4/24/92**

SITE ID **PBN-910-04D**

JOB NUMBER **6853-G-**

FILE NAME **CGW**

LOCATION ACTIVITY START **0800** END **1100**

PROGRAM **C**

WEATHER **OVERCAST 40%**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **18** FT  
 PROTECTIVE CASING/WELL DIFF. **+ .21** FT  
 WELL DEPTH **221** FT  MEASURED  HISTORICAL  
 WATER DEPTH **90.12** FT  
 RISER ELEVATION **829.95**  
 HEIGHT OF WATER COLUMN **130.9** FT  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.0** PPM  
 WELL MOUTH **0.0** PPM  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	9:00	9:30	10:00	10:30	11:00	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLCRED <input type="checkbox"/> TURBID <input type="checkbox"/> COOR <input type="checkbox"/> OTHER (SEE NOTES)
	@ 100 GAL	@ 200 GAL	@ 300 GAL	@ 400 GAL	@ 490 GAL	
TEMP, DEG C	10.5	10.1	10.7	10.2	10.4	
PH, UNITS <input type="checkbox"/> PH PAPER	7.58	7.92	7.97	7.92	8.20	
SPECIFIC CONDUCTIVITY umhos/cm	451	448	454	451	446	

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID **ISCO #**  
 SUBMERSIBLE PUMP  **GRUNDEFS# A382**  
 BAILER   2"  4" #  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER   
 LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED   
 ELECTRIC COND. PROBE   
 FLOAT ACTIVATED PRESSURE TRANSDUCER   
 GROUND ELEVATION   
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2			1921	022600
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1921	022600
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1922	022510
CL TT08	YES	4 DEG C	500 ML POLY		1923	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1924	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3)40 ML VIAL		1925	022600
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1928	162500
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPM USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *James E. Carter / 69*  
 RECEIVED BY: *Paul E. [unclear]*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SWN9101B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4-25-92

SITE ID SWN-91-01B

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1200 1500 END 1400 1700

PROGRAM C

WEATHER CLOUDY 4/5

WATER LEVEL / WELL DATA

WELL DEPTH 115 FT

MEASURED HISTORICAL

TOP OF WELL TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

1.3 FT

PROTECTIVE CASING/WELL DIFF.

.22 FT

WATER DEPTH 78.30 FT

44 GAL/VOL 44

WELL INTEGRITY: PROT. CASING SECURE CONCRETE COLLAR INTACT WELL LOCKED PVC WELL CAP

RISER ELEVATION 833.25

HEIGHT OF WATER COLUMN 36.7 FT 219 TOTAL GAL PURGED

GROUNDWATER ELEVATION 754.95

PURGE H2O CONTAINED? VOC DNT NO WELL MATERIAL PVC SS

AMBIENT AIR 0 PPM WELL MOUTH 0 PPM

WELL DIAMETER 2 INCH 4 INCH INCH

PURGE DATA

PURGE VOLUME	a 44 GAL	a 2.8 GAL	a 132 GAL	a 176 GAL	a 219 GAL
TEMP, DEG C	10.2	10.3	10.2	10.3	10.3
pH, UNITS	7.2	7.5	7.6	7.6	7.7
SPECIFIC CONDUCTIVITY umhos/cm	607	call	611	call	611
PUMP RATE, GPM					

SAMPLE OBSERVATIONS: CLEAR CLOUDY COLORED TURBID ODOR OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING	SAMPLING	EQUIPMENT ID	DECON FLUIDS USED	WATER LEVEL EQUIP. USED	GROUND ELEVATION
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PERISTALTIC PUMP ISCO #	<input checked="" type="checkbox"/> POTABLE WATER	<input checked="" type="checkbox"/> ELECTRIC COND. PROBE	830.8
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SUBMERSIBLE PUMP GRUNDFOS#	<input checked="" type="checkbox"/> LIQUINOX	<input checked="" type="checkbox"/> FLOAT ACTIVATED	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	BAILER 2" 4" #	<input checked="" type="checkbox"/> STEAM CLEANING	<input checked="" type="checkbox"/> PRESSURE TRANSDUCER	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PVC/SILICON TUBING			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IN-LINE/DISPOSABLE FILTER			
<input type="checkbox"/>	<input type="checkbox"/>	OTHER	NUMBER OF FILTERS USED 1		

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2			1930	1028000
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1930	1028000
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1931	1028000
CL TT08	YES	4 DEG C	500 ML POLY		1932	
SO4 TT08	YES	4 DEG C	500 ML POLY		1935	
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM33	NO	HCL, 4 DEG C	(3) 40 ML VIAL		1934	1028000
BN/A UM16	NO	4 DEG C	(2) 1 L AG		1937	1028000
NG 99	NO	4 DEG C	1 L AG		1938	
NAM UN06	NO	4 DEG C	1 L AG			
DNT UN26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP) TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: CK/T/H RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SWN9101C**

PROJECT: **USATHAMA-BAAP**  
 SITE ID: **SWN-91-01C**  
 LOCATION: **START 1200 END 1430**

SITE TYPE: **WELL**  
 JOB NUMBER: **6853-04**  
 PROGRAM: **C**  
 SAMPLING DATE: **4/25/92**  
 FILE NAME: **CGW**  
 WEATHER: **Cloudy 45°**

### WATER LEVEL / WELL DATA

WELL DEPTH: **160 FT**  MEASURED  HISTORICAL  
 WATER DEPTH: **9.08 FT**  
 HEIGHT OF WATER COLUMN: **80.92 FT**  
 TOP OF WELL:  TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND): **18 ± FT**  
 PROTECTIVE CASING/WELL DIFF.: **1 FT**  
 WELL INTEGRITY: YES  NO  N/A   
 PROT. CASING SECURE: YES  NO   
 CONCRETE COLLAR INTACT: YES  NO   
 WELL LOCKED: YES  NO   
 PVC WELL CAP: YES  NO   
 RISER ELEVATION: **834.03**  
 GROUNDWATER ELEVATION: **754.95**  
 PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  NO  
 WELL MATERIAL:  PVC  SS  
 AMBIENT AIR: **0 PPM**  
 WELL MOUTH: **0 PPM**  
 WELL DIAMETER:  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	a 53 GAL	a 106 GAL	a 159 GAL	a 212 GAL	a 263 GAL	SAMPLE OBSERVATIONS: <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.7	10.7	10.4	10.4	10.4	
pH, UNITS <input type="checkbox"/> pH PAPER	7.3	7.6	7.7	7.7	7.7	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	571	565	562	569	564	

### EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER  
 EQUIPMENT ID: **ISCO #**  
 GROUND LOS#   
 2"  4" #  
 DISCON FLUIDS USED:  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION: **831.0**  
 NUMBER OF FILTERS USED: **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2				
CA SS16	YES	HNO <sub>3</sub> TO pH<2				
NA SS16	YES	HNO <sub>3</sub> TO pH<2				
CD SS16	YES	HNO <sub>3</sub> TO pH<2				
CR SS16	YES	HNO <sub>3</sub> TO pH<2				
HG SB03	YES	HNO <sub>3</sub> TO pH<2				
PB SD24	YES	HNO <sub>3</sub> TO pH<2				
NI SS16	YES	HNO <sub>3</sub> TO pH<2				
BA SS16	YES	HNO <sub>3</sub> TO pH<2				
HARD USEPA 130.2	YES	HNO <sub>3</sub> TO pH<2				
NIT TF10	YES	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO <sub>4</sub> TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	(3) 40 ML VIAL			
NH <sub>3</sub> N <sub>2</sub> USEPA 350.2	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY			
VOC Um.33	NO	HCL, 4 DEG C	(3) 40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 419.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

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PAGE 1 OF 1

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER SWN9101D

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4/25/92

SITE ID SWN1-911-01D

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY 1500  
START 11:00 END 1:00

PROGRAM C

WEATHER Cloudy

WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 1.2 ± FT

TOP OF CASING PROTECTIVE CASING/WELL DIFF. 0.2 FT

WELL DEPTH 200 FT  MEASURED  HISTORICAL

WATER DEPTH 78.66 FT 102 GAL/VOL 1015

HEIGHT OF WATER COLUMN 121.34 FT 507 TOTAL GAL PURGED

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP

RISER ELEVATION 833.57

GROUNDWATER ELEVATION 754.91

PURGE H<sub>2</sub>O CONTAINED?  VCC  DNT  NO  PVC  SS

WELL MATERIAL  PVC  SS

AMBIENT AIR PPM          WELL MOUTH PPM         

WELL DIAMETER  2 INCH  4 INCH  6 INCH

PURGE DATA

PURGE VOLUME	<u>102</u> GAL	<u>207</u> GAL	<u>306</u> GAL	<u>407</u> GAL	<u>507</u> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.4</u>	<u>10.3</u>	<u>10.3</u>	<u>10.3</u>	<u>10.3</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.6</u>	<u>7.6</u>	<u>7.7</u>	<u>7.7</u>	<u>7.7</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>569</u>	<u>566</u>	<u>569</u>	<u>568</u>	<u>568</u>	
PUMP RATE, GPM						

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID \_\_\_\_\_

SUBMERSIBLE PUMP  ISCO # \_\_\_\_\_

BAILER  GRUNDEOS#

PVC/SILICON TUBING  2"  4" # \_\_\_\_\_

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED  POTABLE WATER

LIQUINOX

STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE

FLOAT ACTIVATED

PRESSURE TRANSDUCER

GROUND ELEVATION 831.5

NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2			<u>1947</u>	<u>032666C</u>
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			<u>1948</u>	<u>032666C</u>
NIT	YES	H2SO4 TO pH<2	500 ML POLY		<u>1949</u>	<u>052810C</u>
CL	YES	4 DEG C	500 ML POLY		<u>1950</u>	
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY		<u>1951</u>	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		<u>1952</u>	<u>042520C</u>
BN/A	NO	4 DEG C	(2) 1 L AG		<u>1955</u>	<u>022810C</u>
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: CK TH

RECEIVED BY: Paul K. ...



ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SWN9102C**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SAMPLING DATE **4/26/92**

SITE ID **SWN-191-02C**

JOB NUMBER **6853-04**

FILE NAME **CGW**

LOCATION ACTIVITY **START 0930 END 1130**

PROGRAM **C**

WEATHER **overcast +10%**

WATER LEVEL / WELL DATA

WELL DEPTH **154.5 FT**  TOP OF WELL PROTECTIVE CASING STICK-UP **2.88 FT**  TOP OF CASING PROTECTIVE CASING/WELL DIFF. **-0.22 FT**

WATER DEPTH **82.37 FT**  MEASURED  HISTORICAL

HEIGHT OF WATER COLUMN **72.1 FT** **67 GAL/VOL** **66.5** WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

PURGE H2O CONTAINED?  VOC  DNT  NO  PVC  SS  AMBIENT AIR **—** PPM WELL MOUTH **—** PPM

RISER ELEVATION **836.39**  
 GROUNDWATER ELEVATION **754.02**  
 WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

	10:20	10:39	10:58	11:17	11:56	SAMPLE OBSERVATIONS
PURGE VOLUME	@ 66.5 GAL	@ GAL	@ GAL	@ GAL	@ 332 GA	<input checked="" type="checkbox"/> CLEAR
TEMP, DEG C	10.1	10.2	10.0	10.3	10.2	<input type="checkbox"/> CLOUDY
pH, UNITS <input type="checkbox"/> PH PAPER	7.07	7.52	7.63	7.46	7.27	<input type="checkbox"/> COLORED
SPECIFIC CONDUCTIVITY umhos/cm	166.3	667	662	668	673	<input type="checkbox"/> TURBID
PUMP RATE, GPM	3.5					<input type="checkbox"/> GDR
						<input type="checkbox"/> OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING	SAMPLING	EQUIPMENT ID	DECON FLUIDS USED	WATER LEVEL EQUIP. USED	GROUND ELEVATION
<input type="checkbox"/>	<input checked="" type="checkbox"/>	PERISTALTIC PUMP ISCO #	<input checked="" type="checkbox"/> POTABLE WATER	<input checked="" type="checkbox"/> ELECTRIC COND. PRGBE	<b>834.4</b>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUBMERSIBLE PUMP GRUNDFOS# <input checked="" type="checkbox"/>	<input type="checkbox"/> LIQUINOX	<input type="checkbox"/> FLOAT ACTIVATED	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	BAILER 2" 4" #	<input type="checkbox"/> STEAM CLEANING	<input type="checkbox"/> PRESSURE TRANSDUCER	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	PVC/SILICON TUBING			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	IN-LINE/DISPOSABLE FILTER			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	OTHER			
			NUMBER OF FILTERS USED <b>1</b>		

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CO SS16	YES	HNO3 TO pH<2			1957	1920000
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2			1957	1020000
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1958	1020000
CL TT08	YES	4 DEG C	500 ML POLY		1959	
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1960	
TDS USEPA 160.1	NO	4 DEG C				
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VCC um93	NO	HCL, 4 DEG C	(3)40 ML VIAL		1961	1965
BA/A UM16	NO	4 DEG C	(2) 1 L AG		1964	1965
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES

PP METALS (AG, AS, BE, CO, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CO, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE *[Signature]*  
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# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SWN 91 02 D

PROJECT USATHAMA-GAAP

SITE TYPE WELL

SAMPLING DATE 4/26/92

SITE ID SWN-91-02D

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0930 END 1200

PROGRAM C

WEATHER OVERCAST 90%

### WATER LEVEL / WELL DATA

WELL DEPTH 187 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 265 FT

PROTECTIVE CASING/WELL DIFF. 17 FT

WATER DEPTH 82.65 FT

94 GAL/VOL  
467 TOTAL GAL PURGED

WELL INTEGRITY:  
PROT. CASING SECURE  
CONCRETE COLLAR INTACT  
WELL LOCKED  
PVC WELL CAP

YES NO N/A

RISER ELEVATION 836.61

HEIGHT OF WATER COLUMN 104.4 FT

GROUNDWATER ELEVATION 753.96

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR PPM

WELL MOUTH PPM

WELL DIAMETER  
 2 INCH  
 4 INCH  
 6 INCH

### PURGE DATA

PURGE VOLUME

10:37 @ 9 GAL 11:09 @ 9 GAL 11:41 @ 9 GAL 12:13 @ 9 GAL 12:45 @ 967 GAL

TEMP, DEG C

10.1 10.5 10.4 10.3 10.5

PH, UNITS  PH PAPER

7.48 7.73 7.72 7.92 7.94

SPECIFIC CONDUCTIVITY umhos/cm

513 517 515 506 519

PUMP RATE, GPM

3.0

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

LOGGING   
SAMPLING

PERI-TALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER

EQUIPMENT ID  
ISCO #  
GRUNDFOS#  
2" 4" #

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROSE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 834.5

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2		1966		032000.C
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2		1966		032000.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	1967		032000.C
CL TT08	YES	4 DEG C	500 ML POLY	1968		
SO4 TT08	YES	4 DEG C	500 ML POLY	1969		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	1970	1971	1972 04282016
BN/A UM16	NO	4 DEG C	(2) 1 L AG	1973	1974	000000.C
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]* LIC  
RECEIVED BY: *[Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER SWN 91103B

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.28.92

SITE ID SWN-191-03B

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1200 END 1400

PROGRAM C

WEATHER SUNNY

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE  
 TOP OF CASING CASING STICK-UP (FROM GROUND) 1.9 FT  
 PROTECTIVE CASING/WELL DIFF. -0.08 FT  
 WELL DEPTH 115 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 83.98 FT  
 RISER ELEVATION 836.63  
 HEIGHT OF WATER COLUMN 31 FT  
10 GAL/VOL 40  
 TOTAL GAL PURGED 200  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 GROUNDWATER ELEVATION 752.65  
 PURGE H2O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0.0 PPM  
 WELL MOUTH 1.2 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

	1200	1200	1200	1200	1200	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> COOR <input type="checkbox"/> OTHER (SEE NOTES)
PURGE VOLUME	@ <u>40</u> GAL	@ <u>80</u> GAL	@ <u>120</u> GAL	@ <u>160</u> GAL	@ <u>200</u> GAL	
TEMP, DEG C	<u>11.0</u>	<u>10.8</u>	<u>10.7</u>	<u>10.9</u>	<u>10.9</u>	
PH, UNITS <input type="checkbox"/> PH PAPER	<u>7.9</u>	<u>7.6</u>	<u>7.5</u>	<u>7.4</u>	<u>7.5</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>587</u>	<u>574</u>	<u>574</u>	<u>572</u>	<u>572</u>	
PUMP RATE, GPM	<u>4gpm</u>					

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE P.M.P.  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GRUNDEFS# \_\_\_\_\_  
 2"  4"  # \_\_\_\_\_  
 DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 834.7  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2			1975	032600-C
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2			1975	105240-C
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		1976	
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		1977	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		1978	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input checked="" type="checkbox"/> TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL		1979	1980 1981 042420-C
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG		1982	1983 022500-C
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SWN 91103C**

PROJECT **USATHAMA-BAAP**  
 SITE ID **SWN-911-03C**  
 LOCATION ACTIVITY **START 12:00 END 14:30**

SITE TYPE **WELL**  
 JOB NUMBER **6853-04**  
 PROGRAM **C**

SAMPLING DATE **4 27 92**  
 FILE NAME **CGW**  
 WEATHER **SUNNY!  
40s**

### WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) **2.2 FT**  
 PROTECTIVE CASING/WELL DIFF. **0.0 FT**  
 WELL DEPTH **165 FT**  
 MEASURED  
 HISTORICAL  
 WATER DEPTH **84.1 FT**  
 RISER ELEVATION **836.73**  
 HEIGHT OF WATER COLUMN **752.63 FT**  
**72.5** GAL/VOL  
**363** TOTAL GAL PURGED  
 WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 PVC WELL CAP  YES  NO  N/A  
 GROUNDWATER ELEVATION **752.63**  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.0 PPM**  
 WELL MOUTH **0.0 PPM**  
 WELL DIAMETER  2 INCH  1.5 INCH  1 INCH

### PURGE DATA

	12:24	12:48	13:12	13:56	14:00	SAMPLE OBSERVATIONS
PURGE VOLUME	275 GAL	145 GAL	217.5 GAL	291 GAL	363 GAL	
TEMP, DEG C	11.3	11.3	11.5	11.4	11.4	
pH, UNITS <input type="checkbox"/> pH PAPER	8.00	7.51	8.00	7.93	7.93	
SPECIFIC CONDUCTIVITY umhos/cm	423	423	427	426	431	
PUMP RATE, GPM	3					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDEOS# **Hazell 1**  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION **836.6**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2			1984	0326601
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			1984	0326601
NIT	YES	H2SO4 TO pH<2	500 ML POLY		1985	0328101
CL	YES	4 DEG C	500 ML POLY		1986	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		1987	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		1988	0327101
BN/A	NO	4 DEG C	(2) 1 L AG		1991	0327101
NG	NO	4 DEG C	1 L AG		1992	
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Gregory R. [Signature]*  
 RECEIVED BY: *Paul R. [Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SWN91030

PROJECT USATHAMA-BAAP

SITE TYPE

WELL

SITE ID SWN-91-1030

JOB NUMBER

6853-04

SAMPLING DATE

1/22/92

LOCATION

ACTIVITY START 9:00 END 15:30

PROGRAM

C

FILE NAME

CGW

WEATHER

Sunny 40s

### WATER LEVEL / WELL DATA

WELL DEPTH 210 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.12 FT

PROTECTIVE CASING/WELL DIFF. 0.05"

WATER DEPTH 84.5 FT

102 GAL/VOL

WELL INTEGRITY:

YES NO N/A

RISER ELEVATION

837.09

HEIGHT OF WATER COLUMN 125.5 FT

570 TOTAL GAL PURGED

PROT. CASING SECURE

GROUNDWATER ELEVATION

752.59

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

PURGE H2O CONTAINED?

VOC  DNT  NO

WELL MATERIAL

PVC  SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0.0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

### PURGE DATA

PURGE VOLUME

@ 102 GAL

@ 204 GAL

@ 306 GAL

@ 408 GAL

@ 510 GAL

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

TEMP, DEG C

10.2

10.5

11.0

10.9

11.2

PH, UNITS  pH PAPER

7.58

7.74

7.78

7.88

7.87

SPECIFIC CONDUCTIVITY umhos/cm

507

510

515

515

523

PUMP RATE, GPM

3

### EQUIPMENT DOCUMENTATION

PURGING SAMPLING

PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER

EQUIPMENT ID

ISCO #  
GRUNDEFS#  
92" 4" #

DECON FLUIDS USED

POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

835.0

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2			1993	10528201
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2			1993	10528201
<input type="checkbox"/> NI7 TF10	YES	H2SO4 TO pH<2	500 ML POLY		1994	10528201
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		1995	
<input type="checkbox"/> SO4 TT08	YES	4 DEG C	500 ML POLY		1996	
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input type="checkbox"/> TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input type="checkbox"/> VOC Um. 33	NO	HCL, 4 DEG C	(3) 40 ML VIAL		1997	10528201
<input type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG		2000	2001
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG			
<input type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *[Signature]*

RECEIVED BY: *[Signature]*

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER SWN 9103E

PROJECT USATHAMA-BAAP  
 SITE ID SWN-91-03E  
 LOCATION ACTIVITY START 5:40 END 1500

SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C  
 SAMPLING DATE 4.27.92  
 FILE NAME CGW  
 WEATHER SUNNY 10S

WATER LEVEL / WELL DATA

WELL DEPTH 240 FT  
 WATER DEPTH 84.8 FT  
 HEIGHT OF WATER COLUMN 155.2 FT  
 MEASURED HISTORICAL  
 TOP OF WELL TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 252 FT  
 PROTECTIVE CASING/WELL DIFF. 0.225"  
 RISER ELEVATION 837.38  
 GROUNDWATER ELEVATION 752.58  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP  
 PURGE H2O CONTAINED? VCC DNT NO  
 WELL MATERIAL PVC SS  
 AMBIENT AIR 0.0 PPM  
 WELL MOUTH 0.0 PPM  
 WELL DIAMETER 2 INCH 4 INCH

PURGE DATA

	9:20	10:00	10:50	11:34	12:18	
PURGE VOLUME	232 GAL	264 GAL	396 GAL	528 GAL	659 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.5	10.5	11.2	11.7	11.4	
pH, UNITS	7.16	7.14	7.53	7.83	7.75	
SPECIFIC CONDUCTIVITY umhos/cm	552	553	551	555	566	
PUMP RATE, GPM	4					

EQUIPMENT DOCUMENTATION

PURGING SAMPLING  
 PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER  
 EQUIPMENT ID  
 ISCO #  
 GRUNDFOS #  
 2" 4" #  
 RECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 835.0  
 NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			2002	032101L
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2				
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			2002	032601L
NIT	YES	H2SO4 TO pH<2	500 ML POLY		2003	052801L
CL	YES	4 DEG C	500 ML POLY		2004	
SO4	YES	4 DEG C	500 ML POLY			
ALK	NO	4 DEG C	500 ML POLY		2005	
TDS	NO	4 DEG C				
TOC	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3)40 ML VIAL		2006	042801L
BN/A	NO	4 DEG C	(2) 1 L AG		2007	022901L
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

SIGNATURE [Signature]  
 RECEIVED BY: [Signature]

ABB ENVIRONMENTAL SERVICES, INC.

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SWN9104C**

PROJECT **USATHAMA-BAAP**  
 SITE ID **SWN-91-04C**  
 LOCATION ACTIVITY **START 0800 END 1100**

SITE TYPE **WELL**  
 JOB NUMBER **6853-04**  
 PROGRAM **C**

SAMPLING DATE **4-25-92**  
 FILE NAME **CGW**  
 WEATHER **partly cloudy**

WATER LEVEL / WELL DATA

WELL DEPTH **165.5 FT**  MEASURED  HISTORICAL  
 WATER DEPTH **83.74 FT**  
 HEIGHT OF WATER COLUMN **81.76 FT**  
 TOP OF WELL  TOP OF CASING   
 PROTECTIVE CASING STICK-UP (FROM GROUND) **1.75 FT**  
 PROTECTIVE CASING/WELL DIFF. **7.21 FT**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 WELL MATERIAL  AMBIENT AIR  PPM  WELL MOUTH  PPM   
 RISER ELEVATION **834.87**  
 GROUNDWATER ELEVATION **751.13**  
 WELL DIAMETER  2 INCH  4 INCH  INCH

PURGE DATA

PURGE VOLUME	a 74 GAL	a 148 GAL	a 222 GAL	a 296 GAL	a 370 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	11.5	11.7	11.5	11.5	11.5	
pH, UNITS <input type="checkbox"/> pH PAPER	7.2	7.2	7.0	7.0	7.2	
SPECIFIC CONDUCTIVITY umhos/cm	510	517	510	514	512	
PUMP RATE, GPM						

EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID **ISCO #**  
 SUBMERSIBLE PUMP  GRUNDFOS#   
 BAILER  2"  4" #  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER   
 LIQUINOX   
 STEAM CLEANING   
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE   
 FLOAT ACTIVATED   
 PRESSURE TRANSDUCER   
 GROUND ELEVATION **832.8**  
 NUMBER OF FILTERS USED **1**

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2	1 L POLY			
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HN03 TO pH<2				
<input checked="" type="checkbox"/> CA	YES	SS16	YES	HN03 TO pH<2		
<input checked="" type="checkbox"/> NA	YES	SS16	YES	HN03 TO pH<2		
<input checked="" type="checkbox"/> CD	YES	SS16	YES	HN03 TO pH<2	2011	10324601C
<input checked="" type="checkbox"/> CR	YES	SS16	YES	HN03 TO pH<2		
<input checked="" type="checkbox"/> HG	YES	SB03	YES	HN03 TO pH<2		
<input checked="" type="checkbox"/> PB	YES	SD24	YES	HN03 TO pH<2		
<input checked="" type="checkbox"/> NI	YES	SS16	YES	HN03 TO pH<2		
<input checked="" type="checkbox"/> BA	YES	SS16	YES	HN03 TO pH<2		
<input checked="" type="checkbox"/> HARD	YES	USEPA 130.2	YES	HN03 TO pH<2	2011	10324601C
<input checked="" type="checkbox"/> NIT	YES	TF10	YES	H2S04 TO pH<2	2012	1052501C
<input checked="" type="checkbox"/> CL	YES	TT08	YES	4 DEG C	2013	
<input checked="" type="checkbox"/> SO4	YES	TT08	YES	4 DEG C		
<input checked="" type="checkbox"/> ALK	NO	USEPA 310.1	NO	4 DEG C	2014	
<input checked="" type="checkbox"/> TDS	NO	USEPA 160.1	NO	4 DEG C		
<input checked="" type="checkbox"/> TOC	NO	USEPA 415.1	NO	H2S04 TO pH<2		
<input checked="" type="checkbox"/> NH3N2	NO	USEPA 350.2	NO	H2S04 TO pH<2		
<input checked="" type="checkbox"/> VCC	NO	UM33	NO	HCL, 4 DEG C	2015 / 2016 / 2017	1042221C
<input checked="" type="checkbox"/> BN/A	NO	UM16	NO	4 DEG C	2018 / 2019	1052501C
<input checked="" type="checkbox"/> NG	NO	99	NO	4 DEG C		
<input checked="" type="checkbox"/> NAM	NO	UN06	NO	4 DEG C		
<input checked="" type="checkbox"/> DNT	NO	UW26	NO	4 DEG C		
<input checked="" type="checkbox"/> TFM	NO	USEPA 418.1	NO	H2S04 TO pH<2		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: \_\_\_\_\_  
 RECEIVED BY: \_\_\_\_\_

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER SWN91104D

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4-25-92

SITE ID SWN-91-04D

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0800 END 1100

PROGRAM C

WEATHER partly cloudy

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 1.2 FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. - 2.0 FT  
 WELL DEPTH 200 FT  MEASURED  HISTORICAL  
 WATER DEPTH 37.4 FT  
 HEIGHT OF WATER COLUMN 115.4 FT  
 GAL/VOL 3.6 TOTAL GAL PURGED 4.7  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 WELL MATERIAL AMBIENT AIR PPM WELL MOUTH PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH  
 RISER ELEVATION 835.28  
 GROUNDWATER ELEVATION 751.24

### PURGE DATA

PURGE VOLUME	<u>@ 76 GAL</u>	<u>@ 172 GAL</u>	<u>@ 238 GAL</u>	<u>@ 382 GAL</u>	<u>@ 477 GAL</u>	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>11.7</u>	<u>11.5</u>	<u>11.3</u>	<u>11.5</u>	<u>11.5</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.6</u>	<u>7.5</u>	<u>7.2</u>	<u>7.9</u>	<u>7.4</u>	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>425</u>	<u>430</u>	<u>430</u>	<u>429</u>	<u>430</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP  GRUNDEFS#   
 BAILER  2"  4" #  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER   
 LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE   
 FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION 833.5  
 NUMBER OF FILTERS USED         

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD SS16	YES	HNO3 TO pH<2			<u>2020</u>	<u>10326601C</u>
<input checked="" type="checkbox"/> CR SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG SB03	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB SD24	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA SS16	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2			<u>2020</u>	<u>10326601C</u>
<input checked="" type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		<u>2021</u>	<u>10326601C</u>
<input checked="" type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY		<u>2022</u>	
<input checked="" type="checkbox"/> SO4 TT08	YES	4 DEG C				
<input checked="" type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>2023</u>	
<input checked="" type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C				
<input checked="" type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC <u>UM33</u>	NO	HCL, 4 DEG C	(3)40 ML VIAL		<u>2024</u>	<u>10423701C</u>
<input checked="" type="checkbox"/> BN/A UM16	NO	4 DEG C	(2) 1 L AG		<u>2027</u>	<u>10224601C</u>
<input checked="" type="checkbox"/> NG 99	NO	4 DEG C	1 L AG		<u>2028</u>	
<input checked="" type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER **SWN9105B**

PROJECT **USATHAMA-BAAP**

SITE TYPE **WELL**

SITE ID **SWN-91-05B**

JOB NUMBER **6853-04**

SAMPLING DATE **11/26/92**

LOCATION ACTIVITY START **1600** END **1730**

PROGRAM **C**

FILE NAME **CGW**

WEATHER **OVERCAST  
+4C**

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING TOP OF CASING  
 TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) **2.75 FT**  
 PROTECTIVE CASING/WELL DIFF. **-.14 FT**  
 WELL DEPTH **115 FT**  MEASURED  HISTORICAL  
 WATER DEPTH **83.95 FT**  
 HEIGHT OF WATER COLUMN **31.1 FT**  
 RISER ELEVATION **832.67**  
 GROUNDWATER ELEVATION **748.72**  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR **0.0 PPM** WELL MOUTH **0.0 PPM**  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	7:56	4:05	11:20	4:52	4:40	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> CDOP <input type="checkbox"/> OTHER (SEE NOTES)
@ 37 GAL	@ 74 GAL	@ 111 GAL	@ 147 GAL	@ 135 GAL		
TEMP, DEG C	12.7	12.5	12.9	11.8	11.3	
pH, UNITS <input type="checkbox"/> pH PAPER	7.55	7.45	7.42	7.62	7.47	
SPECIFIC CONDUCTIVITY umhos/cm:	456	449	448	650	640	
PUMP RATE, GPM	3.5					

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  EQUIPMENT ID ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDFOS# **~332**  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER   
 DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PRCE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION **830.5**  
 NUMBER OF FILTERS USED **1**

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA	YES	HNO3 TO pH<2				
NA	YES	HNO3 TO pH<2				
CD	YES	HNO3 TO pH<2			2029	
CR	YES	HNO3 TO pH<2				
HG	YES	HNO3 TO pH<2				
PB	YES	HNO3 TO pH<2				
NI	YES	HNO3 TO pH<2				
BA	YES	HNO3 TO pH<2				
HARD	YES	HNO3 TO pH<2			2029	
NI7	YES	H2SO4 TO pH<2	500 ML POLY		2030	
CL	YES	4 DEG C	500 ML POLY		2031	
SO4	YES	4 DEG C				
ALK	NO	4 DEG C	500 ML POLY		2032	
TDS	NO	4 DEG C				
TCC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		2033 / 2034 / 2035	
BN/A	NO	4 DEG C	(2) 1 L AG		2036 / 2037	
NG	NO	4 DEG C	1 L AG			
NAM	NO	4 DEG C	1 L AG			
DNT	NO	4 DEG C	1 L AG			
TPH	NO	H2SO4 TO pH<2	1 L GWM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Gregory A. Smith*  
 RECEIVED BY: *Rob P. Smith*

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER SWN9105C

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4/26/92

SITE ID SWN-91-05C

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 1300 END 1530

PROGRAM C

WEATHER OVERCAST, 40's

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.25 FT.  TOP OF CASING PROTECTIVE CASING/WELL DIFF. -.05 FT.

WELL DEPTH 149 FT.  MEASURED  HISTORICAL

WATER DEPTH 54.2 FT. 61 GAL/VOL 1 WELL INTEGRITY: YES NO N/A

HEIGHT OF WATER COLUMN 64.5 FT. 305 TOTAL GAL PURGED 305 PROTECTIVE CASING SECURE  CONCRETE COLLAR INTACT  WELL LOCKED  PVC WELL CAP

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  YES WELL MATERIAL  PVC  SS AMBIENT AIR 0.0 PPM WELL MOUTH 0.0 PPM WELL DIAMETER  2 INCH  4 INCH  6 INCH

RISER ELEVATION 832.86 GROUNDWATER ELEVATION 748.66

### PURGE DATA

PURGE VOLUME	<u>2:25</u>	<u>2:42</u>	<u>2:59</u>	<u>3:16</u>	<u>3:53</u>	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLCRED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
	<u>61</u> GAL	<u>122</u> GAL	<u>  </u> GAL	<u>  </u> GAL	<u>305</u> GAL	
TEMP, DEG C	<u>11.4</u>	<u>11.9</u>	<u>12.2</u>	<u>11.9</u>	<u>11.9</u>	
PH, UNITS <input type="checkbox"/> PH PAPER	<u>7.51</u>	<u>7.71</u>	<u>7.73</u>	<u>7.72</u>	<u>7.67</u>	
SPECIFIC CONDUCTIVITY $\mu$ mos/cm	<u>653</u>	<u>665</u>	<u>651</u>	<u>660</u>	<u>658</u>	
PUMP RATE, GPM	<u>3.5</u>	<u>  </u>	<u>  </u>	<u>  </u>	<u>  </u>	

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO #  
 SUBMERSIBLE PUMP  GRUNDFOS# HA201  
 BAILER  2"  4" #     
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER

DECON FLUIDS USED  POTABLE WATER   
 LIQUINOX   
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE   
 FLOAT ACTIVATED   
 PRESSURE TRANSDUCER

GROUND ELEVATION 830.8

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC UM 31	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH USEPA 412.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(AL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Sum E. Carter / G-P  
 RECEIVED BY: Paul R. [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

SWN 91105 D

PROJECT: USATHAMA-BAAP

SITE TYPE

WELL

SITE ID SWN-91-05D

JOB NUMBER

6853-04

SAMPLING DATE

1/26/92

LOCATION

PROGRAM

C

FILE NAME

CGW

ACTIVITY

START 1300 END 1600

WEATHER

OVERCAST  
40%

### WATER LEVEL / WELL DATA

WELL DEPTH 203 FT

MEASURED  
 HISTORICAL

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND)

2.28 FT

PROTECTIVE CASING/WELL DIFF.

.17 FT

WATER DEPTH 81.15 FT

97 GAL/VOL 97

WELL INTEGRITY:  
PROT. CASING SECURE   
CONCRETE COLLAR INTACT   
PVC WELL LOCKED   
PVC WELL CAP

YES NO N/A

RISER ELEVATION

833.31

HEIGHT OF WATER COLUMN 118.3 FT

484 TOTAL GAL PURGED

GROUNDWATER ELEVATION

748.56

PURGE H<sub>2</sub>O CONTAINED?  
 VOC  DNT  NO

WELL MATERIAL  
 PVC  SS

AMBIENT AIR 0.0 PPM

WELL MOUTH 0 PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 6 INCH

### PURGE DATA

PURGE VOLUME

2:30 3:10 3:30 4:10 4:30  
@ 97 GAL @ 114 GAL @ 291 GAL @ 389 GAL @ 484 GAL

TEMP, DEG C

11.5 11.6 12.1 12.5 11.6

PH, UNITS  PH PAPER

7.82 7.74 7.72 7.46 7.73

SPECIFIC CONDUCTIVITY  $\mu\text{mhos/cm}$

585 582 604 665 602

PUMP RATE, GPM

3.25

SAMPLE OBSERVATIONS

CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP  
SUBMERSIBLE PUMP  
BAILER  
PVC/SILICON TUBING  
IN-LINE/DISPOSABLE FILTER  
OTHER \_\_\_\_\_

EQUIPMENT ID

ISCO # \_\_\_\_\_  
GRUNDEOS# H4200  
 2"  4" # \_\_\_\_\_

DECON FLUIDS USED

POTABLE WATER  
 LIQUID  
 STEAM CLEANING

WATER LEVEL EQUIP. USED

ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION

831.2

NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO <sub>3</sub> TO pH<2				
CA SS16	YES	HNO <sub>3</sub> TO pH<2				
NA SS16	YES	HNO <sub>3</sub> TO pH<2				
CD SS16	YES	HNO <sub>3</sub> TO pH<2			<u>2047</u>	<u>232600</u>
CR SS16	YES	HNO <sub>3</sub> TO pH<2				
HG SB03	YES	HNO <sub>3</sub> TO pH<2				
PB SD24	YES	HNO <sub>3</sub> TO pH<2				
NI SS16	YES	HNO <sub>3</sub> TO pH<2				
BA SS16	YES	HNO <sub>3</sub> TO pH<2				
HARD USEPA 130.2	YES	HNO <sub>3</sub> TO pH<2			<u>2047</u>	<u>152200</u>
NIT TF10	YES	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY		<u>2048</u>	<u>125200</u>
CL TT08	YES	4 DEG C	500 ML POLY		<u>2049</u>	
SO <sub>4</sub> TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		<u>2050</u>	
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	(3) 40 ML VIAL			
NH <sub>3</sub> N <sub>2</sub> USEPA 350.2	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	500 ML POLY			
VCC <u>UM:33</u>	NO	HCL, 4 DEG C	(3) 40 ML VIAL		<u>2051</u> / <u>2052</u> / <u>2053</u>	<u>104700</u>
BN/A UM16	NO	4 DEG C	(2) 1 L AG		<u>2054</u> / <u>2055</u>	<u>102200</u>
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H <sub>2</sub> SO <sub>4</sub> TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: [Signature]

RECEIVED BY: [Signature]

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PAGE 1 OF 1

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER: 11111

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

4/25/92

SITE ID: [Blank]

JOB NUMBER: 6853-04

SAMPLING DATE: 4/23/92

LOCATION: 1300 4/23 -> 4.25  
ACTIVITY: START 4/23/92 END 4/25/92

PROGRAM: C

FILE NAME: CGW

WEATHER: OVERCAST  
40.3

WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 MEASURED  
 HISTORICAL  
 PROTECTIVE CASING STICK-UP (FROM GROUND): 2.58 FT  
 PROTECTIVE CASING/WELL DIFF.: 7.34 FT  
 WELL DEPTH: 71 FT  
 WATER DEPTH: 6.95 FT  
 HEIGHT OF WATER COLUMN: [Blank] FT  
 GAL/VOL: 6.5  
 TOTAL GAL PURGED: 33  
 WELL INTEGRITY: YES [ ] NO [ ] N/A [ ]  
 PROT. CASING SECURE [ ]  
 CONCRETE COLLAR INTACT [ ]  
 WELL LOCKED [ ]  
 PVC WELL CAP [ ]  
 WELL MOUTH 1.0 PPM  
 WELL DIAMETER: 2 INCH [ ] 4 INCH [ ] INCH [ ]  
 RISER ELEVATION: [Blank]  
 GROUNDWATER ELEVATION: [Blank]

PURGE DATA

	4/22	4/23			
PURGE VOLUME	0.5 GAL	0.5 GAL	0.5 GAL	0.5 GAL	0.5 GAL
TEMP, DEG C	7.32	-	-	-	-
pH, UNITS	11.1	-	-	-	-
SPECIFIC CONDUCTIVITY umhos/cm	535	-	-	-	-
PUMP RATE, GPM	-	-	-	-	-

SAMPLE OBSERVATIONS:  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOUR  
 OTHER (SEE NOTES)

EQUIPMENT DOCUMENTATION

PURGING SAMPLING: [ ]  
 EQUIPMENT ID: PERISTALTIC PUMP, SUBMERSIBLE PUMP, BAILER, PVC/SILICON TUBING, IN-LINE/DISPOSABLE FILTER, OTHER [ ]  
 ISCO # [Blank]  
 GROUND ELEV # [Blank]  
 2" [ ] 4" [ ] # [Blank]  
 DECON FLUIDS USED: POTABLE WATER [ ], LIQUINOX [ ], STEAM CLEANING [ ]  
 WATER LEVEL EQUIP. USED: ELECTRIC COND. PROBE [ ], FLOAT ACTIVATED [ ], PRESSURE TRANSDUCER [ ]  
 GROUND ELEVATION: [Blank]  
 NUMBER OF FILTERS USED: [Blank]

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	[ ]	[ ]	[ ]
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			[ ]	[ ]
CA SS16	YES	HNO3 TO pH<2			[ ]	[ ]
NA SS16	YES	HNO3 TO pH<2			[ ]	[ ]
CD SS16	YES	HNO3 TO pH<2			[ ]	[ ]
CR SS16	YES	HNO3 TO pH<2			[ ]	[ ]
HG SB03	YES	HNO3 TO pH<2			[ ]	[ ]
PB SD24	YES	HNO3 TO pH<2			[ ]	[ ]
NI SS16	YES	HNO3 TO pH<2			[ ]	[ ]
BA SS16	YES	HNO3 TO pH<2			[ ]	[ ]
HARD USEPA 130.2	YES	HNO3 TO pH<2			[ ]	[ ]
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY		[ ]	[ ]
CL TT08	YES	4 DEG C	500 ML POLY		[ ]	[ ]
SO4 TT08	YES	4 DEG C			[ ]	[ ]
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY		[ ]	[ ]
TDS USEPA 160.1	NO	4 DEG C			[ ]	[ ]
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL		[ ]	[ ]
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY		[ ]	[ ]
VOC Um.33	NO	HCL, 4 DEG C	(3)40 ML VIAL		[ ]	[ ]
BN/A UM16	NO	4 DEG C	(2) 1 L AG		[ ]	[ ]
NG 99	NO	4 DEG C	1 L AG		[ ]	[ ]
NAM UN06	NO	4 DEG C	1 L AG		[ ]	[ ]
DNT UW26	NO	4 DEG C	1 L AG		[ ]	[ ]
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM		[ ]	[ ]

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

\* ONLY ABLE TO COLLECT VOC'S ON 4-25-92

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 511102

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4/24/92

SITE ID 511102

JOB NUMBER 6853-0

FILE NAME CGW

LOCATION ACTIVITY START 1200 END 1300

PROGRAM C

WEATHER Cloudy, 40s

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE  
 TOP OF CASING PROTECTIVE  
 WELL DEPTH 66 FT.  MEASURED  PROTECTIVE CASING/WELL DIFF. -1.45 FT.  
 HISTORICAL (FROM GROUND) 1.8± FT.  
 WATER DEPTH 47.02 FT. WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 HEIGHT OF WATER COLUMN 18.78 FT. TOTAL GAL PURGED 158 WELL LOCKED     
 PVC WELL CAP     
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO WELL MATERIAL  PVC  SS AMBIENT AIR 0 PPM WELL MOUTH 0 PPM  
 WELLS RISER ELEVATION 609.12  
 GROUNDWATER ELEVATION 761.91  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	32 GAL	64 GAL	96 GAL	128 GAL	158 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOUR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.0</u>	<u>10.2</u>	<u>10.2</u>	<u>10.2</u>	<u>10.2</u>	
PH, UNITS <input type="checkbox"/> PH PAPER	<u>6.5</u>	<u>6.9</u>	<u>7.4</u>	<u>7.1</u>	<u>6.9</u>	
SPECIFIC CONDUCTIVITY $\mu\text{mhos/cm}$	<u>681</u>	<u>1090</u>	<u>845</u>	<u>694</u>	<u>696</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING   
 PERISTALTIC PUMP  ISCO # \_\_\_\_\_  
 SUBMERSIBLE PUMP  GRUNDECS# \_\_\_\_\_  
 BAILER  2"  4" # \_\_\_\_\_  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER  \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER  
 GROUND ELEVATION 807.0  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI7 TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SC4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS USEPA 160.1	NO	4 DEG C		<input type="checkbox"/>		
TCC USEPA 415.1	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC Um33	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input type="checkbox"/>		
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input type="checkbox"/>		
NG 99	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
NAM UN06	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
DNT UW26	NO	4 DEG C	1 L AG	<input type="checkbox"/>		
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: CK/TH  
 RECEIVED BY: Paul R. ...

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID

JOB NUMBER 6853-04

SAMPLING DATE 1/21/92

LOCATION ACTIVITY START 1500 END 143/1630

PROGRAM C

FILE NAME CGW

WEATHER 40s rain

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 1.60 FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. 7.08 FT  
 MEASURED  
 HISTORICAL  
 WELL DEPTH 21 FT  
 WATER DEPTH 46.96 FT  
 HEIGHT OF WATER COLUMN 74.04 FT  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP     
 RISER ELEVATION 809.15  
 GROUNDWATER ELEVATION 759.67  
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 0.1 PPM  
 WELL MOUTH 0.1 PPM  
 WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 59 GAL	@ 118 GAL	@ 177 GAL	@ 236 GAL	@ 295 GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	9.9	9.7	9.8	10.0	10.1	
pH, UNITS <input type="checkbox"/> pH PAPER	7.28	7.39	7.4	7.27	7.29	
SPECIFIC CONDUCTIVITY umhos/cm	276	394	591	513	592	
PUMP RATE, GPM	4.62					

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SAMPLING  SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID ISCO # \_\_\_\_\_  
 GROUNDED # \_\_\_\_\_  
 2"  4" # \_\_\_\_\_  
 DECON FLUIDS USED  POTABLE WATER  
 LITQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION 807.6  
 NUMBER OF FILTERS USED 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC um33	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: Paul C. Smith/L.T./AKA  
 RECEIVED BY: Paul H. Smith

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP  
 SITE ID: 11014  
 LOCATION ACTIVITY: START 1100 END 1300

FIELD SAMPLING NUMBER: 11014  
 SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C

SAMPLING DATE: 4/23/92  
 FILE NAME: CGW  
 WEATHER: Rain 40%

### WATER LEVEL / WELL DATA

WELL DEPTH: 75 FT. MEASURED  
 WATER DEPTH: 77.2 FT.  
 HEIGHT OF WATER COLUMN: 17.8 FT.  
 TOP OF WELL:  TOP OF CASING:  PROTECTIVE CASING STICK-UP (FROM GROUND): 1.67 FT.  
 PROTECTIVE CASING/WELL DIFF.: .57 FT.  
 WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE:   
 CONCRETE COLLAR INTACT:   
 WELL LOCKED:   
 PVC WELL CAP:   
 PURGE H<sub>2</sub>O CONTAINED? VOC  DNT  NO  
 WELL MATERIAL: PVC  SS   
 AMBIENT AIR: 0.0 PPM  
 WELL MOUTH: 0.0 PPM  
 WELL DIAMETER: 2 INCH  4 INCH  6 INCH   
 RISER ELEVATION: 279.21  
 GROUNDWATER ELEVATION: 762.01

### PURGE DATA

PURGE VOLUME	a 38 GAL	a 76 GAL	a 154 GAL	a GAL	a GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	10.8	10.4	10.6	10.6	10.8	<input checked="" type="checkbox"/> CLEAR
pH, UNITS	7.48	7.47	7.48	7.46	7.44	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	530	531	542	545	541	<input type="checkbox"/> COLORED
PUMP RATE, GPM	4					<input type="checkbox"/> TURBID
						<input type="checkbox"/> COOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER  
 EQUIPMENT ID: ISCO #  
 GRUNDFOS # ABB #2  
 2"  4" #  
 DECON FLUIDS USED:  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION: 27.5  
 NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1045	1028000
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1045	1028000
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1047	1028000
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>		
TDS	NO	4 DEG C		<input type="checkbox"/>		
TCC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VCC	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	1042	1028000
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1043	1028000
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (CA, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *James E. Cate* / GP  
 RECEIVED BY: *Paul R. [Signature]*

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP  
 SITE ID: 511015  
 LOCATION ACTIVITY: START 1100 END 1300

FIELD SAMPLING NUMBER: 71045  
 SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C

SAMPLING DATE: 4-23-92  
 FILE NAME: CGW  
 WEATHER: RAIN 40's

### WATER LEVEL / WELL DATA

WELL DEPTH: 111 FT  
 WATER DEPTH: 77.84 FT  
 HEIGHT OF WATER COLUMN: 33.2 FT  
 MEASURED:  TOP OF WELL,  TOP OF CASING  
 PROTECTIVE CASING/WELL DIFF.: 1.33 FT  
 PROTECTIVE CASING STICK-UP (FROM GROUND): 2.33 FT  
 WELL INTEGRITY: YES  NO  N/A   
 PROT. CASING SECURE: YES  NO  N/A   
 CONCRETE COLLAR INTACT: YES  NO  N/A   
 WELL LOCKED: YES  NO  N/A   
 PVC WELL CAP: YES  NO  N/A   
 PURGE H2O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL:  PVC  SS  
 AMBIENT AIR: 0.0 PPM  
 WELL MOUTH: 0.0 PPM  
 RISER ELEVATION: 837.5  
 GROUNDWATER ELEVATION: 761.24  
 WELL DIAMETER:  2 INCH,  4 INCH,  INCH

### PURGE DATA

PURGE VOLUME	@ 31.5 GAL	@ 63 GAL	@ 94.5 GAL	@ ___ GAL	@ ___ GAL	SAMPLE OBSERVATIONS <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	10.4	10.5	10.4	10.5	10.7	
PH, UNITS <input type="checkbox"/> PH PAPER	7.38	7.41	7.37	7.39	7.41	
SPECIFIC CONDUCTIVITY umhos/cm	595	597	512	593	592	
PUMP RATE, GPM	2					

### EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP,  SUBMERSIBLE PUMP,  BAILER,  PVC/SILICON TUBING,  IN-LINE/DISPOSABLE FILTER,  OTHER  
 SAMPLING:  PERISTALTIC PUMP,  SUBMERSIBLE PUMP,  BAILER,  PVC/SILICON TUBING,  IN-LINE/DISPOSABLE FILTER,  OTHER  
 EQUIPMENT ID: ISCO #, GRUNDEOS# 2" 4" #142201  
 DECON FLUIDS USED:  POTABLE WATER,  LIQUINOX,  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE,  FLOAT ACTIVATED,  PRESSURE TRANSDUCER  
 GROUND ELEVATION: 837.4  
 NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1306	10320001
CA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1306	10320001
NIT	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1306	10320001
CL	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1306	
SO4	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1306	
ALK	NO	4 DEG C	500 ML POLY	<input type="checkbox"/>	1306	
TDS	NO	4 DEG C		<input type="checkbox"/>	1306	
TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL	<input type="checkbox"/>		
NH3N2	NO	H2SO4 TO pH<2	500 ML POLY	<input type="checkbox"/>		
VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL	<input checked="" type="checkbox"/>	1304, 1305, 1306	0420201
BN/A	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1307, 1308	10220101
NG	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1307	
NAM	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1306	
DNT	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1307	
TPH	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	1307	

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Sam E. Carter*  
 RECEIVED BY: *Red K. ...*



# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 1116

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 1/23/92

SITE ID 1116

JOB NUMBER 6853-0-

FILE NAME CGW

LOCATION ACTIVITY START 1330 END 1600

PROGRAM C

WEATHER RAIN 40S

### WATER LEVEL / WELL DATA

WELL DEPTH 138 FT

MEASURED  
 HISTORICAL

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 16.7 FT

PROTECTIVE CASING/WELL DIFF. .15 FT

WATER DEPTH 77.2 FT

51 GAL/VOL (51)

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION 24.72

HEIGHT OF WATER COLUMN 60.8 FT

255 TOTAL GAL PURGED (255)

GROUNDWATER ELEVATION 262.52

PURGE H2O CONTAINED?  VOC  DNT  NO  PVC  SS

AMBIENT AIR 0.0 PPM WELL MOUTH 0.0 PPM

WELL DIAMETER  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	@ 51 GAL	@ 102 GAL	@ 153 GAL	@ 204 GAL	@ 255 GAL
TEMP, DEG C	<u>10.6</u>	<u>10.7</u>	<u>10.7</u>	<u>10.6</u>	<u>10.8</u>
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.75</u>	<u>7.74</u>	<u>7.77</u>	<u>7.80</u>	<u>7.81</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>511</u>	<u>511</u>	<u>508</u>	<u>507</u>	<u>507</u>
PUMP RATE, GPM	<u>4</u>				

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING	SAMPLING	EQUIPMENT ID	DECON FLUIDS USED	WATER LEVEL EQUIP. USED	GROUND ELEVATION	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PERISTALTIC PUMP SUBMERSIBLE PUMP BAILER PVC/SILICON TUBING IN-LINE/DISPOSABLE FILTER OTHER	ISCO # GRUNDFOS# <u>11000-1</u> <u>2" 4" #</u> <u>ABB302</u>	<input checked="" type="checkbox"/> POTABLE WATER <input type="checkbox"/> LIQUINOX <input type="checkbox"/> STEAM CLEANING	<input type="checkbox"/> ELECTRIC COND. PROBE <input type="checkbox"/> FLOAT ACTIVATED <input type="checkbox"/> PRESSURE TRANSDUCER	<u>837.7</u>
			NUMBER OF FILTERS USED <u>1</u>			

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				<u>1022601C</u>
CA	SS16	YES HNO3 TO pH<2				
NA	SS16	YES HNO3 TO pH<2				
CD	SS16	YES HNO3 TO pH<2				
CR	SS16	YES HNO3 TO pH<2				
HG	SB03	YES HNO3 TO pH<2				
PB	SD24	YES HNO3 TO pH<2				
NI	SS16	YES HNO3 TO pH<2				
BA	SS16	YES HNO3 TO pH<2				
HARD	USEPA 130.2	YES HNO3 TO pH<2			<u>1376</u>	<u>0326601C</u>
NIT	TF10	YES H2SO4 TO pH<2	500 ML POLY		<u>1373</u>	<u>0326601C</u>
CL	TT08	YES 4 DEG C	500 ML POLY		<u>1374</u>	
SO4	TT08	YES 4 DEG C				
ALK	USEPA 310.1	NO 4 DEG C	500 ML POLY		<u>1375</u>	
TDS	USEPA 160.1	NO 4 DEG C				
TOC	USEPA 415.1	NO H2SO4 TO pH<2	(3) 40 ML VIAL			
NH3N2	USEPA 350.2	NO H2SO4 TO pH<2	500 ML POLY			
VOC	<u>Um33</u>	NO HCL, 4 DEG C	(3) 40 ML VIAL		<u>1376</u>	<u>0428201C</u>
BN/A	UM16	NO 4 DEG C	(2) 1 L AG		<u>1371</u>	<u>022801C</u>
MG	99	NO 4 DEG C	1 L AG		<u>1381</u>	
NAM	UN06	NO 4 DEG C	1 L AG		<u>1382</u>	
DNT	UW26	NO 4 DEG C	1 L AG		<u>1383</u>	
TPH	USEPA 418.1	NO H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, HG, MN, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: James E. Cate JEP

RECEIVED BY: Bob K. [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER 51107

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SAMPLING DATE 4.25.92

SITE ID 51107

JOB NUMBER 6853-04

FILE NAME CGW

LOCATION ACTIVITY START 0800 END 1000

PROGRAM C

WEATHER CLOUDY 40s

### WATER LEVEL / WELL DATA

WELL DEPTH 76 FT.  MEASURED  TOP OF WELL PROTECTIVE CASING/WELL DIFF. -01 FT.  
 HISTORICAL  TOP OF CASING CASING STICK-UP (FROM GROUND) 170 FT.

WATER DEPTH 49.14 FT. WELL INTEGRITY: PROT. CASING SECURE YES NO N/A RISER ELEVATION 512.05

HEIGHT OF WATER COLUMN 26.9 FT. 495 GAL/VOL (49.5) CONCRETE COLLAR INTACT YES NO N/A GROUNDWATER ELEVATION 762.94  
 247 TOTAL GAL PURGED (247) WELL LOCKED YES NO N/A  
 PVC WELL CAP YES NO N/A

PURGE H2O CONTAINED? VOC DNT NO WELL MATERIAL PVC SS AMBIENT AIR 0.0 PPM WELL MOUTH 0.0 PPM WELL DIAMETER 2 INCH

### PURGE DATA

PURGE VOLUME	@ 49.5 GAL	@ 99 GAL	@ 148.5 GAL	@ 198 GAL	@ 247 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	10.4	10.4	10.7	10.5	10.4	<input type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER	6.51	7.40	7.30	7.39	7.54	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	580	579	579	584	581	<input type="checkbox"/> COLORED
PUMP RATE, GPM	4					<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

PURGING	SAMPLING	EQUIPMENT ID	DECON FLUIDS USED	WATER LEVEL EQUIP. USED	GROUND ELEVATION
<input type="checkbox"/>	<input checked="" type="checkbox"/>	PERISTALTIC PUMP ISCO #	<input type="checkbox"/> POTABLE WATER	<input type="checkbox"/> ELECTRIC COND. PROBE	510.1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUBMERSIBLE PUMP GRUNDEOS# ABB #2	<input type="checkbox"/> LIQUINOX	<input type="checkbox"/> FLOAT ACTIVATED	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	BAILER 2" 4" #	<input type="checkbox"/> STEAM CLEANING	<input type="checkbox"/> PRESSURE TRANSDUCER	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	PVC/SILICON TUBING			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	IN-LINE/DISPOSABLE FILTER			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	OTHER			
			NUMBER OF FILTERS USED	1	

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	1354	032600.C
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	1354	1032600.C
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	1380	1052810.C
CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1380	
SO4 TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALX USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	1357	
TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC Um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>	1348	040570.C
BN/A UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>	1371	1002810.C
NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1372	
NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1315	
DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	1314	
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	1345	

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: *Laura E. Carter*  
 RECEIVED BY: *Paul K. Kern*

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP  
 SITE ID: 5111051111  
 LOCATION ACTIVITY: START 1630 END 1500

FIELD SAMPLING NUMBER: 5111051111  
 SITE TYPE: WELL  
 JOB NUMBER: 6853-04  
 PROGRAM: C

SAMPLING DATE: 4/23/92  
 FILE NAME: CGW  
 WEATHER: Rain, 40°

### WATER LEVEL / WELL DATA

TOP OF WELL PROTECTIVE CASING STICK-UP (FROM GROUND) 2.30 FT  
 TOP OF CASING PROTECTIVE CASING/WELL DIFF. 1.04 FT  
 WELL DEPTH: 41 FT  MEASURED  HISTORICAL  
 WATER DEPTH: 19.67 FT  
 HEIGHT OF WATER COLUMN: 21.33 FT  
 WELL INTEGRITY: YES  NO  N/A  
 PROT. CASING SECURE  CONCRETE COLLAR INTACT   
 WELL LOCKED  PVC WELL CAP   
 PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL:  PVC  SS  
 AMBIENT AIR: 0.4 PPM WELL MOUTH: 0.2 PPM  
 RISER ELEVATION: 752.74  
 GROUNDWATER ELEVATION: 763.07  
 WELL DIAMETER:  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	<u>42</u> GAL	<u>84</u> GAL	<u>126</u> GAL	<u>168</u> GAL	<u>210</u> GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLCRED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>9.5</u>	<u>9.5</u>	<u>9.6</u>	<u>9.6</u>	<u>9.6</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.1</u>	<u>7.0</u>	<u>7.1</u>	<u>7.1</u>	<u>7.1</u>	
SPECIFIC CONDUCTIVITY $\mu$ mhos/cm	<u>381</u>	<u>383</u>	<u>413</u>	<u>419</u>	<u>396</u>	
PUMP RATE, GPM	<u>4.5</u>					

### EQUIPMENT DOCUMENTATION

PURGING:  PERISTALTIC PUMP EQUIPMENT ID: ISCO #  
 SUBMERSIBLE PUMP GRUNDFOSS#   
 BAILER  2"  4" #  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING  
 WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED PRESSURE TRANSDUCER  
 GROUND ELEVATION: 751.4  
 NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C				
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC <u>um33</u>	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM			

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SB24, SB03, 99 (TL:GFAA, K/NA:ICP)

*No concrete collar - stone*

SIGNATURE: [Signature]  
 RECEIVED BY: [Signature]

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP

SITE ID: 51109

LOCATION ACTIVITY: START 1530 END 1700

FIELD SAMPLING NUMBER: 11111111

SITE TYPE: WELL

JOB NUMBER: 6853-04

PROGRAM: C

SAMPLING DATE: 4-22-92

FILE NAME: CGW

WEATHER: Cloudy 40's

### WATER LEVEL / WELL DATA

WELL DEPTH: 109 FT

WATER DEPTH: 84.77 FT

HEIGHT OF WATER COLUMN: 19.23 FT

MEASURED  HISTORICAL

TOP OF WELL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 2.75 FT

PROTECTIVE CASING/WELL DIFF.: -0.27 FT

WELL INTEGRITY: YES  NO  N/A

PROT. CASING SECURE  CONCRETE COLLAR INTACT

WELL LOCKED  PVC WELL CAP

RISER ELEVATION: 766.55

GROUNDWATER ELEVATION: 766.81

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO

WELL MATERIAL:  PVC  SS

AMBIENT AIR: NR PPM

WELL MOUTH: NE PPM

WELL DIAMETER:  2 INCH  4 INCH  6 INCH

### PURGE DATA

PURGE VOLUME	31.5 GAL	63 GAL	94.5 GAL	126 GAL	158 GAL	SAMPLE OBSERVATIONS
TEMP, DEG C	10.6	10.6	10.6	10.6	10.3	<input type="checkbox"/> CLEAR
pH, UNITS <input type="checkbox"/> pH PAPER	7.6	7.3	7.3	7.3	7.4	<input type="checkbox"/> CLOUDY
SPECIFIC CONDUCTIVITY umhos/cm	143	127	125	125	128	<input type="checkbox"/> COLORED
PUMP RATE, GPM	4.0					<input type="checkbox"/> TURBID
						<input type="checkbox"/> ODOR
						<input type="checkbox"/> OTHER (SEE NOTES)

### EQUIPMENT DOCUMENTATION

URGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID: ISCO #

SUBMERSIBLE PUMP  GROUND# 2" 4" #

BAILER

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION: 854.7

NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		10326601C
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	S803	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HARD	USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		10326601C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		10528101C
CL	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS	USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	USEPA-350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>		10428701C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		10228101C
NG	99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	UN26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES: PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

NR = no reading - TE inoperable

SIGNATURE: Sylvia T...

RECEIVED BY: ...



**ABB ENVIRONMENTAL SERVICES, INC.**

**FIELD DATA RECORD - GROUNDWATER**

FIELD SAMPLING NUMBER

PROJECT USATHAMA-BAAP

SITE TYPE WELL

SITE ID 311111

JOB NUMBER 6853-04

SAMPLING DATE 4/22/92

LOCATION ACTIVITY START 1630 END 1730

PROGRAM C

FILE NAME CGW

WEATHER cloudy 40's

**WATER LEVEL / WELL DATA**

WELL DEPTH 121 FT

TOP OF WELL  
 TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND) 2.12 FT

PROTECTIVE CASING/WELL DIFF. 20.12 FT

WATER DEPTH 30.25 FT

MEASURED  
 HISTORICAL

35 GAL/VOL (35)

WELL INTEGRITY: YES NO N/A  
 PROT. CASING SECURE     
 CONCRETE COLLAR INTACT     
 WELL LOCKED     
 PVC WELL CAP

RISER ELEVATION 30.25

HEIGHT OF WATER COLUMN 20.75 FT

175 TOTAL GAL PURGED (175)

GROUNDWATER ELEVATION 768.57

PURGE H2O CONTAINED?  VOC  DNT  NO

WELL MATERIAL  PVC  SS

AMBIENT AIR      PPM

WELL MOUTH      PPM

WELL DIAMETER  2 INCH  
 4 INCH  
 INCH

**PURGE DATA**

PURGE VOLUME	<u>35</u> GAL	<u>35</u> GAL	<u>105</u> GAL	<u>140</u> GAL	<u>125</u> GAL
TEMP, DEG C	<u>13.4</u>	<u>10.8</u>	<u>10.8</u>	<u>10.7</u>	<u>10.7</u>
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.7</u>	<u>7.7</u>	<u>7.6</u>	<u>7.6</u>	<u>7.7</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>554</u>	<u>519</u>	<u>519</u>	<u>513</u>	<u>514</u>
PUMP RATE, GPM					

SAMPLE OBSERVATIONS  
 CLEAR  
 CLOUDY  
 COLORED  
 TURBID  
 ODOR  
 OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING  SAMPLING

PERISTALTIC PUMP  EQUIPMENT ID ISCO #       
 SUBMERSIBLE PUMP  GRUNDFOS#   
 BAILER  # 2" 4" #  
 PVC/SILICON TUBING   
 IN-LINE/DISPOSABLE FILTER   
 OTHER

DECON FLUIDS USED  POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

GROUND ELEVATION 284.5

NUMBER OF FILTERS USED 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2				
CA SS16	YES	HNO3 TO pH<2				
NA SS16	YES	HNO3 TO pH<2				
CD SS16	YES	HNO3 TO pH<2				
CR SS16	YES	HNO3 TO pH<2				
HG SB03	YES	HNO3 TO pH<2				
PB SD24	YES	HNO3 TO pH<2				
NI SS16	YES	HNO3 TO pH<2				
BA SS16	YES	HNO3 TO pH<2				
HARD USEPA 130.2	YES	HNO3 TO pH<2				
NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY			
CL TT08	YES	4 DEG C	500 ML POLY			
SO4 TT08	YES	4 DEG C	500 ML POLY			
ALK USEPA 310.1	NO	4 DEG C	500 ML POLY			
TDS USEPA 160.1	NO	4 DEG C				
TOC USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL			
BN/A UM16	NO	4 DEG C	(2) 1 L AG			
NG 99	NO	4 DEG C	1 L AG			
NAM UN06	NO	4 DEG C	1 L AG			
DNT UW26	NO	4 DEG C	1 L AG			
TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GLM			

OTES PP METALS (AG,AS,BE,CD,CR,CU,PB,HG,NI,SB,SE,TL,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)  
 TAL METALS(CAL,SB,AS,BA,BE,CD,CA,CR,CO,CU,FE,PB,MG,MN,HG,NI,K,SE,AG,NA,TL,V,ZN): SS16,SD24,SB03,99 (TL:GFAA, K/NA:ICP)

WELL WENT DRY AFTER 3 VOLUMES AT 5 GPM  
 SLOWED DOWN TO 3 GPM W/ BETTER RESULTS

SIGNATURE: CK/TU  
 RECEIVED BY:

# ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

## FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

PROJECT: USATHAMA-BAAP

SITE ID: 511112

LOCATION ACTIVITY: START 1330 END 1500

SITE TYPE: WELL

JOB NUMBER: 6853-04

PROGRAM: C

SAMPLING DATE: 4/22/92

FILE NAME: CGW

WEATHER: Cloudy 45°

### WATER LEVEL / WELL DATA

WELL DEPTH: 43.5 FT

WATER DEPTH: 16.7 FT

HEIGHT OF WATER COLUMN: 27.31 FT

MEASURED  HISTORICAL

TOP OF WELL  TOP OF CASING

PROTECTIVE CASING STICK-UP (FROM GROUND): 1 FT

PROTECTIVE CASING/WELL DIFF.: --- FT

WELL INTEGRITY: YES  NO  N/A

CONCRETE COLLAR INTACT

WELL LOCKED

PVC WELL CAP

RISER ELEVATION: 55.09

GROUNDWATER ELEVATION: 772.1

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO  PVC  SS

WELL MATERIAL: AMBIENT AIR — PPM

WELL MOUTH: --- PPM

WELL DIAMETER:  2 INCH  4 INCH  INCH

### PURGE DATA

PURGE VOLUME	<u>247</u> GAL	<u>277</u> GAL	<u>151</u> GAL	<u>121</u> GAL	<u>232</u> GAL	SAMPLE OBSERVATIONS: <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	<u>10.5</u>	<u>10.5</u>	<u>10.6</u>	<u>10.5</u>	<u>10.6</u>	
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.2</u>	<u>7.2</u>	<u>7.2</u>	<u>7.2</u>	<u>7.2</u>	
SPECIFIC CONDUCTIVITY umhos/cm	<u>577</u>	<u>577</u>	<u>577</u>	<u>577</u>	<u>577</u>	
PUMP RATE, GPM						

### EQUIPMENT DOCUMENTATION

PURGING  SAMPLING

PERISTALTIC PUMP

SUBMERSIBLE PUMP

BAILER

PVC/SILICON TUBING

IN-LINE/DISPOSABLE FILTER

OTHER

EQUIPMENT ID: ISCO # --- GRUNDEOS#  2"  4" # ---

DECON FLUIDS USED:  POTABLE WATER  LIQUINOX  STEAM CLEANING

WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE  FLOAT ACTIVATED  PRESSURE TRANSDUCER

GROUND ELEVATION: 55.09

NUMBER OF FILTERS USED: 1

### ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>	/ / /	/ / /
<input type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/ / /
<input type="checkbox"/> CA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/ / /
<input type="checkbox"/> NA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/ / /
<input type="checkbox"/> CD SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/ / /
<input type="checkbox"/> CR SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/ / /
<input type="checkbox"/> HG SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/ / /
<input type="checkbox"/> PB SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/ / /
<input type="checkbox"/> NI SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/ / /
<input type="checkbox"/> BA SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/ / /
<input type="checkbox"/> HARD USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>	/ / /	/ / /
<input type="checkbox"/> NIT TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>	<u>1652</u>	<u>202010</u>
<input type="checkbox"/> CL TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1654</u>	/
<input type="checkbox"/> SO4 TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1655</u>	/
<input type="checkbox"/> ALK USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>	<u>1656</u>	/
<input type="checkbox"/> TDS USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>	/	/
<input type="checkbox"/> TOC USEPA 415.1	NO	H2SO4 TO pH<2 (3)40 ML VIAL		<input checked="" type="checkbox"/>	/	/
<input type="checkbox"/> NH3N2 USEPA 350.2	NO	H2SO4 TO pH<2 (3)40 ML VIAL		<input checked="" type="checkbox"/>	/	/
<input type="checkbox"/> VOC UM17	NO	HCL, 4 DEG C (3)40 ML VIAL		<input checked="" type="checkbox"/>	/	/
<input type="checkbox"/> BN/A UM16	NO	4 DEG C (2) 1 L AG		<input checked="" type="checkbox"/>	/	/
<input type="checkbox"/> NG 99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	/	/
<input type="checkbox"/> NAM UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	/	/
<input type="checkbox"/> DNT UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>	/	/
<input type="checkbox"/> TPH USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>	/	/

### NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: TH/CK

RECEIVED BY: Rob R. Martin

ABB ENVIRONMENTAL SERVICES, INC.

PAGE 1 OF 1

FIELD DATA RECORD - GROUNDWATER

FIELD SAMPLING NUMBER

511113

PROJECT: USATHAMA-BAAP

SITE TYPE: WELL

SAMPLING DATE: 4.15.92

SITE ID: 511113

JOB NUMBER: 6853-04

FILE NAME: CGW

LOCATION ACTIVITY: START 0800 END 0930

PROGRAM: C

WEATHER: rain, wet, 40's

WATER LEVEL / WELL DATA

TOP OF WELL  
 TOP OF CASING  
 PROTECTIVE CASING STICK-UP (FROM GROUND) 1.91 FT  
 PROTECTIVE CASING/WELL DIFF. -1.51 FT  
 WELL DEPTH 68 FT  
 MEASURED  
 HISTORICAL  
 WATER DEPTH 47.62 FT  
 RISER ELEVATION 851.10  
 HEIGHT OF WATER COLUMN 20.38 FT  
 35 GAL/VOL (35)  
 TOTAL GAL PURGED 175 (175)  
 WELL INTEGRITY:  
 PROT. CASING SECURE  
 CONCRETE COLLAR INTACT  
 WELL LOCKED  
 PVC WELL CAP  
 GROUNDWATER ELEVATION 773.94  
 WELLS DIAMETER 2 INCH  
 2 INCH  
 3 INCH  
 4 INCH  
 PULSE H2O CONTAINED?  VOC  DNT  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR 00 PPM  
 WELL MOUTH 00 PPM

PURGE DATA

PURGE VOLUME	35 GAL	70 GAL	105 GAL	140 GAL	175 GAL	SAMPLE OBSERVATIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> ODOR <input type="checkbox"/> OTHER (SEE NOTES)
TEMP, DEG C	11.0	10.7	10.7	10.4	10.4	
pH, UNITS <input type="checkbox"/> pH PAPER	7.15	7.5	7.43	7.5	7.5	
SPECIFIC CONDUCTIVITY umhos/cm	1212	1160	1219	121	1214	
PUMP RATE, GPM	4.5					

EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAILER  
 PVC/SILICON TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER \_\_\_\_\_  
 EQUIPMENT ID  
 ISCO # \_\_\_\_\_  
 GROUNDEDS# \_\_\_\_\_  
 2"  4" # \_\_\_\_\_  
 DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING  
 WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER  
 GROUND ELEVATION \_\_\_\_\_  
 NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY	<input checked="" type="checkbox"/>		
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		032660C
NA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CD	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
CR	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
HG	SB03	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
PB	SD24	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
NI	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
BA	SS16	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		
WARD	USEPA 130.2	YES	HNO3 TO pH<2		<input checked="" type="checkbox"/>		032660C
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		032660C
CL	TT08	YES	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
SO4	TT08	YES	4 DEG C		<input checked="" type="checkbox"/>		
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY	<input checked="" type="checkbox"/>		
TDS	USEPA 160.1	NO	4 DEG C		<input checked="" type="checkbox"/>		
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL	<input checked="" type="checkbox"/>		
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY	<input checked="" type="checkbox"/>		
VOC	um33	NO	HCL, 4 DEG C	(3)40 ML VIAL	<input checked="" type="checkbox"/>		0428701C
BN/A	UM16	NO	4 DEG C	(2) 1 L AG	<input checked="" type="checkbox"/>		0228101C
NG	99	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
NAM	UN06	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
DNT	UW26	NO	4 DEG C	1 L AG	<input checked="" type="checkbox"/>		
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GWM	<input checked="" type="checkbox"/>		

NOTES

PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: RICKS, ALI, T.  
 RECEIVED BY: Wendy E. Rofka



# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

PROJECT: USATHAMA-BAAP      FIELD SAMPLING NUMBER: 51114

SITE ID: 51114      SITE TYPE: WELL      SAMPLING DATE: 4-22-92

LOCATION ACTIVITY: START 1230 END 1330      JOB NUMBER: 6853-04      FILE NAME: CGW

PROGRAM: C      WEATHER: cloudy 40's

**WATER LEVEL / WELL DATA**

WELL DEPTH: 107 FT       TOP OF WELL      PROTECTIVE CASING/WELL DIFF.: 137 FT

WATER DEPTH: 47.54 FT       MEASURED       TOP OF CASING      PROTECTIVE CASING/WELL DIFF.: 137 FT

HEIGHT OF WATER COLUMN: 59.46 FT       HISTORICAL      (FROM GROUND)

WELL INTEGRITY: YES  NO  N/A

PROT. CASING SECURE  CONCRETE COLLAR INTACT

WELL LOCKED  PVC WELL CAP

PURGE H<sub>2</sub>O CONTAINED?  VOC  DNT  NO      WELL MATERIAL:  PVC  SS      AMBIENT AIR:      PPM      WELL MOUTH:      PPM

WELL DIAMETER:  2 INCH  4 INCH  INCH

RISER ELEVATION: 521.97

GROUNDWATER ELEVATION: 773.83

**PURGE DATA**

PURGE VOLUME	<u>49</u> GAL	<u>98</u> GAL	<u>147</u> GAL	<u>196</u> GAL	<u>446</u> GAL
TEMP, DEG C	<u>12.2</u>	<u>10.2</u>	<u>10.7</u>	<u>10.2</u>	<u>10.2</u>
pH, UNITS <input type="checkbox"/> pH PAPER	<u>7.9</u>	<u>7.9</u>	<u>7.8</u>	<u>7.9</u>	<u>7.9</u>
SPECIFIC CONDUCTIVITY umhos/cm	<u>263</u>	<u>460</u>	<u>457</u>	<u>453</u>	<u>454</u>
PUMP RATE, GPM					

SAMPLE OBSERVATIONS:  CLEAR  CLOUDY  COLORED  TURBID  ODOR  OTHER (SEE NOTES)

**EQUIPMENT DOCUMENTATION**

PURGING:  PERISTALTIC PUMP      EQUIPMENT ID: ISCO #      DECON FLUIDS USED:  POTABLE WATER      WATER LEVEL EQUIP. USED:  ELECTRIC COND. PROBE      GROUND ELEVATION: 519.7

SAMPLING:  SUBMERSIBLE PUMP      GRUNDFOS# ✓      LIQUINOX      FLOAT ACTIVATED

BAILER: 2" 4" #      STEAM CLEANING      PRESSURE TRANSDUCER

PVC/SILICON TUBING      IN-LINE/DISPOSABLE FILTER      OTHER:           NUMBER OF FILTERS USED: 1

**ANALYTICAL PARAMETERS**

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	BOTTLE LOT #
<input checked="" type="checkbox"/> PP METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2	1 L POLY			
<input checked="" type="checkbox"/> TAL METALS (SPECIFIED BELOW)	YES	HNO3 TO pH<2			<u>11-16</u>	<u>10526600</u>
<input checked="" type="checkbox"/> CA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CD	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> CR	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HG	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> PB	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> NI	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> BA	YES	HNO3 TO pH<2				
<input checked="" type="checkbox"/> HARD	YES	HNO3 TO pH<2			<u>11-16</u>	<u>0526600</u>
<input checked="" type="checkbox"/> NIT	YES	H2SO4 TO pH<2	500 ML POLY		<u>11-17</u>	<u>10525100</u>
<input checked="" type="checkbox"/> CL	YES	4 DEG C	500 ML POLY		<u>11-18</u>	
<input checked="" type="checkbox"/> SO4	YES	4 DEG C			<u>✓</u>	
<input checked="" type="checkbox"/> ALK	NO	4 DEG C	500 ML POLY		<u>11-19</u>	
<input checked="" type="checkbox"/> TDS	NO	4 DEG C			<u>✓</u>	
<input checked="" type="checkbox"/> TOC	NO	H2SO4 TO pH<2	(3) 40 ML VIAL			
<input checked="" type="checkbox"/> NH3N2	NO	H2SO4 TO pH<2	500 ML POLY			
<input checked="" type="checkbox"/> VOC	NO	HCL, 4 DEG C	(3) 40 ML VIAL		<u>17-01</u>	<u>10225200</u>
<input checked="" type="checkbox"/> BN/A	NO	4 DEG C	(2) 1 L AG		<u>17-02</u>	<u>10225200</u>
<input checked="" type="checkbox"/> NG	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> NAM	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> DNT	NO	4 DEG C	1 L AG			
<input checked="" type="checkbox"/> TPH	NO	H2SO4 TO pH<2	1 L GMM			

**NOTES** PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

SIGNATURE: OK/TH  
 RECEIVED BY: Paul R. Kestel

**Appendix G.5**  
**Field Data Records - BAAP Production Well No. 2**

# ABB ENVIRONMENTAL SERVICES, INC.

## FIELD DATA RECORD - GROUNDWATER

PROJECT USATHAMA-BAAP  
 SITE ID BPW#2  
 LOCATION ACTIVITY START 1615 END 1630

FIELD SAMPLING NUMBER BPW#2  
 SITE TYPE WELL  
 JOB NUMBER 6853-04  
 PROGRAM C

SAMPLING DATE 12-3-91  
 FILE NAME CGW  
 WEATHER SLOW, 20°S

### WATER LEVEL / WELL DATA

WELL DEPTH          FT  MEASURED  HISTORICAL  
 WATER DEPTH          FT  
 HEIGHT OF WATER COLUMN          FT X          GAL/FT (2 IN) =          GAL/VOL  
         GAL/FT (4 IN) =           
         GAL/FT (6 IN) =           
         GAL/FT (8 IN) =         

PROTECTIVE CASING STICK-UP (FROM GROUND)          FT  
 PROTECTIVE CASING/WELL DIA.          FT  
 WELL DIAMETER  2 INCH  4 INCH  6 INCH  
 GROUNDWATER ELEVATION         

PURGE H2O CONTAINED?  YES  NO  
 WELL MATERIAL  PVC  SS  
 AMBIENT AIR PPM          WELL MOUTH PPM         

WELL INTEGRITY:  
 PROT. CASING SECURE  YES  NO  N/A  
 CONCRETE COLLAR INTACT  YES  NO  N/A  
 WELL LOCKED  YES  NO  N/A  
 OTHER:         

### PURGE DATA

PURGE VOLUME	TEMP, DEG C	PH, UNITS	SPECIFIC CONDUCTIVITY umhos/cm	SAMPLE OBSERVATIONS
<u>~15 gpm @ 125 GAL</u>	<u>10.6</u>	<u>7.09</u>	<u>468</u>	<input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> COLORED <input type="checkbox"/> TURBID <input type="checkbox"/> OOR <input type="checkbox"/> OTHER (SEE NOTES)
<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>	
<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>	
<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>	
<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>	

purged for 15 min.

### EQUIPMENT DOCUMENTATION

PURGING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAITER  
 PVC/SILICONE TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER         

SAMPLING  PERISTALTIC PUMP  
 SUBMERSIBLE PUMP  
 BAITER  
 PVC/SILICONE TUBING  
 IN-LINE/DISPOSABLE FILTER  
 OTHER         

EQUIPMENT ID ISCO #           
 GROUNDPOS#           
 2" 4" #         

DECON FLUIDS USED  
 POTABLE WATER  
 LIQUINOX  
 STEAM CLEANING

WATER LEVEL EQUIP. USED  
 ELECTRIC COND. PROBE  
 FLOAT ACTIVATED  
 PRESSURE TRANSDUCER

NUMBER OF FILTERS USED         

### ANALYTICAL PARAMETERS

PARAMETERS	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS	ESS lot #
PP METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2	1 L POLY			
TAL METALS (SPECIFIED BELOW)		YES	HNO3 TO pH<2				
CA	SS16	YES	HNO3 TO pH<2			3007	
NA	SS16	YES	HNO3 TO pH<2				
CD	SS16	YES	HNO3 TO pH<2				
CR	SS16	YES	HNO3 TO pH<2				
HG	S803	YES	HNO3 TO pH<2				
PB	SD24	YES	HNO3 TO pH<2				
NI	SS16	YES	HNO3 TO pH<2				
BA	SS16	YES	HNO3 TO pH<2				
HARD	USEPA 130.2	YES	HNO3 TO pH<2			3007	
NIT	TF10	YES	H2SO4 TO pH<2	500 ML POLY		3008	
CL	TT08	YES	4 DEG C	500 ML POLY		3009	
SO4	TT08	YES	4 DEG C				
ALK	USEPA 310.1	NO	4 DEG C	500 ML POLY		3010	
TDS	USEPA 160.1	NO	4 DEG C				
TOC	USEPA 415.1	NO	H2SO4 TO pH<2	(3)40 ML VIAL			
NH3N2	USEPA 350.2	NO	H2SO4 TO pH<2	500 ML POLY			
VOC	UM17	NO	HCL, 4 DEG C	(3)40 ML VIAL		3011	3012 3013
BN/A	UM16	NO	4 DEG C	(2) 1 L AG		3014	3015
NG	99	NO	4 DEG C	1 L AG			
NAM	UN06	NO	4 DEG C	1 L AG			
DNT	UV26	NO	4 DEG C	1 L AG			
TPH	USEPA 418.1	NO	H2SO4 TO pH<2	1 L GLM			

NOTES PP METALS (AG, AS, BE, CD, CR, CU, PB, HG, NI, SB, SE, TL, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)  
 TAL METALS (AL, SB, AS, BA, BE, CD, CA, CR, CO, CU, FE, PB, MG, MN, HG, NI, K, SE, AG, NA, TL, V, ZN): SS16, SD24, SB03, 99 (TL:GFAA, K/NA:ICP)

- let H2O purge for 15 minutes and sample  
 - No samples were filtered

SIGNATURE: Trace Vaurio  
 RECEIVED BY: Nancy E. O. Rota

**APPENDIX H**  
**HYDROGEOLOGIC DATA**

- H.1 Recharge Estimates**
- H.2 Gradient Calculations**
- H.3 Velocity Calculations**
- H.4 Preliminary Aquifer Test Results IRM**
- H.5 High Capacity Well Survey**
- H.6 Production Well No. 4  
Zone-of-Influence**

**Appendix H.1**

**Recharge Estimates**

Determine potential recharge rates from low-flow stream gauging records.

Hindall and Borman, 1974, indicate low flow (Q) is equal to 0.2 and 0.8 cubic feet per second (cfs) per square mile of watershed.

Therefore,

$$0.2 \text{ cfs/mi}^2 = 0.23 \text{ ft/yr} = 3 \text{ in/yr}$$

$$0.8 \text{ cfs/mi}^2 = 0.9 \text{ ft/yr} = 11 \text{ in/yr}$$

WATER BALANCE PROGRAM

FIG. 1: PAWF WATER BUDGET ML=48 IN

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ADJ
TEMPERATURE (F)	15.1	20.0	20.6	45.0	57.7	67.1	71.4	69.7	50.8	50.0	35.2	22.1	
MONTHLY T VALUES	0.00	0.00	0.00	1.51	4.86	7.82	9.31	8.57	5.74	2.86	0.21	0.00	41.32
UNADJUSTED POT. EVAP-TRANSF.	0.00	0.00	0.00	0.04	0.08	0.14	0.14	0.12	0.09	0.05	0.00	0.00	
LATITUDE CORRECTION (T)	24.7	24.4	20.6	32.6	37.9	38.5	38.5	36.0	31.2	28.5	24.1	22.9	
POTENTIAL EVAP-TRANSPIRATION	0.00	0.00	0.00	1.24	3.02	4.62	5.29	4.67	2.80	1.42	0.00	0.00	
PRECIPITATION	1.00	1.01	1.98	3.10	3.25	3.60	3.82	3.75	3.40	2.16	1.86	1.38	20.22
CUMULATIVE SNOW FACT (IN)	2.28	3.40	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28
CORRECTED EQUIV. PRECIP. (IN)	0.00	0.00	4.31	4.17	3.25	3.60	3.82	3.75	3.40	2.16	1.86	0.00	0.00
RUNOFF COEFFICIENT	0.15	0.15	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.15
MONTHLY RUNOFF (IN)	0.00	0.00	0.43	0.42	0.32	0.36	0.38	0.37	0.34	0.22	0.19	0.00	
INFILTRATION (IN)	0.00	0.00	2.88	2.78	2.93	2.44	2.44	2.37	2.06	1.94	1.67	0.00	
INFILTRATION MINUS FLT (IN)	0.00	0.00	3.88	2.41	-0.10	-1.28	-1.95	-1.20	0.26	0.52	1.67	0.00	
ACCUMULATED WATER LOSS (IN)	0.00	0.00	0.00	0.00	-0.10	-1.48	-2.44	-4.24	0.00	0.00	0.00	0.00	
SOIL MOISTURE STORAGE (IN)	5.17	5.17	6.00	6.00	5.90	4.68	3.37	2.71	2.68	2.50	2.17	1.67	0.00
MONTHLY MOISTURE CHANGE (IN)	0.00	0.00	0.82	0.00	-0.10	-1.22	-1.71	-0.66	0.26	0.52	1.67	0.00	
NET EVAP-TRANSF. (IN)	0.00	0.00	0.00	1.24	2.02	4.47	4.74	4.02	2.60	1.42	0.00	0.00	
NET CUMULATIVE (IN)	0.00	0.00	2.05	2.41	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	0.00	5.47

NOTE: THE FOLLOWING CONDITIONS WERE USED IN COMPUTING THIS WATER BALANCE PER THERMODYNAMIC & HEAT-BALANCE METHODS.

1. THE PROPOSED SITE HAS BEEN ESTIMATED TO BE AT 47.4 DEGREES NORTH LATITUDE.
2. THE FOLLOWING STATION, AT THE MOST RELATIVE LOCATION WAS REFERRED FOR ATMOSPHERIC DATA  
 1. STATION NUMBER IS 47.2 MILES NORTH THE SITE LOCATION  
 2. ELEVATION IS 560 FT WHICH IS 6.5 MILES SW THE SITE LOCATION
3. THE NATIONAL METEOROLOGICAL ADMINISTRATION (NWS) DATA FOR PRECIPITATION AND TEMPERATURE, FOR THE YEARS 1951 THROUGH 1959 FOR THE STATION NOTED IN ITEM 2, HAS BEEN REFERRED IN THIS ANALYSIS.
4. UNADJUSTED POTENTIAL EVAP-TRANSPIRATION VALUES HAVE BEEN CALCULATED USING THE FORMATION DEVELOPMENT AS FOLLOWS:  
 1. MONTHLY POTENTIAL EVAP-TRANSPIRATION VALUES AS NOTED IN ITEM 2 FROM THE NATIONAL METEOROLOGICAL ADMINISTRATION.  
 2. SNOW FACT THE EQUIVALENT VALUE OF WATER FACT IS ASSUMED TO BE 0.01 FROM THE NATIONAL METEOROLOGICAL ADMINISTRATION THROUGHOUT THE YEAR.  
 3. THE TOTAL SNOW FACT IS THEN DETERMINED AS EQUIVALENT PRECIPITATION MINUS 6. SPREADS HEAT FACT.  
 4. MONTHLY NET EVAP-TRANSPIRATION IS DIFFERENCE BETWEEN 1 & 2.
5. THE CORRECTED EQUIVALENT PRECIPITATION IS THE SUM OF THE MONTHLY PRECIPITATION MINUS THE SNOW FACT AS NOTED IN ITEM 2. THE CORRECTED EQUIVALENT PRECIPITATION IS THE SUM OF THE MONTHLY PRECIPITATION MINUS THE SNOW FACT AS NOTED IN ITEM 2.
6. THE CORRECTED EQUIVALENT PRECIPITATION IS THE SUM OF THE MONTHLY PRECIPITATION MINUS THE SNOW FACT AS NOTED IN ITEM 2. THE CORRECTED EQUIVALENT PRECIPITATION IS THE SUM OF THE MONTHLY PRECIPITATION MINUS THE SNOW FACT AS NOTED IN ITEM 2.
7. THE CORRECTED EQUIVALENT PRECIPITATION IS THE SUM OF THE MONTHLY PRECIPITATION MINUS THE SNOW FACT AS NOTED IN ITEM 2. THE CORRECTED EQUIVALENT PRECIPITATION IS THE SUM OF THE MONTHLY PRECIPITATION MINUS THE SNOW FACT AS NOTED IN ITEM 2.
8. THE CORRECTED EQUIVALENT PRECIPITATION IS THE SUM OF THE MONTHLY PRECIPITATION MINUS THE SNOW FACT AS NOTED IN ITEM 2. THE CORRECTED EQUIVALENT PRECIPITATION IS THE SUM OF THE MONTHLY PRECIPITATION MINUS THE SNOW FACT AS NOTED IN ITEM 2.



# WATER BALANCE PROGRAM

FOR: EAAP WATER BALANCE

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
TEMPERATURE (F)	15.3	20.2	30.7	46.0	57.9	67.3	71.7	69.6	61.1	50.2	35.4	22.2	
MONTHLY 1 VALUES	0.00	0.00	0.00	1.93	4.95	7.92	9.42	8.68	5.88	2.91	0.22	0.00	41.91
UNADJUSTED POT. EVAPO-TRANSF.	0.00	0.00	0.00	0.04	0.08	0.12	0.14	0.13	0.10	0.05	0.00	0.00	
LATITUDE CORRECTION (r)	24.3	24.4	30.6	33.6	37.9	38.5	38.4	36.0	31.2	28.5	24.1	22.9	
POTENTIAL EVAPO-TRANSPIRATION	0.00	0.00	0.00	1.34	3.03	4.62	5.27	4.67	3.12	1.42	0.00	0.00	
PRECIPITATION	1.01	1.01	1.97	3.05	3.25	3.59	3.82	3.71	3.28	2.14	1.85	1.39	30.18
CUMULATIVE SNOW PACK (IN)	0.00	0.00	4.31	4.12	3.25	3.59	3.82	3.71	3.28	2.14	1.85	1.39	
CORRECTED EQUIV. PRECIP. (IN)	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	
RUNOFF COEFFICIENT	0.00	0.00	0.30	0.29	0.23	0.25	0.27	0.26	0.24	0.15	0.13	0.00	
MONTHLY RUNOFF (IN)	0.00	0.00	4.01	3.82	3.03	3.24	3.55	3.45	3.15	1.99	1.72	0.00	
INFILTRATION (IN)	0.00	0.00	4.01	2.49	-0.00	-1.28	-1.22	-1.22	0.00	0.57	1.72	0.00	
INFILTRATION MINUS FET (IN)	0.00	0.00	0.00	0.00	0.00	-1.38	-3.10	-4.32	0.00	0.00	0.00	0.00	
ACCUMULATED WATER LOSS (IN)	3.26	3.26	2.60	2.60	2.49	1.47	1.04	1.06	1.63	3.26	3.26	0.00	
SOIL MOISTURE STORAGE (IN)	0.00	0.00	0.24	0.00	-0.01	-1.11	-1.01	-0.44	0.00	1.72	0.00	0.00	
MONTHLY MOISTURE CHANGE (IN)	0.00	0.00	0.00	1.24	3.03	4.43	4.57	3.89	3.12	1.42	0.00	0.00	
ACTUAL EVAPO-TRANSF. (IN)	0.00	0.00	3.77	2.49	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	6.23
NET PERCOLATION (IN)													

NOTE: THE FOLLOWING CONDITIONS WERE USED IN COMPUTING THIS WATER BALANCE PER THORNTONVILLE & MATHER / EPA 1975 METHODS.

- 1 THE PROPOSED SITE HAS BEEN ESTIMATED TO BE AT 43.42 DEGREES NORTH LATITUDE.
- 2 THE FOLLOWING STATION, AT THE NOTED RELATIVE LOCATION WAS REFERENCED FOR ATMOSPHERIC DATA  
1 BARABOO WHICH IS 3.2 MILES NORTH THE SITE LOCATION
- 3 1 FEATHER DU SAC 2 N WHICH IS 8.1 MILES SSW THE SITE LOCATION
- 4 THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) DATA FOR PRECIPITATION AND TEMPERATURE, FOR THE YEARS 1951 THROUGH 1989 FOR THE STATION NOTED IN ITEM 2, HAS BEEN REFERRED IN THIS ANALYSIS.
- 5 UNADJUSTED POTENTIAL EVAPO-TRANSPIRATION VALUES HAVE BEEN CALCULATED USING THE FORMATION DEVELOPED BY THORNTONVILLE & MATHER AND NOT EPA/1975 TABLE 3 WHICH VARIES AS MUCH AS 9.01 FROM THE DEFINING EQUATION.
- 6 A SNOW PACK (IN EQUIVALENT INCHES OF RAINFALL) IS ACCUMULATED FOR EACH SUB 30 DEGREE PARALLEL MONTH FROM OCTOBER THROUGH SEPTEMBER. THE TOTAL SNOW PACK IS THEN DISPERSED AS EQUIVALENT PRECIPITATION DURING A SMOOTHING NEXT EVENT, STARTING WHEN TEMPERATURES APPROACH 32 DEGREES.
- 7 THE CORRECTED EQUIVALENT PRECIPITATION IS THE SUM OF THE MONTHLY PRECIPITATION MINUS THE AROUND ADDED TO THE ACCUMULATED SNOW PACK PLUS THE ESTIMATED MONTHLY SNOW MELT.
- 8 RUNOFF COEFFICIENTS HAVE BEEN SELECTED FOR GRASS, FERTIL, ETC., FOR THE TOPSOIL TYPE SPECIFIC TO THIS SITE FOR THE SURFACE SLOPE WHICH HAS BEEN ESTIMATED AS .07 FEET PER FOOT.
- 9 SELECTING AVAILABLE MOISTURE VALUES TO REFLECT THE GENERAL VALUES NOTED BY EPA/1975, THE FOLLOWING CORRECTION SYSTEM HAS BEEN APPLIED:  
THE ROOT ZONE HAS BEEN ESTIMATED AS 24 INCHES.  
THE FINAL COVER HAS SET AS 1.4 BROWN FOR THE SOIL TYPE WITH A LOGARITHMICALLY 1.5 AVAILABLE MOISTURE
- 10 FOR MONTHS WITH POTENTIAL EVAPO-TRANSPIRATION EXCEEDS THE AVAILABLE MOISTURE  
THE EQUATION USED TO GENERATE EPA/1975 TABLE 11 MONTH 22, THE VALUES DO NOT MATCH THE FORMATION VALUES AT ALL POINTS. THESE VARIATIONS DON'T AFFECT THE MONTHLY CORRECTION COEFFICIENT VALUES BY MORE THAN 0.01.
- 11 ALL COMPUTED TABLE VALUES HAVE BEEN ROUNDED TO THE NEAREST 0.01 FOR DISPLAYING PURPOSES. COMPLETE STORAGE ACCUMULATED VALUES, BEING 15 TO 60 GALLONS TOTAL, CALCULATED VALUE ACCURACY TO 1.00, OR BETTER.



# WATER BALANCE PROGRAM

FIG. 3: Input VALUES WITHOUT LOSS

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
TEMPERATURE (F)	15.1	20.0	30.6	45.8	57.7	67.1	71.4	69.3	60.6	50.0	35.2	22.1	
MONTHLY Y VALUES	0.00	0.00	0.00	1.91	4.86	7.80	9.31	8.57	5.79	2.86	0.21	0.00	41.33
UNADJUSTED POT. EVAPO-TRANSF.	24.3	24.4	30.6	33.6	37.9	38.5	38.5	36.0	31.2	28.5	24.1	22.9	
LATITUDE CORRECTION (F)	0.00	0.00	0.00	1.24	3.03	4.52	5.29	4.67	2.80	1.42	0.00	0.00	
POTENTIAL EVAPO-TRANSPIRATION	1.00	1.01	1.98	3.10	3.25	3.60	3.82	3.75	3.40	2.16	1.86	1.38	30.32
PRECIPITATION	2.28	2.40	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28	
CUMULATIVE SNOW FACI (IN)	0.00	0.00	4.85	3.63	3.25	3.60	3.82	3.75	3.40	2.16	1.86	0.00	
CORRECTED EQUIV. PRECIP. (IN)	0.10	0.10	0.10	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.10	
RUNOFF COEFFICIENT	0.00	0.00	0.49	0.15	0.13	0.14	0.15	0.15	0.14	0.09	0.07	0.00	
MONTHLY RUNOFF (IN)	0.00	0.00	4.26	3.49	3.12	3.45	3.66	3.60	3.27	2.07	1.79	0.00	
INFILTRATION (IN)	0.00	0.00	4.26	2.15	0.08	-1.17	-1.73	-1.07	0.47	0.65	1.75	0.00	
INFILTRATION MINUS FET (IN)	0.00	0.00	0.00	0.00	0.00	-1.17	-2.89	-3.96	0.00	0.00	0.00	0.00	
ACCUMULATED WATER LOSS (IN)	1.80	1.80	1.80	1.80	1.80	0.88	0.30	0.16	0.62	1.28	1.80	1.80	
SOIL MOISTURE STORAGE (IN)	0.00	0.00	0.00	0.00	0.00	-0.92	-0.57	-0.15	0.47	0.65	0.52	0.00	
MONTHLY MOISTURE CHANGE (IN)	0.00	0.00	0.00	1.24	3.03	4.28	4.24	3.74	2.80	1.42	0.00	0.00	
ACTUAL EVAPO-TRANSF. (IN)	0.00	0.00	4.26	2.15	0.09	0.00	0.00	0.00	-0.00	0.00	1.26	0.00	7.87
NET PERCOLATION (IN)													

NOTE: THE FOLLOWING CONDITIONS WERE USED IN COMPUTING THIS WATER BALANCE PER THORNTWHAITE & MATHER / EPA 1975 METHODS.

- 1 THE PROPOSED SITE HAS BEEN ESTIMATED TO BE AT 43.4 DEGREES NORTH LATITUDE.
- 2 THE FOLLOWING STATION, AT THE NOTED RELATIVE LOCATION WAS REFERENCED FOR ATMOSPHERIC DATA  
1 FARAEOO WHICH IS 4.7 MILES NORTH THE SITE LOCATION
- 3 FRAIRIE DU SAC 2 N WHICH IS 6.5 MILES SSW THE SITE LOCATION
- 4 THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) DATA FOR PRECIPITATION AND TEMPERATURE, FOR THE YEARS 1951 THROUGH 1980 FOR THE STATION NOTED IN ITEM 3. HAS BEEN REFERENCED IN THIS ANALYSIS.
- 5 UNADJUSTED POTENTIAL EVAPO-TRANSPIRATION VALUES HAVE BEEN CALCULATED USING THE EQUATION DEVELOPED BY THORNTWHAITE & MATHER AND NOT EPA/1975 TABLE 3 WHICH VARIES AS MUCH AS 0.01 FROM THE DEFINING EQUATION.
- 6 A SNOW FACI (IN EQUIVALENT INCHES OF RAINFALL) IS ACCUMULATED FOR EACH SUB 32 DEGREE FAHRENHEIT MONTH FROM OCTOBER THROUGH SEPTEMBER. THE TOTAL SNOW FACI IS THEN DISPERSED AS EQUIVALENT PRECIPITATION DURING A SPRING MELT EVENT, STARTING WHEN TEMPERATURES APPROACH 32 DEGREES.
- 7 THE CORRECTED EQUIVALENT PRECIPITATION IS THE SUM OF THE MONTHLY PRECIPITATION MINUS THE AMOUNT ADDED TO THE ACCUMULATED SNOW FACI PLUS THE ESTIMATED MONTHLY SNOW MELT.
- 8 RUNOFF COEFFICIENTS HAVE BEEN SELECTED FOR CHOW, FENN, ET.AL. FOR THE TOPSOIL TYPE SPECIFIC TO THIS SITE FOR THE SURFACE SLOPE WHICH HAS BEEN ESTIMATED AS .04 FEET PER FOOT.
- 9 SELECTING AVAILABLE MOISTURE VALUES FROM THE RANGE OF VALUES RECORDED BY SCS. THE FOLLOWING FINAL COVER SYSTEM HAS BEEN ANALYZED:  
THE FINAL COVER WAS SET AT: 24 INCHES OF SILTY SAND WITH 10 % AVAILABLE MOISTURE  
THE ROOT ZONE HAS BEEN ESTIMATED AT: 18 INCHES
- 10 FOR MONTHS WHEN POTENTIAL EVAPO-TRANSPIRATION EXCEEDS INFILTRATION, THE MOISTURE STORAGE VALUES ARE COMPUTED BY THE EQUATION USED TO GENERATE EPA/1975 TABLE 11 THROUGH 22. THE VALUES DO NOT MATCH THE EQUATION VALUES AT ALL POINTS. THESE VARIATIONS DON'T AFFECT THE MONTHLY MOISTURE CHANGE VALUES BY MORE THAN 0.01.
- 11 COMPUTED TABLE VALUES HAVE BEEN ROUNDED TO THE NEAREST 0.01 FOR PRINTING FORMAT. COMPUTE STORAGE ACCURACY OF 100.

WATER BALANCE PROGRAM

1. FOR LOSS WITHOUT LOSS

	JUN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
POTENTIAL (P)	15.0	19.9	20.5	45.7	57.5	66.8	71.1	69.0	60.5	49.8	35.1	22.0	
MONTHLY VALUES	0.00	0.00	0.00	1.89	4.80	7.75	9.24	8.51	5.73	2.81	0.20	0.00	40.93
INDUCTED POT. EVAPO TRANSF.				0.00	0.04	0.00	0.13	0.13	0.09	0.05	0.09	0.00	
LATITUDE CORRECTION (L)	24.3	24.4	30.6	33.6	37.9	38.5	38.5	36.0	31.2	28.5	24.1	22.9	
POTENTIAL EVAPO-TRANSPIRATION	0.00	0.00	0.00	1.24	3.03	4.62	5.39	4.67	2.80	1.42	0.00	0.00	
INFILTRATION	1.00	1.02	2.00	3.14	3.26	3.60	3.81	3.78	3.42	2.17	1.87	1.37	30.43
CUMULATIVE SNOW FAC (IN)	2.26	2.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27	
CORRECTED EVAP. PRECIP. (IN)	0.00	0.00	5.28	3.14	3.26	3.60	3.81	3.78	3.42	2.17	1.87	0.00	
WINDUP COEFFICIENT	0.07	0.07	0.07	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.07	
MONTHLY RUNOFF (IN)	0.00	0.00	0.28	0.16	0.16	0.18	0.19	0.19	0.17	0.11	0.09	0.00	
INFILTRATION (IN)	0.00	0.00	5.00	2.98	3.09	3.42	3.62	3.59	3.25	2.07	1.77	0.00	
PERMEATION (IN)	0.00	0.00	5.00	2.98	3.09	3.42	3.62	3.59	3.25	2.07	1.77	0.00	
PERMEATION (IN)	0.00	0.00	5.00	2.98	3.09	3.42	3.62	3.59	3.25	2.07	1.77	0.00	
CUMULATED WATER LOSS (IN)	0.00	0.00	0.00	0.00	0.00	-1.20	-1.77	-1.08	0.45	0.65	1.77	0.00	
SOIL MOISTURE STORAGE (IN)	0.60	0.60	0.60	0.60	0.60	0.06	0.06	0.00	0.45	0.60	0.60	0.60	
MONTHLY MOISTURE CHANGE (IN)	0.00	0.00	0.00	0.00	0.00	-0.54	-0.06	0.00	0.45	0.15	0.00	0.00	
MONTHLY EVAPO-TRANSF. (IN)	0.00	0.00	0.00	1.24	3.03	3.96	3.68	3.59	2.80	1.42	0.00	0.00	
NET PRECIPITATION (IN)	0.00	0.00	5.00	1.64	0.06	0.00	0.00	0.00	0.00	0.50	1.77	0.00	8.98

NOTE: THE FOLLOWING CONDITIONS WERE USED IN COMPUTING THIS WATER BALANCE PER THORNTWHAITE & MATHER / EPA 1975 METHODS.

1. THE PROPOSED SITE HAS BEEN ESTIMATED TO BE AT 43.27 DEGREES NORTH LATITUDE.
2. THE FOLLOWING STATION, AT THE NOTED RELATIVE LOCATION WAS REFERENCED FOR ATMOSPHERIC DATA  
 1. BARABOO WHICH IS 6.5 MILES NW THE SITE LOCATION  
 2. FAIRIE DU SAC 2 N WHICH IS 5.7 MILES SW THE SITE LOCATION
3. THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) DATA FOR PRECIPITATION AND TEMPERATURE, FOR THE YEARS 1951 THROUGH 1980 FOR THE STATION NOTED IN ITEM 2. HAS BEEN REFERENCED IN THIS ANALYSIS.
4. UNADJUSTED POTENTIAL EVAPO-TRANSPIRATION VALUES HAVE BEEN CALCULATED USING THE EQUATION DEVELOPED BY THORNTWHAITE & MATHER AND NOT EPA/1975, TABLE 3 WHICH VARIES AS MUCH AS 0.01 FROM THE DEFINING EQUATION.
5. A SNOW FAC (IN EQUIVALENT INCHES OF RAINFALL) IS ACCUMULATED FOR EACH SUR 32 DEGREE FARENHEIT MONTH FROM OCTOBER THROUGH SEPTEMBER. THE TOTAL SNOW FAC IS THEN DISPERSED AS EQUIVALENT PRECIPITATION DURING A SINGE MILT EVENT, STARTING WHEN TEMPERATURES APPROACH 32 DEGREES.
6. THE CORRECTED EQUIVALENT PRECIPITATION IS THE SUM OF THE MONTHLY PRECIPITATION MINUS THE AMOUNT ADDED TO THE ACCUMULATED SNOW FAC PLUS THE ESTIMATED MONTHLY SNOW MELT.
7. RUNOFF COEFFICIENTS HAVE BEEN SELECTED PER CHOW, FENN, ET AL. FOR THE TOPSOIL TYPE SPECIFIC TO THIS SITE FOR THE SURFACE SLOPE WHICH HAS BEEN ESTIMATED AS .04 FEET PER FOOT.
8. SELECTING AVAILABLE MOISTURE VALUES TO REFLECT THE GENERAL VALUES NOTED BY EPA/1975, THE FOLLOWING COVER SYSTEM HAS BEEN ANALYZED:  
 THE ROOT ZONE HAS BEEN ESTIMATED AT: 6 INCHES  
 THE FINAL COVER WAS SET AT: 12 INCHES OF FINE SAND WITH 10 % AVAILABLE MOISTURE
9. FOR MONTHS WHEN POTENTIAL EVAPO-TRANSPIRATION EXCEEDS INFILTRATION, THE MOISTURE STORAGE VALUES ARE COMPUTED BY THE EQUATION USED TO GENERATE EPA/1975 TABLE 11 THROUGH 22. THE VALUES DO NOT MATCH THE EQUATION VALUES AT ALL POINTS. THESE VARIATIONS DON'T AFFECT THE MONTHLY MOISTURE CHANGE VALUES BY MORE THAN 0.01.
10. ALL COMPUTED TABLE VALUES HAVE BEEN EQUIPPED TO THE NEAREST 0.01 FOR PRINTING FORMAT. COMPUTER STORAGE ACCURACY OF THE VALUES, RESULTS TO AN ANNUAL TOTAL PRECIPITATION VALUE ACCURACY OF PLUS OR MINUS 0.05.

**Appendix H.2**  
**Gradient Calculations**

PROJECT BAAP Vertical Gradients  
Propellant Burning Ground

COMP BY  
DRP  
CHK BY  
ET

JOB NO.  
6853-10  
DATE  
10/9/92

December 1991 Water Level  
Data used, unless otherwise  
noted.

WELL NEST

GRADIENT

- PBN-82-01A  
PBN-82-01B

$$i = \frac{772.22 - 772.24}{19 \text{ ft}} = \frac{0.02}{19 \text{ ft}} = 0.0011 \uparrow \text{ insignificant water level diff.}$$
- PBN-82-01B  
PBN-82-01C

$$i = \frac{772.24 - 772.26}{9 \text{ ft}} = \frac{0.02}{9 \text{ ft}} = 0.0022 \uparrow \text{ insignificant water level diff.}$$
- PBN-82-02A  
PBN-82-02B

$$i = \frac{771.39 - 771.51}{17 \text{ ft}} = \frac{0.12}{17 \text{ ft}} = 0.0071 \uparrow$$
- PBN-82-02B  
PBN-82-02C

$$i = \frac{771.51 - 771.45}{9 \text{ ft}} = \frac{0.06}{9 \text{ ft}} = 0.0067 \downarrow$$
- PBN-82-03A  
PBN-82-03B

$$i = \frac{769.59 - 769.60}{16 \text{ ft}} = \frac{0.01}{16 \text{ ft}} = 0.0006 \uparrow \text{ insignificant water level diff.}$$
- PBN-82-03B  
PBN-82-03C

$$i = \frac{769.60 - 769.59}{9 \text{ ft}} = \frac{0.01}{9 \text{ ft}} = 0.0011 \downarrow \text{ insignificant water level diff.}$$
- PBN-82-04A  
PBN-82-04B

$$i = \frac{769.19 - 769.27}{16 \text{ ft}} = \frac{0.08}{16 \text{ ft}} = 0.0050 \uparrow$$
- PBN-82-04B  
PBN-82-04C

$$i = \frac{769.27 - 769.27}{10 \text{ ft}} = \frac{0.0}{10 \text{ ft}} = 0.0 \text{ no water level difference}$$
- PBN-82-05A  
PBN-82-05B

$$i = \frac{769.82^* - 769.73^*}{15 \text{ ft}} = \frac{0.09}{15 \text{ ft}} = 0.0060 \downarrow$$

PROJECT EAAP Vertical Gradients Propellant Burning Ground	COMP BY DRD	JOB NO 6853-10
	CHE BY LEF	DATE 10/9/92

WELL/NEST	GRADIENT	COMMENTS
PBN-82-05B PBN-82-05C	$i = \frac{769.73^* - 769.78^*}{10 \text{ ft}} = \frac{0.05}{10 \text{ ft}} = 0.0050 \uparrow$	small water level diff
PBN-85-01A PBN-89-01B	$i = \frac{768.60 - 768.31}{48 \text{ ft}} = \frac{0.29}{48 \text{ ft}} = 0.0060 \downarrow$	
PBN-89-01B PBN-89-01C	$i = \frac{768.31 - 768.42}{32 \text{ ft}} = \frac{0.11}{32 \text{ ft}} = 0.0034 \uparrow$	
PBN-89-01C PBN-89-01D	$i = \frac{768.42 - 768.43}{43 \text{ ft}} = \frac{0.01}{43 \text{ ft}} = 0.0002 \uparrow$	insignificant water level diff
PBN-85-02A PBN-89-02B	$i = \frac{768.56 - 767.25}{28 \text{ ft}} = \frac{1.31}{28 \text{ ft}} = 0.0468 \downarrow$	substantial gradient
PBN-89-02B PBN-89-02C	$i = \frac{767.25 - 767.52}{33 \text{ ft}} = \frac{0.27}{33 \text{ ft}} = 0.0082 \uparrow$	
PBN-85-03A PBN-89-03B	$i = \frac{768.26 - 767.59}{36 \text{ ft}} = \frac{0.67}{36 \text{ ft}} = 0.0186 \downarrow$	
PBN-89-03B PBN-89-03C	$i = \frac{767.59 - 768.27}{35 \text{ ft}} = \frac{0.68}{35 \text{ ft}} = 0.0194 \uparrow$	
PBN-85-04A PBN-89-04B	$i = \frac{766.61 - 766.27}{37 \text{ ft}} = \frac{0.34}{37 \text{ ft}} = 0.0092 \downarrow$	

PROJECT BAAP Vertical Gradients Propellant Burning Ground	COMP BY DRP	JOB NO 6853-10
	CHK BY EF	DATE 10/9/92

WELL NEST	GRADIENT	COMMENTS
PBN-89-04B PBN-89-04C	$i = \frac{766.27 - 766.80}{37 \text{ ft}} = \frac{0.53}{37 \text{ ft}} = 0.0143 \uparrow$	
PBN-89-10A PBN-89-10B	$i = \frac{770.61 - 770.55}{46 \text{ ft}} = \frac{0.06}{46 \text{ ft}} = 0.0013 \downarrow$	small water level diff.
PBN-89-10B PBN-89-10C	$i = \frac{770.55 - 770.89}{29 \text{ ft}} = \frac{0.34}{29 \text{ ft}} = 0.0117 \uparrow$	
PBN-89-10C PBN-89-10D	$i = \frac{770.89 - 770.63}{48 \text{ ft}} = \frac{0.26}{48 \text{ ft}} = 0.0054 \downarrow$	
PBN-89-12A PBN-89-12B	$i = \frac{764.43 - 764.33}{44 \text{ ft}} = \frac{0.10}{44 \text{ ft}} = 0.0023 \downarrow$	small water level diff.
PBN-89-12B PBN-91-12C	$i = \frac{764.33 - 764.27}{45 \text{ ft}} = \frac{0.06}{45 \text{ ft}} = 0.0013 \downarrow$	small water level diff.
PBN-91-12C PBN-91-12D	$i = \frac{764.27 - 764.22}{45 \text{ ft}} = \frac{0.05}{45 \text{ ft}} = 0.0011 \downarrow$	insignificant water level diff.
PBN-91-06C PBN-91-06D	$i = \frac{765.33 - 765.42}{111 \text{ ft}} = \frac{0.09}{111 \text{ ft}} = 0.0008 \uparrow$	small water level diff.
PBN-91-06C PBN-91-06D	$i = \frac{765.42 - 765.44}{53 \text{ ft}} = \frac{0.02}{53 \text{ ft}} = 0.0004 \uparrow$	insignificant water level diff.

PROJECT BAAP Vertical Gradients Settling Ponds and Spoils Disposal Areas	COMP. BY DRP	JOB NO 6853-10
	CHK BY EF	DATE 10/9/92

WELL NEST	GRADIENT	COMMENTS
S1101 S1133	$i = \frac{761.87 - 761.91}{37 \text{ ft}} = \frac{0.04}{37 \text{ ft}} = 0.0011 \uparrow$	Negligible water level diff.
S1133 SPN-89-01C	$i = \frac{761.91 - 761.86}{24 \text{ ft}} = \frac{0.05}{24 \text{ ft}} = 0.0021 \downarrow$	Small water level diff.
SPN-89-02A SPN-89-02B	$i = \frac{761.82 - 761.82}{36 \text{ ft}} = \frac{0.0}{36 \text{ ft}} = 0.0$	No water level difference
SPN-89-02B SPN-89-02C	$i = \frac{761.82 - 761.81}{30 \text{ ft}} = \frac{0.01}{30 \text{ ft}} = 0.0003 \downarrow$	Negligible water level diff.
SPN-89-02C SPN-91-02D	$i = \frac{761.81 - 761.81}{53 \text{ ft}} = \frac{0.0}{53 \text{ ft}} = 0.0$	No water level difference
S1147 SPN-89-03B	$i = \frac{762.28 - 762.18}{35 \text{ ft}} = \frac{0.10}{35 \text{ ft}} = 0.0029 \downarrow$	Small water level diff.
SPN-89-03B SPN-89-03C	$i = \frac{762.18 - 762.20}{34 \text{ ft}} = \frac{0.02}{34 \text{ ft}} = 0.0006 \uparrow$	Negligible water level diff.
SPN-89-03C SPN-91-03D	$i = \frac{762.20 - 762.08}{63 \text{ ft}} = \frac{0.12}{63 \text{ ft}} = 0.0019 \downarrow$	
S1148 SPN-89-04B	$i = \frac{761.94 - 761.87}{30 \text{ ft}} = \frac{0.07}{30 \text{ ft}} = 0.0023 \downarrow$	Small water level difference

PROJECT BAAP Vertical Gradients  
Settling Ponds and Spoils Disposal Areas

COMP BY  
DRP  
CHK BY  
LF

JOB NO  
6853-10  
DATE  
10/9/92

WELL NEST	GRADIENT	COMMENTS
SPN-89-04B SPN-89-04C	$i = \frac{761.87 - 761.91}{32 \text{ ft}} = \frac{0.04}{32 \text{ ft}} = 0.0013 \uparrow$	Insignificant water level diff.
SPN-89-04C SPN-91-04D	$i = \frac{761.91 - 761.89}{100 \text{ ft}} = \frac{0.02}{100 \text{ ft}} = 0.0002 \downarrow$	Insignificant water level diff.
S1152A S1152B	$i = \frac{761.65 - 761.65}{22 \text{ ft}} = \frac{0.0}{22 \text{ ft}} = 0.0$	No water level diff.
S1152B S1103	$i = \frac{761.65 - 761.89}{51 \text{ ft}} = \frac{0.24}{51 \text{ ft}} = 0.0047 \uparrow$	
S1104 S1105	$i = \frac{762.39 - 762.41}{23 \text{ ft}} = \frac{0.02}{23 \text{ ft}} = 0.0009 \uparrow$	Insignificant water level diff.
S1105 S1106	$i = \frac{762.41 - 762.35}{26 \text{ ft}} = \frac{0.06}{26 \text{ ft}} = 0.0023 \downarrow$	Small water level diff.
SPN-89-05A SPN-89-05B	$i = \frac{762.67 - 762.61}{43 \text{ ft}} = \frac{0.06}{43 \text{ ft}} = 0.0014 \downarrow$	Small water level diff.



PROJECT BAAP Horizontal Gradients  
 Water Table  
 Propellant Burning Ground

COMP BY  
 DPP  
 CHK BY  
 EF

JOB NO  
 6853-10  
 DATE  
 7/0/9/92

<u>WELLS</u>	<u>GRADIENT</u>	<u>COMMENT</u>
PBM-89-11 LON-89-03A	$i = \frac{773.9 - 771.11}{2,050 \text{ ft}} = \frac{2.79 \text{ ft}}{2,050 \text{ ft}} = 0.0014$	Northern PBG SE flow vector
PBM-82-01 PBN-82-04A	$i = \frac{771.23 - 769.19}{1,375 \text{ ft}} = \frac{2.04 \text{ ft}}{1,375 \text{ ft}} = 0.0015$	Beneath PBG SE flow vector
PBN-82-03A PBM-89-07	$i = \frac{769.71^* - 766.04^*}{2,650 \text{ ft}} = \frac{3.67 \text{ ft}}{2,650 \text{ ft}} = 0.0014$	South of PBG S. Flow vector
PBM-85-06 S1148	$i = \frac{765.33 - 761.94}{2,450 \text{ ft}} = \frac{3.39 \text{ ft}}{2,450 \text{ ft}} = 0.0014$	PBG + SPA area S. Flow vector

Note: Water level data from 12/15/91.  
 \*- April 1992 water level data

PROJECT BAAP Horizontal Gradients Gravel/Cobble Zone Propellant Burning Ground	COMP BY DRP	JOB NO 6853-10
	CHK BY LEF	DATE 10/9/92

<u>WELLS</u>	<u>GRADIENT</u>	<u>COMMENT</u>
PBN-89-10B PBN-89-01B	$i = \frac{770.55 - 768.31}{1,650 \text{ ft}} = \frac{2.24 \text{ ft}}{1,650 \text{ ft}} = 0.0014$	PBG southerly vector
PBN-89-01B PBN-89-04B	$i = \frac{768.31 - 766.27}{1,675 \text{ ft}} = \frac{2.04}{1,675 \text{ ft}} = 0.0012$	"
PBN-89-04B PBN-89-12B	$i = \frac{766.27 - 764.33}{1,300 \text{ ft}} = \frac{1.94}{1,300 \text{ ft}} = 0.0015$	"

PROJECT BAAP VERTICAL GRADIENTS DETERRENT BURNING GROUND	COMP BY LEF	JOB NO 5753-11
	CHK BY PLB	DATE 10-8-92

WELL NEST	GRADIENT	COMMENT
DBN-89-04A+B	$i = \frac{780.25 - 776.79}{40 \text{ ft}} = \frac{3.46'}{40'} = 0.0865'$	
DBN-89-02A+B	$i = \frac{777.04 - 776.94}{37 \text{ ft}} = \frac{0.10'}{37'} = 0.0027'$	Small Water Level Difference
S1122+DBN-82-01B	$i = \frac{777.12 - 777.06}{22 \text{ ft}} = \frac{0.06'}{22'} = 0.0027'$	Small Water Level Difference
DBN-82-01B+C	$i = \frac{777.06 - 777.13}{10 \text{ ft}} = \frac{0.07'}{10'} = 0.0070'$	Small Water Level Difference
ELN-91-07A+B	$i = \frac{776.88 - 776.90}{23 \text{ ft}} = \frac{0.02'}{23'} = 0.0009'$	Insignificant Water Level Difference

PROJECT <b>BAAP VERTICAL GRADIENTS</b> DETERMINATION OF GROUND/ELEVATION DIFFERENTIAL	COMP BY JEF	JOB NO 5752
	CHK BY PLB	DATE 10-8-92

WELL/NEST	GRADIENT	COMMENT
ELN-89-02 A+B	$i = \frac{776.88 - 776.24}{27 \text{ ft}} = \frac{0.64'}{27'} = 0.0237 \downarrow$	
ELN-89-04 A+B	$i = \frac{776.86 - 776.06}{44 \text{ ft}} = \frac{0.80'}{44'} = 0.0182 \downarrow$	
SI153 + ELN-89-06 B	$i = \frac{777.07 - 776.73}{49 \text{ ft}} = \frac{0.34'}{49'} = 0.0069 \downarrow$	
ELN-82-01 A+B	$i = \frac{777.82 - 777.76}{16 \text{ ft}} = \frac{0.06'}{16'} = 0.0038 \downarrow$	Small Water Level Difference
ELN-82-01 B+C	$i = \frac{777.76 - 777.44}{9 \text{ ft}} = \frac{0.32'}{9'} = 0.0356 \downarrow$	
ELN-82-02 A+B	$i = \frac{777.39 - 777.43}{14 \text{ ft}} = \frac{0.04'}{14'} = 0.0029 \uparrow$	Insignificant Water Level Difference
ELN-82-02 B+C	$i = \frac{777.43 - 777.41}{11 \text{ ft}} = \frac{0.02'}{11'} = 0.0018 \downarrow$	Insignificant Water Level Difference
ELN-82-03 A+B	$i = \frac{777.28 - 777.11}{15 \text{ ft}} = \frac{0.17'}{15'} = 0.0113 \downarrow$	Small Water Level Difference
ELN-82-03 B+C	$i = \frac{777.11 - 777.11}{10 \text{ ft}} = \frac{0'}{10'} = 0.0000$	
ELN-82-04 A+B	$i = \frac{778.09 - 777.83}{18 \text{ ft}} = \frac{0.26'}{18'} = 0.0144 \downarrow$	
ELN-82-04 B+C	$i = \frac{777.83 - 777.27}{8 \text{ ft}} = \frac{0.56'}{8'} = 0.0700 \downarrow$	

PROJECT: E.A.P. HORIZONTAL GRADIENTS	COMP BY LEF	JOB NO 5752-11
DETERMINING GROUND	CHK BY RFB	DATE 12-7-77

WELLS	GRADIENT	COMMENT
DBM-82-02 and ELM-89-09	$i = \frac{780.56 - 779.21}{350 \text{ ft}} = \frac{1.35'}{350'} = 0.0039$	above silt layer
DBM-89-05 and ELM-89-01	$i = \frac{783.89 - 778.05}{1,150 \text{ ft}} = \frac{5.84'}{1,150'} = 0.0051$	above silt layer
DBM-89-04A and ELN-82-04A	$i = \frac{780.25 - 778.09}{750 \text{ ft}} = \frac{2.16'}{750'} = 0.0029$	above silt layer
ELM-89-09 and ELN-82-03A	$i = \frac{779.21 - 777.28}{1,150 \text{ ft}} = \frac{1.93'}{1,150'} = 0.0017$	above silt layer
ELN-82-03C and ELN-89-06B	$i = \frac{777.11 - 776.73}{500 \text{ ft}} = \frac{0.38'}{500'} = 0.0008$	below silt layer
ELM-89-08 and ELN-91-07B	$i = \frac{776.97 - 776.90}{1,440 \text{ ft}} = \frac{0.07'}{1,440'} = 0.00005$	below silt layer Small Water Level Difference

PROJECT **BAAP** Horizontal Gradients  
Rocket Paste Area, NG Pond, New Acid  
Area

COMP BY  
**DRD**  
CHK BY  
**[Signature]**

JOB NO  
**6853-10**  
DATE  
**10/9/92**

WELLS

GRADIENT

S1124 and  
NPM-89-01

$$i = \frac{776.47 - 776.08}{490 \text{ ft}} = \frac{0.39 \text{ ft}}{490 \text{ ft}} = 0.0008$$

NPM-89-01 and  
RPM-89-01

$$i = \frac{776.08 - 774.76}{3000 \text{ ft}} = \frac{1.32 \text{ ft}}{3000 \text{ ft}} = 0.0004$$

NAN-81-04B and  
S1118

$$i = \frac{777.0 - 773.82}{5700 \text{ ft}} = \frac{3.18}{5700 \text{ ft}} = 0.0006$$

December 1991 Water Level Data was used to calculate gradients.

PROJECT BAAP Horizontal Gradients Old Acid Area and Old Fuel Oil Tank Area	COMP BY DRP	JOB NO 6853-10
	CHK BY LF	DATE 10/9/92

<u>WELLS</u>	<u>GRADIENT</u>	<u>COMMENT</u>
OAM-89-01 and OAM-89-02	$i = \frac{786.01 - 785.72}{290 \text{ ft}} = \frac{0.29 \text{ ft}}{290 \text{ ft}} = 0.0010$	
OAM-89-02 and S1126	$i = \frac{785.72 - 785.05}{470 \text{ ft}} = \frac{0.67 \text{ ft}}{470 \text{ ft}} = 0.0014$	
OAM-89-01 and S1126	$i = \frac{786.01 - 785.05}{750 \text{ ft}} = \frac{0.96}{750 \text{ ft}} = 0.0013$	

December 1991 Water Level Data was used to calculate gradients

PROJECT <i>Off-Post Area South of BAMP</i> <i>Vertical Gradients</i>	COMP BY <i>JAE</i>	JOB NO <i>6853-07</i>
	CHK BY <i>EF</i>	DATE <i>9/19/92</i>

WELL TEST

G-RADIENT

<i>PBN-91-01C</i> <i>PBM-90-01D</i>	$i = \frac{742.99 - 743.25}{57 \text{ ft}} = \frac{0.26 \text{ ft}}{57 \text{ ft}} = 0.0046 \uparrow$	<i>Small Water Level Difference</i>
<i>PBN-91-02B</i> <i>PBN-91-02C</i>	$i = \frac{742.86 - 742.94}{45 \text{ ft}} = \frac{0.08 \text{ ft}}{45 \text{ ft}} = 0.0018 \uparrow$	<i>Insignificant Water Level Difference</i>
<i>PBN-91-02C</i> <i>PBM-90-02D</i>	$i = \frac{742.94 - 742.78}{45 \text{ ft}} = \frac{0.16 \text{ ft}}{45 \text{ ft}} = 0.0036 \downarrow$	<i>Small Water Level Difference</i>
<i>PBN-91-03B</i> <i>PBN-91-03C</i>	$i = \frac{742.11 - 742.18}{46 \text{ ft}} = \frac{0.07 \text{ ft}}{46 \text{ ft}} = 0.0015 \uparrow$	<i>Insignificant Water Level Difference</i>
<i>PBN-91-03C</i> <i>PBM-90-03D</i>	$i = \frac{742.18 - 742.04}{47 \text{ ft}} = \frac{0.14 \text{ ft}}{47 \text{ ft}} = 0.0030 \downarrow$	<i>Small Water Level Difference</i>
<i>PBN-90-04B</i> <i>PBN-90-04D</i>	$i = \frac{738.80 - 738.73}{102 \text{ ft}} = \frac{0.07 \text{ ft}}{102 \text{ ft}} = 0.0007 \downarrow$	<i>Insignificant Water Level Difference</i>
<i>SWN-91-01B</i> <i>SWN-91-01C</i>	$i = \frac{754.77 - 754.76}{50 \text{ ft}} = \frac{0.01 \text{ ft}}{50 \text{ ft}} = 0.0002 \downarrow$	
<i>SWN-91-01C</i> <i>SWN-91-01D</i>	$i = \frac{754.76 - 754.76}{39 \text{ ft}} = \frac{0.00}{39 \text{ ft}} = 0.000 -$	
<i>SWN-91-02C</i> <i>SWN-91-02D</i>	$i = \frac{753.80 - 753.76}{32 \text{ ft}} = \frac{0.04 \text{ ft}}{32 \text{ ft}} = 0.0012 \downarrow$	





PROJECT *053-Post Area South of BATH*  
*Vertical Gradients*

COMP BY  
*JFE*  
 CHK BY  
*LEF*

JOB NO  
*06853-07*  
 DATE  
*9/6/02*

WELL NEST

GRADIENT

*SWN-91-03B*  
*SWN-91-03C*

$$i = \frac{752.33 - 752.37}{51 \text{ ft}} = \frac{0.04 \text{ ft}}{51 \text{ ft}} = 0.0008 \uparrow$$

*Insignificant*  
*Water Level*  
*Difference*

*SWN-91-03C*  
*SWN-91-03D*

$$i = \frac{752.37 - 752.34}{46 \text{ ft}} = \frac{0.03 \text{ ft}}{46 \text{ ft}} = 0.0006 \downarrow$$

*SWN-91-03D*  
*SWN-91-03E*

$$i = \frac{752.34 - 752.30}{28 \text{ ft}} = \frac{0.04 \text{ ft}}{28 \text{ ft}} = 0.0014 \downarrow$$

*SWN-91-04C*  
*SWN-91-04D*

$$i = \frac{750.88 - 750.95}{32 \text{ ft}} = \frac{0.07 \text{ ft}}{32 \text{ ft}} = 0.0022 \uparrow$$

*SWN-91-05B*  
*SWN-91-05C*

$$i = \frac{748.26 - 748.18}{36 \text{ ft}} = \frac{0.08 \text{ ft}}{36 \text{ ft}} = 0.0022 \downarrow$$

*SWN-91-05C*  
*SWN-91-05D*

$$i = \frac{748.18 - 748.00}{55 \text{ ft}} = \frac{0.18 \text{ ft}}{55 \text{ ft}} = 0.0033 \downarrow$$

*Small Water*  
*Level*  
*Difference*

PROJECT *Off-Post Area South of BAAP*  
*Horizontal Gradients*

COMP BY  
*JAB*  
 CHK BY  
*EF*

JOB NO  
*6853-07*  
 DATE  
*9/16/92*

WELLS	GRADIENT	Comment
SWN-91-03B PBN-91-02B	$i = \frac{752.33 - 742.86}{4,000 \text{ ft.}} = \frac{9.47 \text{ ft}}{4000 \text{ ft}} = 0.0024$	Flow-line near center of plume
SWN-91-04C SWN-91-05C	$i = \frac{750.88 - 748.18}{900 \text{ ft}} = \frac{2.70 \text{ ft}}{900 \text{ ft}} = 0.0030$	Flow-line east of plume, closer to WPrL dam
SWN-91-01B PBN-91-03B	$i = \frac{754.77 - 742.11}{6,400 \text{ ft}} = \frac{12.66}{6,400} = 0.0020$	Flow-line west of plume, further from WPrL dam

**Appendix H.3**  
**Velocity Calculations**

PROJECT BAAP Groundwater Flow Velocities  
 Propellant Burning Ground

COMP BY  
 DRP

JOB NO  
 6853-10

CHK BY  
 EF

DATE  
 10/9/92

Calculate the average linear flow velocity in the PBG/SPA area, assume:

- 1)  $K = 5.3 \times 10^{-2}$  to  $8.5 \times 10^{-2}$  cm/sec with median value of  $6.9 \times 10^{-2}$  cm/sec (values from aquifer pumping test)
- 2)  $n = 0.25$  to  $0.35$
- 3)  $i = 0.0015$  max (use with low K soils)  
 $i = 0.0013$  min (use with high K soils)  
 $i = 0.0014$  median (use with median K soils)

$$\bar{V}_{\max} = \frac{(K_{\max})(i_{\min})}{n_{\min}} = \frac{(8.5 \times 10^{-2} \text{ cm/sec})(0.0013)}{0.25}$$

$$= 4.4 \times 10^{-4} \text{ cm/sec}$$

$$\cong 460 \text{ ft/yr}$$

$$\bar{V}_{\min} = \frac{(K_{\min})(i_{\max})}{n_{\max}} = \frac{(5.3 \times 10^{-2} \text{ cm/sec})(0.0015)}{0.35}$$

$$= 2.3 \times 10^{-4} \text{ cm/sec}$$

$$\cong 235 \text{ ft/yr}$$

$$\bar{V}_{\text{median}} = \frac{(\bar{K})(\bar{i})}{\bar{n}} = \frac{(6.9 \times 10^{-2} \text{ cm/sec})(0.0014)}{0.30}$$

$$= 3.22 \times 10^{-4} \text{ cm/sec}$$

$$\cong 330 \text{ ft/yr}$$

PROJECT BAAP-DETERRENT BURNING GROUND  
GROUNDWATER FLOW VELOCITIES

COMP BY  
LEF  
CHK BY  
JAB

JOB NO  
5753-11  
DATE  
10-9-92

I Calculate the average linear flow velocity for groundwater in the elevated/perched flow system, assume:

- a.  $k = 1 \times 10^{-3}$  to  $7 \times 10^{-3}$  cm/sec
- b.  $n = 0.25$  to  $0.30$
- c.  $i = 0.005$  to  $0.002$

$$\bar{v}_{max} = \frac{k_{max} i_{min}}{n_{min}} = \frac{(7 \times 10^{-3} \frac{cm}{sec})(0.002)}{0.25}$$

$$= 5.6 \times 10^{-5} \text{ cm/sec}$$

$$\approx 60 \text{ ft/yr}$$

$$\bar{v}_{min} = \frac{k_{min} i_{max}}{n_{max}} = \frac{(1 \times 10^{-3} \frac{cm}{sec})(0.005)}{0.30} = 1.7 \times 10^{-5} \text{ cm/sec}$$

$$\approx 20 \text{ ft/yr}$$

II Calculate the average linear velocity for groundwater in the deeper flow system, assume:

- a.  $k = 2 \times 10^{-1}$  to  $2 \times 10^{-2}$  cm/sec
- b.  $n = 0.25$  to  $0.35$
- c.  $i = 0.00005$  to  $0.0008$

$$\bar{v}_{max} = \frac{k_{max} i_{max}}{n_{min}} = \frac{(2 \times 10^{-1} \frac{cm}{sec})(0.0008)}{0.25} = 6.4 \times 10^{-4} \text{ cm/sec}$$

$$\approx 650 \text{ ft/yr}$$

$$\bar{v}_{min} = \frac{k_{min} i_{min}}{n_{max}} = \frac{(2 \times 10^{-2} \frac{cm}{sec})(0.00005)}{0.35} = 4.6 \times 10^{-5} \text{ cm/sec}$$

$$\approx 50 \text{ ft/yr}$$

Note:  $k_{max}$  and  $i_{max}$  are analyzed together here to better reflect field conditions.

PROJECT BAAP Groundwater Flow Velocities Rocket Paste Area, NG Pond, New Acid Area	COMP BY DRP	JOB NO 6853-10
	CHK BY EF	DATE 10/9/92

Calculate the average linear flow velocity in the Rocket Paste Area, Nitroglycerine Pond, New Acid Area

- Assume: 1)  $K = 1 \times 10^{-1}$  to  $2 \times 10^{-1}$   
 2)  $n = 0.25$  to  $0.35$   
 3)  $i = 0.0004$  to  $0.0008$

$$\begin{aligned} \bar{V}_{\max} &= \frac{(K_{\max})(i_{\min})}{n_{\min}} = \frac{(2 \times 10^{-1} \text{ cm/sec})(0.0004)}{(0.25)} \\ &= 3.2 \times 10^{-4} \text{ cm/sec} \\ &\cong 330 \text{ ft/yr} \end{aligned}$$

$$\begin{aligned} \bar{V}_{\min} &= \frac{(K_{\min})(i_{\max})}{n_{\max}} = \frac{(1 \times 10^{-1} \text{ cm/sec})(0.0008)}{(0.35)} \\ &= 2.3 \times 10^{-4} \text{ cm/sec} \\ &\cong 240 \text{ ft/yr} \end{aligned}$$

$$\begin{aligned} \bar{V}_{\text{median}} &= \frac{(\bar{K})(\bar{i})}{(\bar{n})} = \frac{(1.5 \times 10^{-1})(0.0006)}{(0.30)} \\ &= 3.0 \times 10^{-4} \text{ cm/sec} \\ &\cong 310 \text{ ft/yr} \end{aligned}$$

PROJECT BAAP Groundwater Flow Velocities  
Old Acid Area and Old Fuel Oil Tank Area

COMP BY  
DRP

JOB NO  
6853-10

CHK BY  
LEF

DATE  
10/9/92

Calculate the average linear flow velocity in the Old Acid  
and Old Fuel Oil Tank Areas

Assume: 1)  $k = 2 \times 10^{-2}$  to  $3 \times 10^{-2}$  cm/sec  
2)  $n = 0.25$  to  $0.35$   
3)  $i = 0.0010$  to  $0.0014$

$$\begin{aligned}\bar{V}_{\max} &= \frac{(K_{\max})(i_{\min})}{n_{\min}} = \frac{(3 \times 10^{-2} \text{ cm/sec})(0.0010)}{(0.25)} \\ &= 1.2 \times 10^{-4} \text{ cm/sec} \\ &\approx 125 \text{ ft/yr}\end{aligned}$$

$$\begin{aligned}\bar{V}_{\min} &= \frac{(K_{\min})(i_{\max})}{n_{\max}} = \frac{(2 \times 10^{-2} \text{ cm/sec})(0.0014)}{0.35} \\ &= 8 \times 10^{-5} \text{ cm/sec} \\ &\approx 85 \text{ ft/yr}\end{aligned}$$

$$\begin{aligned}\bar{V}_{\text{median}} &= \frac{(\bar{K})(\bar{i})}{(\bar{n})} = \frac{(2.5 \times 10^{-2} \text{ cm/sec})(0.0012)}{0.30} \\ &= 1.0 \times 10^{-4} \text{ cm/sec} \\ &\approx 105 \text{ ft/year}\end{aligned}$$

PROJECT Off-Post Area South of BAAP Groundwater Flow Velocity	COMP. BY JAB	JOB NO 6853-07
	CHK BY EF	DATE 9/16/92

I Calculate the average linear flow velocity South of BAAP  
assume:

- 1)  $K = 1 \times 10^{-2}$  to  $2 \times 10^{-2}$  cm/sec with avg. value of  $1.5 \times 10^{-2}$
- 2)  $n = 0.25$
- 3)  $i = 0.0019$  to  $0.0024$

$$\bar{V}_{max} = \frac{K_{max} I_{max}}{n} = \frac{(2 \times 10^{-2} \text{ cm/sec})(0.003)}{0.25} = 0.00024 \text{ cm/sec}$$

$$\approx 250 \text{ ft/yr}$$

$$\bar{V}_{avg} = \frac{K_{avg} I_{avg}}{n} = \frac{(1.5 \times 10^{-2} \text{ cm/sec})(0.0024)}{0.25} \approx 150 \text{ ft/yr}$$

$$\bar{V}_{min} = \frac{K_{min} I_{min}}{n} = \frac{(1 \times 10^{-2} \text{ cm/sec})(0.0019)}{0.25} \approx 80 \text{ ft/yr}$$

$$\bar{V}_{avgst} = \frac{K I_{avg}}{n} = \frac{(6.9 \times 10^{-2} \text{ cm/sec})(0.0024)}{0.25} = 680 \text{ ft/yr}$$



**Appendix H.4**  
**Preliminary Aquifer Test Results IRM**

PROJECT BHAP Phase II Rough T+S Calcs from Olin P-test	COMP BY JAE	JOB NO. 6049-10
	CHK BY	DATE 3/8/10

### T/R<sup>2</sup> Analysis

For Match Point based upon all 5 wells

$$\begin{aligned}
 u &= 1 \\
 H(u) &= 1 \\
 s &= 0.046 \\
 t/r^2 &= 0.00093 \text{ min/ft}^2 \\
 &= 6.46 \times 10^{-3} \text{ day/ft}^2 \\
 Q &= 100 \text{ gpm}
 \end{aligned}$$

$$\begin{aligned}
 T &= \frac{114.6 Q H(u)}{s} \\
 &= \frac{114.6 (100 \text{ gpm})(1)}{0.046} \\
 &= 250,000 \text{ gpd/ft}^2
 \end{aligned}$$

$$\begin{aligned}
 K &= T/b \\
 &= 250,000 / 150 \\
 &= 1700 \text{ gpd/ft}
 \end{aligned}$$

$$\begin{aligned}
 S &= \frac{u T t}{1.87 r^2} \\
 &= \frac{(1)(250,000 \text{ gpd/ft}^2)(6.46 \times 10^{-3})}{1.87} \\
 &= 0.086 \\
 &\text{(unreasonably low)}
 \end{aligned}$$

For MW-1 data

$$\begin{aligned}
 u &= 1 \\
 H(u) &= 1 \\
 s &= 0.049 \\
 t/r^2 &= 0.0017 \text{ min/ft}^2 = 1.18 \times 10^{-6} \text{ day/ft}^2 \\
 Q &= 100 \text{ gpm}
 \end{aligned}$$

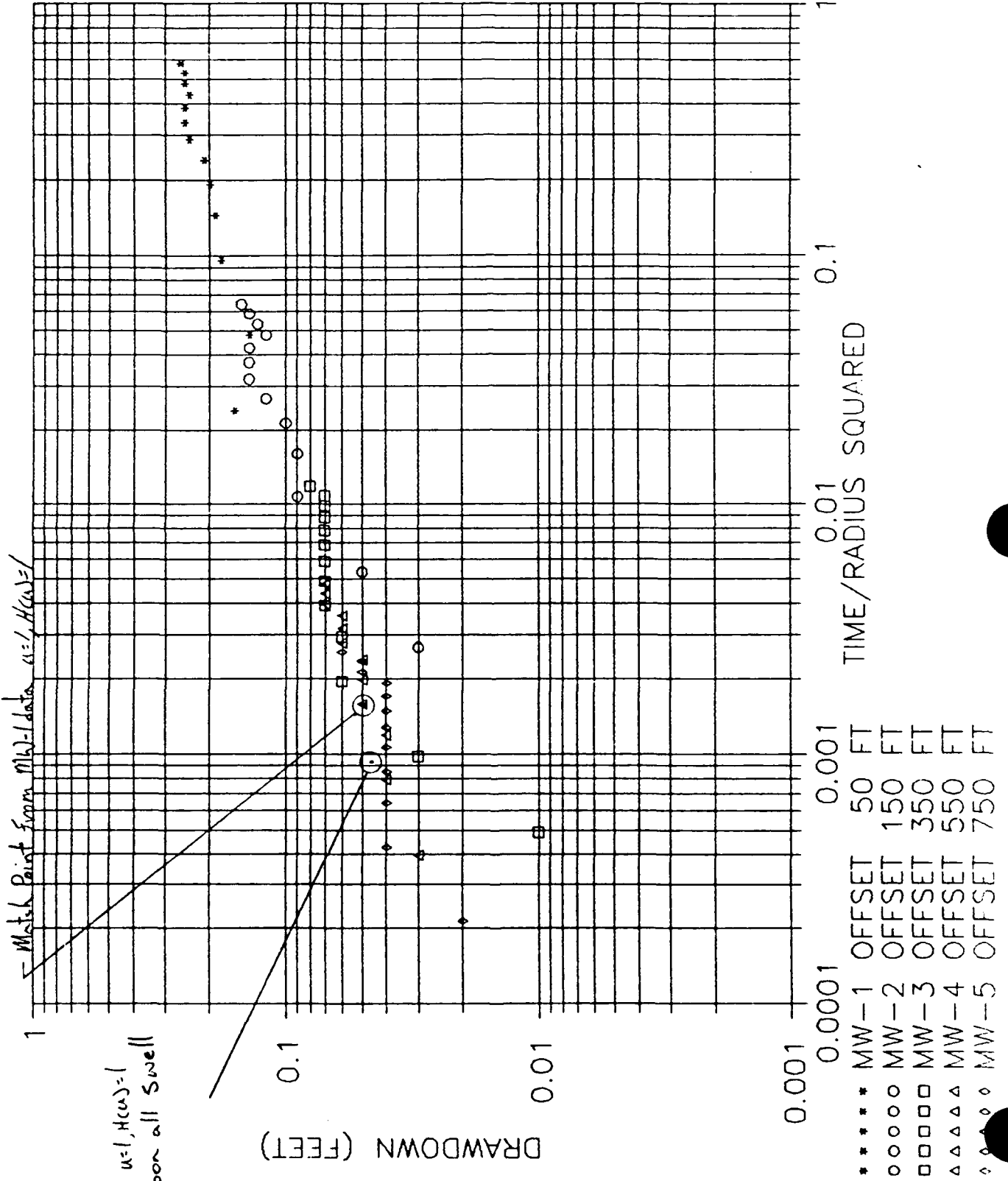
$$\begin{aligned}
 T &= \frac{114.6 Q H(u)}{s} \\
 &= \frac{114.6 (100 \text{ gpm})(1)}{0.049} \\
 &= 230,000 \text{ gpd/ft}^2
 \end{aligned}$$

$$\begin{aligned}
 K &= T/b \\
 &= \frac{230,000 \text{ gpd/ft}^2}{150 \text{ ft}} \\
 &= 1600 \text{ gpd/ft} = 7 \times 10^{-2} \text{ cm/sec}
 \end{aligned}$$

$$\begin{aligned}
 S &= \frac{u T t}{1.87 r^2} \\
 &= \frac{1 (230,000 \text{ gpd/ft}^2)(1.18 \times 10^{-6})}{1.87} \\
 &= 0.15
 \end{aligned}$$

appears slightly lower than expected.

# TIME/RADIUS SQUARED VS. DRAWDOWN



PROJECT EAAP Phase II Rough T+S Cakes from Clin P test	COMP BY JAE	JOB NO E049-10
	CHK BY	DATE 3/7/89

Jell MW-2 Time-Drawdown Analyses  
Match Point from Entire Curve

$$\begin{aligned}
 u &= 1 \\
 H(u) &= 1 \\
 s &= 0.04 \text{ ft} \\
 t &= 23 \text{ min} \\
 r &= 150 \text{ ft} \\
 Q &= 100 \text{ gpm}
 \end{aligned}$$

Then

$$\begin{aligned}
 T &= \frac{114.6 \text{ G H(u)}}{s} \\
 &= \frac{114.6 (100 \text{ gpm})(1)}{0.04 \text{ ft}} \\
 &\approx 290,000 \text{ gpd/ft}
 \end{aligned}$$

$$K = T/b$$

$$\begin{aligned}
 &= \frac{290,000 \text{ GPD/ft}}{150 \text{ ft}} \\
 &= 1900 \text{ gpd/ft}
 \end{aligned}$$

Match from late data only

$$\begin{aligned}
 u &= 1 \\
 H(u) &= 1 \\
 s &= 0.16 \text{ ft} \\
 t &= 390 \text{ min} = 0.27 \text{ day} \\
 r &= 150 \text{ ft} \\
 Q &= 100 \text{ gpm}
 \end{aligned}$$

Then

$$\begin{aligned}
 T &= \frac{114.6 \text{ G H(u)}}{s} \\
 &= \frac{114.6 (100 \text{ gpm})(1)}{0.16 \text{ ft}} \\
 &\approx 70,000 \text{ gpd/ft}
 \end{aligned}$$

$$K = T/b$$

$$\begin{aligned}
 &= \frac{70,000 \text{ gpd/ft}}{150 \text{ ft}} \\
 &= 470 \text{ gpd/ft} = 2 \times 10^{-2} \text{ cm/sec}
 \end{aligned}$$

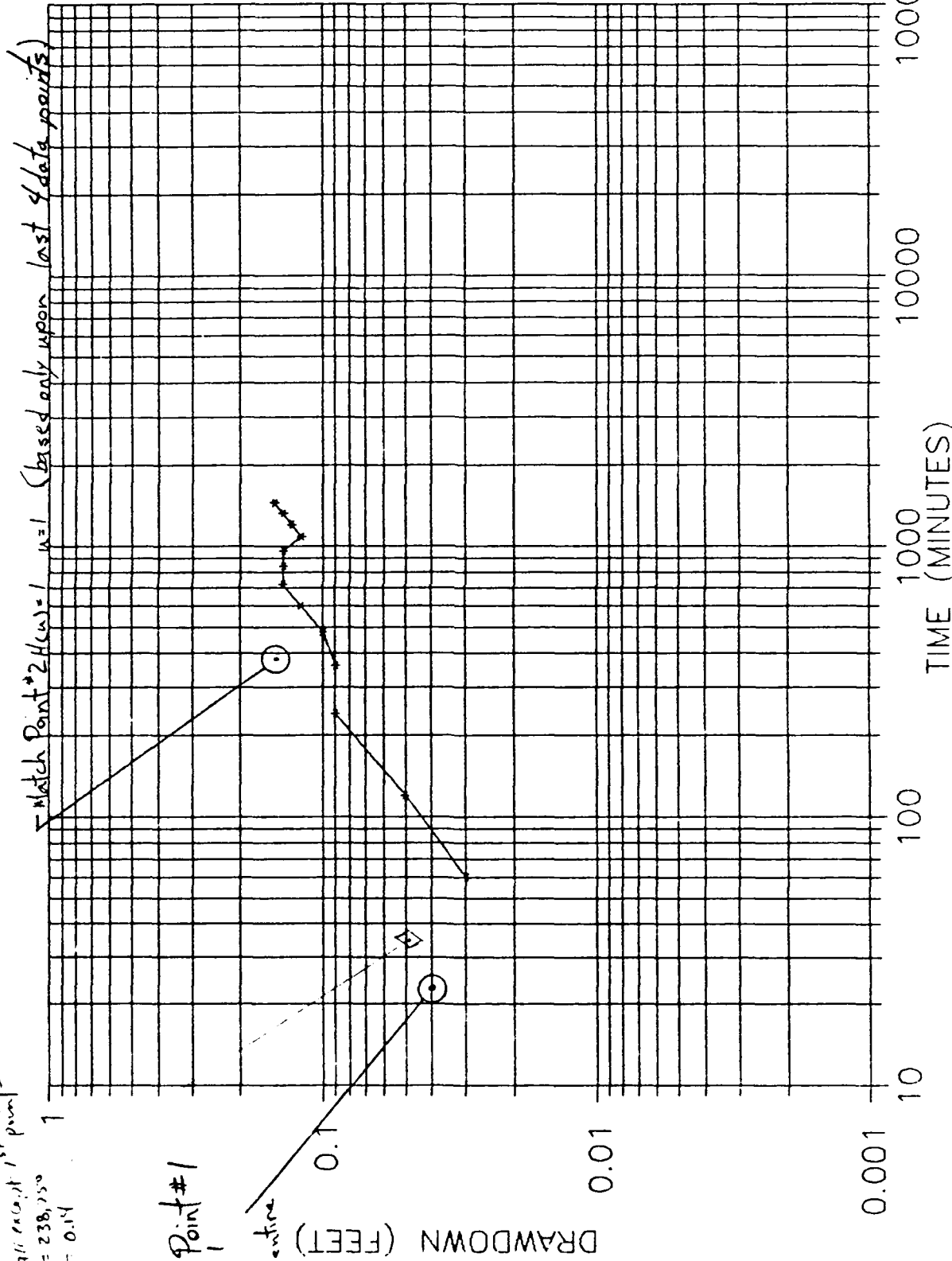
Specific Yield Analyses

$$\begin{aligned}
 S &= \frac{uTt}{1.87r^2} \\
 &= \frac{(1)(70,000 \text{ gpd/ft})(0.27 \text{ day})}{1.87(150 \text{ ft})^2}
 \end{aligned}$$

= 0.45  
appears quite high, indicates poor match, therefore Transmissivity Calc. is likely invalid

# Time WELL MW-2 DISTANCE - DRAWDOWN

#3  
 MP(1,1)  
 all except 1st point  
 $T = 238,250$   
 $S = 0.14$



**Appendix H.5**  
**High Capacity Well Survey**

HIGH CAPACITY WELL SURVEY REPORT  
FEASIBILITY STUDY  
BADGER ARMY AMMUNITION PLANT

During the period between May 14 and 24, 1990, E.C. Jordan Co. (Jordan) personnel performed a survey of off-post high capacity wells south of the Badger Army Ammunition Plant (BAAP). The purpose of this survey was threefold: (1) to estimate water table elevations south of BAAP from the high capacity wells; (2) to prepare a water table contour plan of this area with groundwater flow directions; and (3) to gain information for siting a series of off-post monitoring wells intended to characterize the nature of the volatile organic compound (VOC) plume south of BAAP. Data from the sampling and analysis of off-post residential wells by personnel from Olin were also considered in selecting monitoring well locations.

Objectives 1 and 2 were accomplished and the results of the high capacity well survey correlate well with the elevations and flow directions developed from Jordan's groundwater flow model of the BAAP region. The third objective, siting monitoring wells for plume definition, was modified upon receipt of the results from BAAP's residential well sampling program. The water quality sampling and analysis indicated the VOC plume had migrated downgradient at least three miles from the Propellant Burning Ground source area, to within one-third mile of the Wisconsin River. Based upon these results, the purpose of the new off-post monitoring wells was redefined to assess contaminant conditions in the southern portion of the plume, near Highway 78 and the Prairie du Sac municipal well. The Prairie du Sac municipal well (No. 2) is located just south of where the contaminant plume may be expected to discharge to the Wisconsin River, making a preliminary assessment of groundwater flow in this vicinity of critical importance. The results of the survey are discussed in greater detail in the following paragraphs.

SCOPE OF THE HIGH CAPACITY WELL SURVEY

Based on a field survey, review of Wisconsin Department of Natural Resources (WDNR) records, and discussions with well owners, 33 wells were identified for inclusion in this survey. Of these, 20 were high capacity wells and 13 were monitoring wells, "sand points," or residential wells. The locations of these wells are shown in Figure 1, and the owners and well types are identified in Table I.

After contacting well owners to gain permission for access, water levels were measured in each well. Where possible, an electronic water level meter was used to make measurements. However, for the irrigation wells, water levels were measured using an air-line measuring gauge present on most wells. The air-line gauges have questionable accuracy due to poor maintenance, inaccurate installations, and inefficiencies in operation. Groundwater levels measured with the air-line gauges may be off by 5 or more feet, as illustrated in the following paragraph. When possible, information on typical water levels was also gathered from irrigation well owners and/or well logs. The groundwater elevation data from all sources are tabulated in Table I.

The water level in the northern Kindshi well (well 2A), located northwest of the Highway 12-County Z intersection, was measured with a standard electronic water level meter as well as with the air-line gauge on the well. The electronic meter measured a water depth of 67 feet (elevation 758 feet above mean sea level, MSL), the air-line indicated a depth of 77 feet (elevation 748 feet, MSL), and the well log indicated a depth of 65 feet (elevation 760 feet, MSL). At other high capacity wells, the air-line water levels were also lower than levels supplied by owner information or well logs, typically by 5 to 15 feet. Based on the results of this comparison, the water levels obtained from well owners or well logs were generally considered more accurate than the air-line measurements.

To relate the elevation of the water table aquifer to the Wisconsin River, a series of six water level measuring points were established along the Wisconsin River south of the Wisconsin Power and Light (WP&L) dam. The location of these points are presented in Figure 1 and the measured elevations are listed in Table II. Information on the elevation of the reservoir above the dam was obtained from WP&L records. As Table II indicates, the water level of the river downstream from the dam varied by 2 to 3 feet during the period of field activities. However, this variation does not appear to substantially affect the water table in the study area. Water levels measured in monitoring wells below the dam (wells 7B through 7G and 16A through 16C) showed only a modest 0.2 to 0.3 foot decline in elevations from May 18 to June 7, 1990.

In order to obtain adequate elevation control for this off-post work, Vierbicher Associates, Inc. (Vierbicher) were contracted to perform a vertical survey of the irrigation wells, monitoring wells, and measuring points along the Wisconsin River. The surveyed elevations from Vierbicher are summarized in Tables I and II.

After reviewing the groundwater level data gathered at each well, the values that best reflected the expected water table elevations in the aquifer were utilized to assess the regional flow system. These values are presented on Figure 2 along with the results of a groundwater flow model completed for the BAAP region during the Phase II Remedial Investigation (RI).

#### MODEL OF THE GROUNDWATER FLOW SYSTEM

The numerical groundwater flow model developed for the BAAP region during the RI includes the area south of the installation where the high capacity well survey was conducted. Because the water levels generated by the model correlate well with the measured values, the model has been a very useful tool to assist in characterizing the flow system south of BAAP.

Jordan selected the USGS modular groundwater flow model (MODFLOW) for the BAAP RI. The model was applied in a two-dimensional aerial plan and reflects conditions in the sand and gravel glacial outwash water table aquifer. The model boundaries include no-flow conditions along the north where the Baraboo Hills rise as well as to the west where the outwash thins and sandstone outcrops occur. Above the WP&L dam, the Lake Wisconsin reservoir is treated as a river



with a low permeability bottom which restricts flow into or out of the reservoir. Below the WP&L dam, the river is treated as a constant head zone which receives groundwater discharge. These areas make up the lateral boundaries of the model. Recharge from precipitation has been applied to the model area at a rate of six inches per year. The aquifer permeability has been calibrated to approximately 100 to 200 feet per day which is well within the typical measured permeability range of 50 to 400 feet per day from slug tests and preliminary aquifer tests. Further details on the model description, calibration, and sensitivity analysis will be presented in the BAAP RI Report.

#### WATER QUALITY DATA

The water quality samples collected from residential wells in the area south of BAAP by Olin were analyzed for the VOCs found along the southern BAAP boundary (carbon tetrachloride, trichloroethylene, and chloroform). Table III summarizes the results of the analyses to date and the impacted wells are located on Figure 3. The analytical results show the presence of carbon tetrachloride and chloroform in three wells located within the likely flow path of the contaminant plume south of BAAP. A fourth well located adjacent to this flow path contained only chloroform. Chloroform was also detected in three wells located east of the expected plume flow path, but its presence at these residences may be related to chlorination of the water supply systems rather than activities at BAAP. None of the organic chemicals of concern were detected in the Prairie du Sac municipal well.

#### OFF-POST MONITORING WELL LOCATIONS

Figure 3 shows the impacted residential wells and presents the modeled water table contours for this area. Groundwater flow lines drawn from the approximate eastern and western boundaries of the plume area at the southern end of BAAP have been extended southward perpendicular to the contour lines to give an approximate expected orientation of the plume south of BAAP. This figure indicates the plume may be expected to discharge to the Wisconsin River north of the Prairie du Sac municipal well. However, it is important to note that neither the zone-of-influence of the Prairie du Sac municipal well nor the precise nature of the groundwater discharge conditions into the Wisconsin River have been taken into account.

To better characterize the southerly extent of the plume and to make a preliminary evaluation of the potential for future impacts to occur at the Prairie du Sac municipal well, Jordan recommends the installation of five additional deep monitoring wells. Proposed locations for these new wells are included on Figure 3. The wells designated 1 through 3 are intended to transect the plume and may encounter contaminated groundwater. Well 4, located upgradient of the Prairie du Sac municipal well and the Prairie du Sac industrial park, is intended to intercept a more southerly vector of groundwater flow which might bring the plume closer to the municipal well. Well 5, located north/northeast of the Prairie du Sac municipal well should provide preliminary data on the zone-of-influence of that well and may intercept contaminated groundwater flowing towards the well.

The wells should be screened over a 10 to 20 foot interval in coarse sand and gravel layers above the bedrock surface (approximately 225 to 250 feet below the ground surface). The permeable coarse sand and gravel layers are a likely preferential flow path for the VOC plume and may also transmit much of the water pumped by the Prairie du Sac municipal well. In addition, residential wells with the highest concentration of VOCs appear to be screened just above the bedrock surface.

The new wells will assist in characterizing the geologic and hydrogeologic subsurface conditions in this area. With this additional information, proper scoping for future investigations and remediation of the groundwater in this area may be completed. It is anticipated that future work may focus on refining the plume boundaries, evaluating the bedrock/overburden aquifer interactions, further characterizing the zone-of-influence of the Prairie du Sac municipal well, and assessing the groundwater discharge conditions to the Wisconsin River.

**OFF-POST GROUNDWATER ELEVATIONS  
FEASIBILITY STUDY  
BADGER ARMY AMMUNITION PLANT**

Well #	Well Owner	Well Type	Surf. Elev.	Water Depth in Feet	Water Elevation	Water Elevation
1A	Noldon	High Cap.-Irr.	828.05	92-A, 82-L	736-A, 746-L	746
1B	Noldon	High Cap.-Irr.	823.91	85-A	739-A	739
2A	Kindschl #1	High Cap.-Irr.	825.25	77-A, 67-E, 65-L	748-A, 758-E, 760-L	758
2B	Kindschl #3	High Cap.-Irr.	832.18	89 to 92-A, 80-L	743 to 740-A, 752-L	752
2C	Kindschl #2	High Cap.-Irr.	823.03	71 to 76-A, 62-L	752 to 747-A, 761-L	752
3A	No well existed at this location					
3B	Lins	High Cap.-Irr.	836.78	84-A, 80-L	753-A, 757-L	753
3C	Lins	High Cap.-Irr.	832.98	84-A, 79-L	749-A, 754-L	749
4	Mrs. Lloyd Mueller	High Cap.-Irr.	826.43	83-L	743-L	743
5A	Dan Ganser	High Cap.-Irr.	758.61	28-A, 19.5-O	731-A, 739-O	739
5B	Dan Ganser	High Cap.-Irr.	828.03	85 to 87-A, 80-O	743 to 741-A, 748-O	748
6A	Mel Bickford	High Cap.-Irr.	818.72	113-A, 100-O, 79-L	705-A, 719-O, 740-L	740
6B	Mel Bickford	High Cap.-Irr.	780.98	55-A, 47-O, 50-L	726-A, 734-O, 731-L	734
7A	Franz Weetenbach	High Cap.-Irr.	748.60	26-A	723-A	723
7B	DATCP SK4-1	Monitoring	746.26	11.12-E	735.14-E	735.14
7C	DATCP SK4-2	Monitoring	746.16	11.02-E	735.14-E	735.14
7D	DATCP SK4-3	Monitoring	746.02	10.88-E	735.14-E	735.14
7E	DATCP SK3-1	Monitoring	748.51	13.40-E	735.11-E	735.11
7F	DATCP SK3-2	Monitoring	748.47	13.37-E	735.10-E	735.10
7G	DATCP SK3-3	Monitoring	748.34	13.25-E	735.09-E	735.09
8	Dave Lohr	High Cap.-Irr.	850.85	96-A	755-A	755
9A	Weiss	High Cap.-Irr.	754.35	17-O	737-O	737
9B	Weiss	High Cap.-Irr.	759.97	22.2-E	738-E	738
10	Art Mueller	High Cap.-Irr.	820.44	80-O, 65-L	740-O, 755-L	755
11	City of Prarie du Sac	High Cap.-Irr.	785.87	69-A, 54-L	717-A, 732-L	732
12	Hunter VanAlstyne	High Cap.-Irr.	815.54	86-O	729-O	729
14	City of Prarie du Sac	Municipal	775.85	43-A	733-A	733
15	Dairy Coop	High Cap.-Prod.	755.49	39 Above Grade	794 (Artesian Bdrk)	794
16A	Tri County Coop	Monitoring	835.00	85.45-E	749.55-E	749.55
16B	Tri County Coop	Monitoring	837.27	85.25-E	752.02-E	752.02
16C	Tri County Coop	Monitoring	836.27	86.73-E	749.54-E	749.54
17	Zander	Residential	866.31	110.4-E	756-E	756
18A	Sauk City	Sand Point	753.78	20.00-E	734-E	734
18B	Sauk City (Fire Sta)	Monitoring	754.66	20.44-E	734.22-E	734.22
18C	Wash & Dallas St.	Sand Point	761.00	26.46-E	734.54-E	734.54

Note: Source of water level measurement data.

A= Airlino

E= Electric Probe

O= Owner information

L= Log

TABLE II  
 OFF-POST SURFACE WATER ELEVATION  
 FEASIBILITY STUDY  
 BADGER ARMY AMMUNITION PLANT

Surface Water Point Temporary Benchmark	5-18-90		5-21-90		5-21-90		6-7-90	
	Benchmark Elevation ft., MSL	Water Depth ft.	Water Elev. ft., MSL	Water Depth ft.	Water Elev. ft., MSL	Water Depth ft.	Water Elev. ft., MSL	
TBM-1	738.04	---	---	0.2	737.8	4.6	733.5	
TBM-2	780.71	45.9	734.8	43.2	737.5	47.1	733.6	
TBM-3	736.44	2.4	734.0	0.1	736.4	3.6	732.8	
TBM-4	762.91	28.6	734.3	26.1	736.8	29.8	733.1	
TBM-5	753.34	20.5	732.8	18.2	735.1	21.6	731.7	
TBM-6	730.81	---	---	0.2	730.6	2.7	728.1	

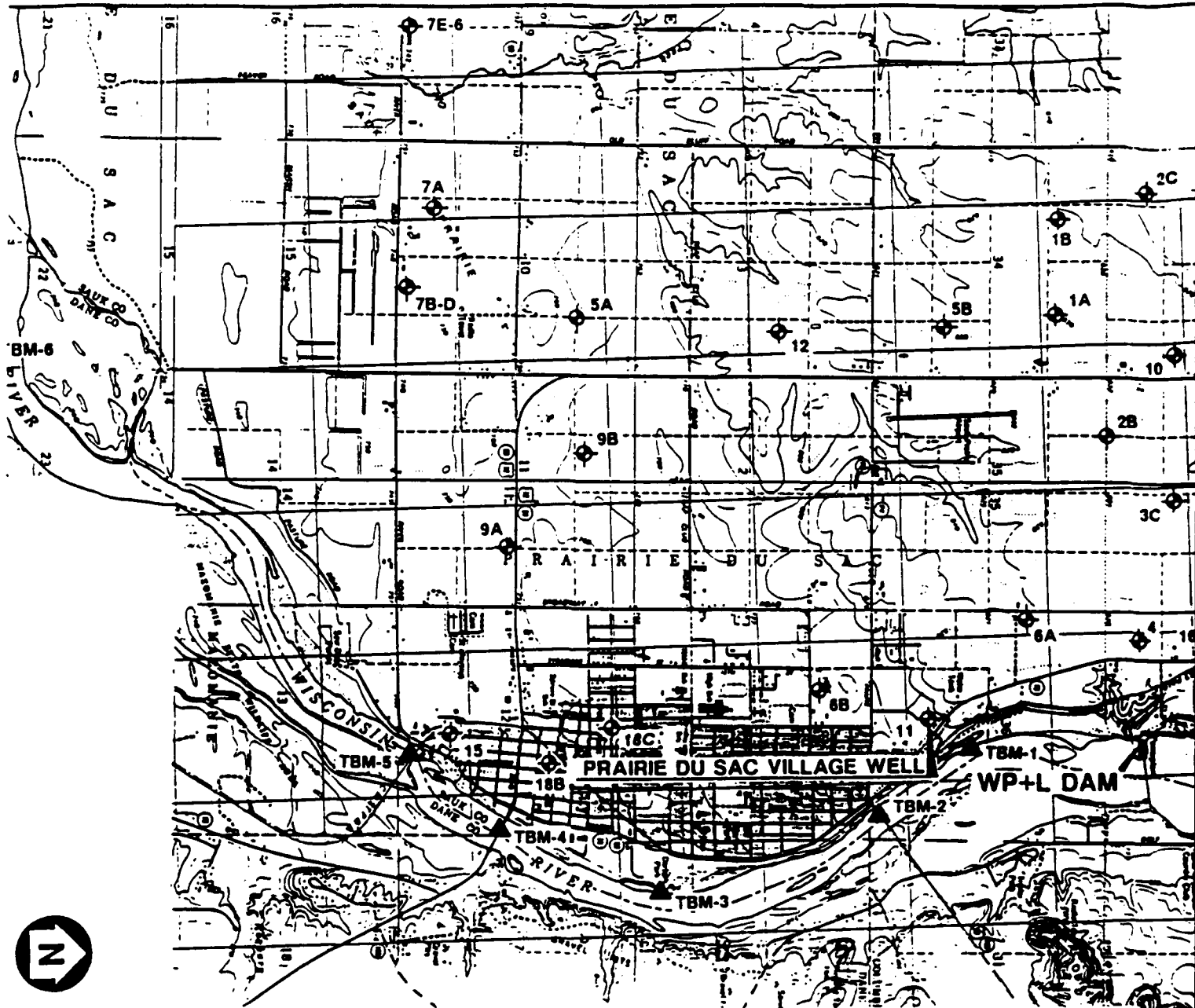
- Note: 1. Water elevation in reservoir above dam ranged from 773.7 to 774.2 ft. MSL from 5-15-90 to 6-7-90. (data from WP&L personnel).
2. Measurements from TBM-1 and TBM-6 are less accurate than other benchmarks, therefore they are rounded to the nearest foot.
3. Open flood gates after 5-19-90 resulted in a 2 to 3 foot rise in water level in river below dam. Gates were closed prior to 6-7-90 river measurement. Groundwater elevations do not appear to be greatly affected by the elevations during the time when flood gates were open.
4. MSL is mean sea level.

TABLE III  
 OFF-POST IMPACTED  
 RESIDENTIAL WELLS  
 FEASIBILITY STUDY  
 BADGER ARMY AMMUNITION PLANT

Well Designation	Carbon Tetrachloride (ppb)	Chloroform (ppb)
A	80	9.9
B	15	2.2
C	12	1.7
D	ND	2.7
E	ND	2.4
F	ND	2.4
G	ND	2.3
H	ND	30

- Note: 1. All concentrations in parts per billion, ppb or ug/l.
2. Well locations are shown on Figure 3, except for well F. Well F. is located northeast of plume area and does not appear to be related to the Propellant Burning Ground plume.
3. E.C. Jordan has not been involved in sample collection or data QA/QC.
4. Laboratory detection limits:  
 carbon tetrachloride=0.3 ppb  
 chloroform=1.4 ppb  
 trichloroethylene=0.3 ppb
5. The trace level chloroform concentrations at wells D, G, and H may be related to chlorination of water supply system.
6. ND indicates no detectable concentration.

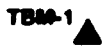
plb  
 6-15-80  
 offpowa3



**LEGEND**



**2A** APPROXIMATE LOCATION AND DESIGNATION OF WELLS USED IN HIGH CAPACITY WELL SURVEY. REFER TO TABLE 1 FOR WELL OWNER AND TYPE OF INSTALLATION.



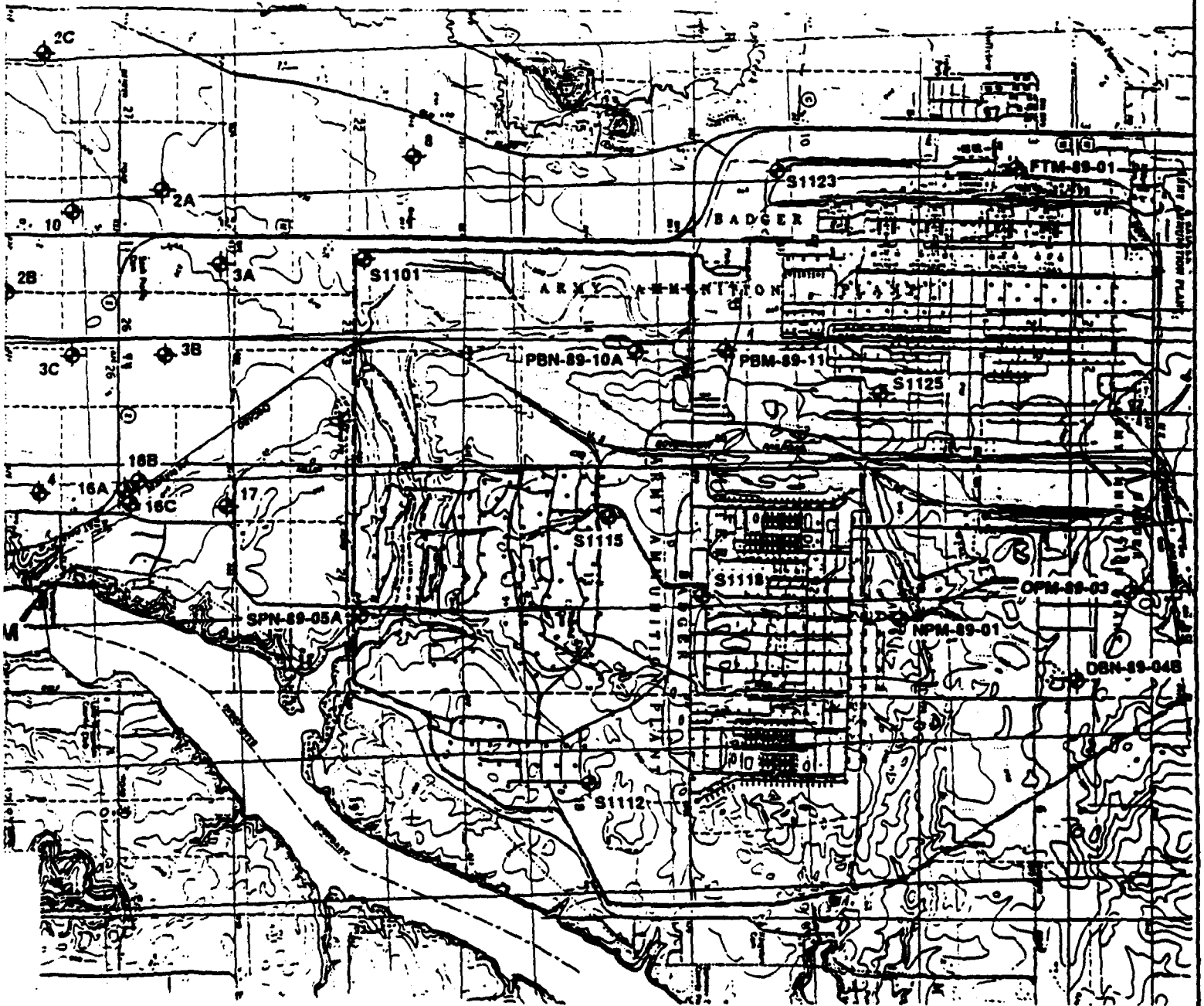
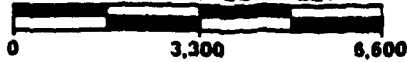
**TBM-1** APPROXIMATE LOCATION AND DESIGNATION OF TEMPORARY BENCHMARK ESTABLISHED ALONG THE WISCONSIN RIVER

**NOTE:**

1. OFF-POST WELL LOCATIONS ARE APPROXIMATE

SOURCE: USGS QUADRANGLES; SAUK CITY, BLACK EARTH, NORTH FREEDOM, AND SAUK PRAIRIE, 7.5 MINUTE SERIES.

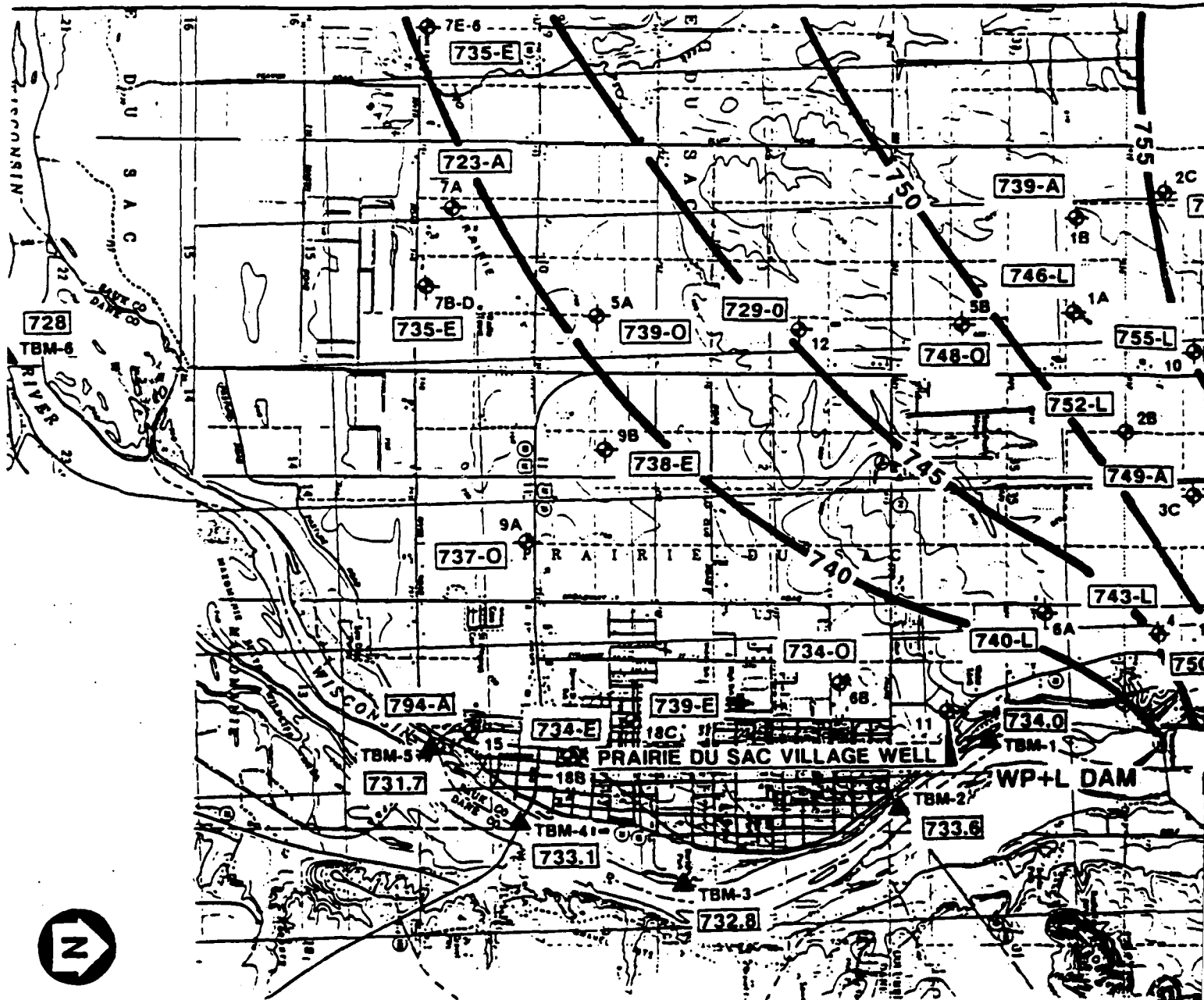
APPROXIMATE SCALE IN FEET



**FIGURE 1**  
**OFF-POST WELL LOCATION PLAN**  
**BADGER ARMY AMMUNITION PLANT.**

ECJORDANCO

6



**LEGEND**

- ◆ APPROXIMATE LOCATION DESIGNATION AND WATER LEVEL ELEVATION MEASURED IN WELL. SEE NOTE #1 FOR DESCRIPTION OF SUFFIX CODE.
- ▲ APPROXIMATE SURFACE WATER ELEVATION MEASURED ON WISCONSIN RIVER.
- WATER TABLE CONTOURS BASED UPON RESULTS OF GROUNDWATER MODEL FOR SITE REGION.

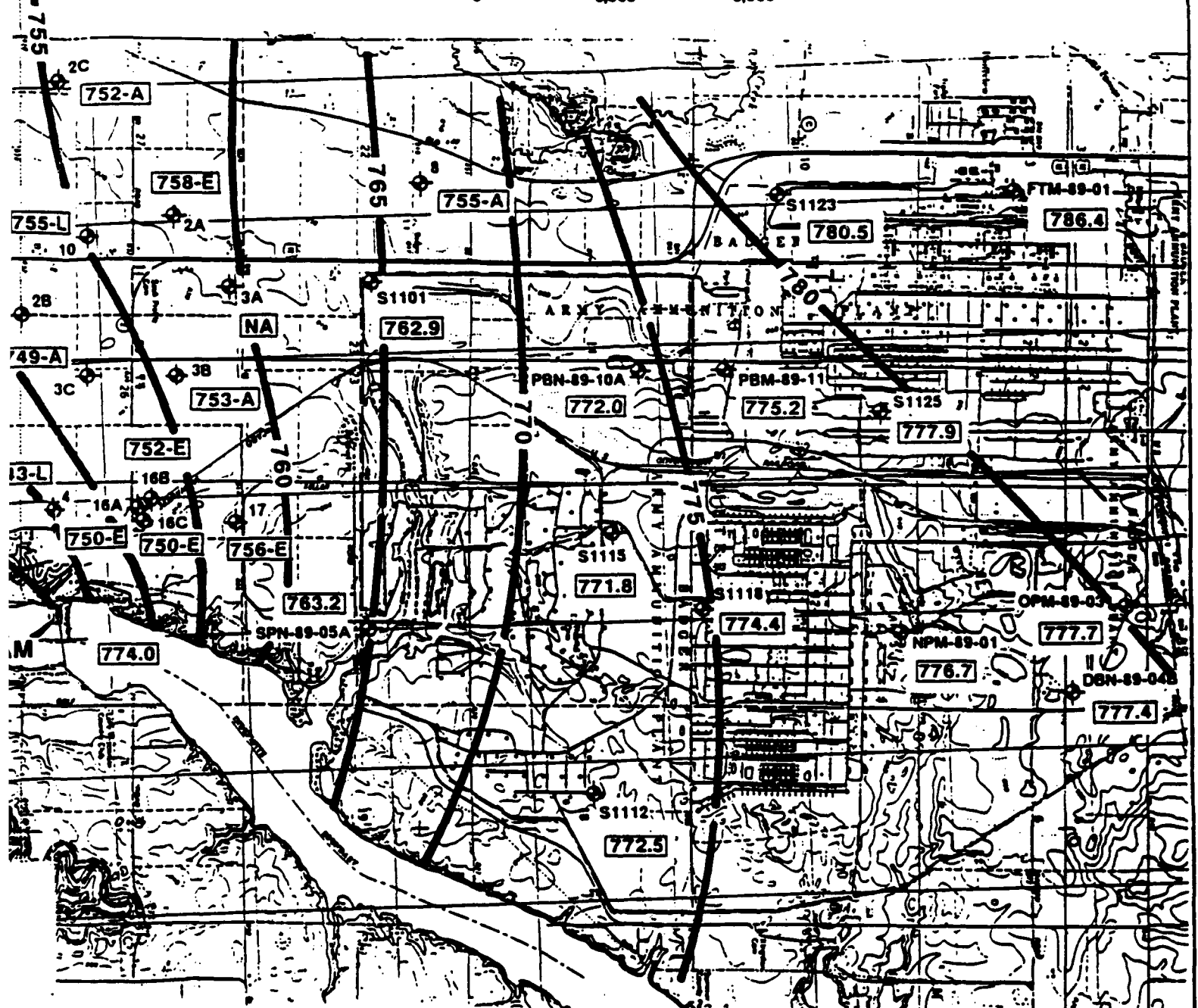
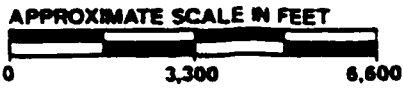
**NOTES:**

1. SUFFIX CODE FOR WELLS LOCATED OFF BAAP FACILITY INDICATE SOURCE OF WATER LEVEL.
 

A = AIR-LINE GAUGE	O = OWNER INFORMATION
E = ELECTRIC WATER LEVEL METER	L = WELL LOG DATA
2. WATER LEVELS ON BAAP FACILITY MEASURED TO NEAREST 0.1 FT. ALL OTHER WATER LEVEL MEASURED TO NEAREST FOOT.
3. WATER LEVELS MEASURED BETWEEN 5/15/90 AND 6/7/90.
4. WELL 15 WITH ELEVATION 794 REFLECTS ARTESIAN BEDROCK CONDITIONS.

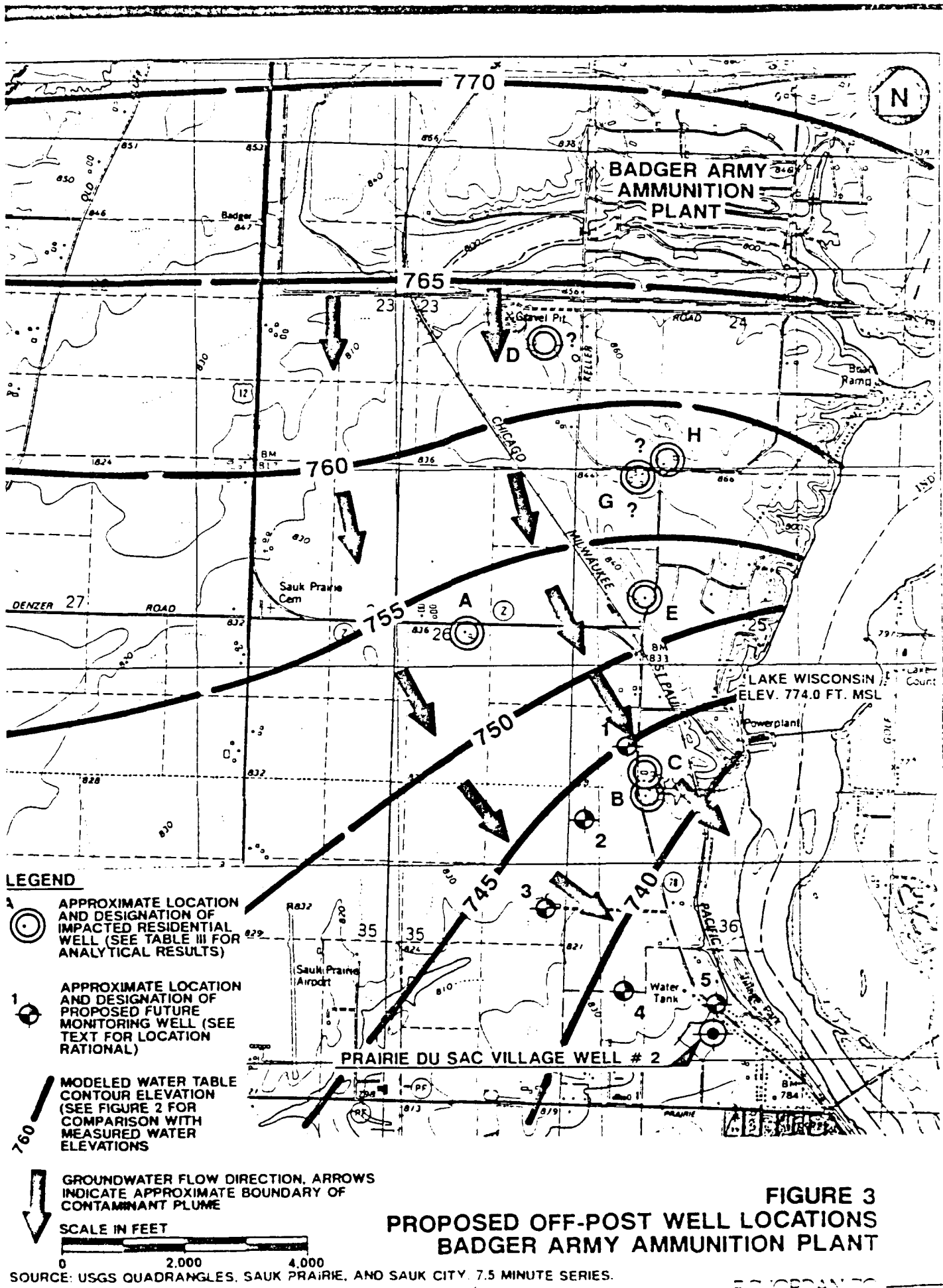


SOURCE: USGS QUADRANGLES: SAUK CITY, BLACK EARTH, NORTH FREEDOM, AND SAUK PRAIRIE 7.5 MINUTE SERIES.



**FIGURE 2**  
**REGIONAL WATER TABLE CONTOUR PLAN**  
**BADGER ARMY AMMUNITION PLANT**

ECJORDANCO



**FIGURE 3**  
**PROPOSED OFF-POST WELL LOCATIONS**  
**BADGER ARMY AMMUNITION PLANT**

**Appendix H.6**  
**Production Well No. 4**  
**Zone-of-Influence**

PROJECT BHAP, Zone of Influence of Well #4	COMP BY JAE	JOB NO 5753-18
	CHK BY [Signature]	DATE 1/2/70

Determine likely zone-of-influence of Well #4

f. Use pumping rate from specific capacity test (302 gpm)  
This is approximately equal to the typical pumping rate of 13,000,000 gallons per month

3 Well Radius = 3m or 0.25 ft

C assume  $T = 120,000 \text{ GPD/ft}^2$  +  $k = 960 \text{ GPD/ft}$ ,  $b = 125 \text{ ft}$   
(From specific capacity test data)

D from specific capacity test 302 gpm  $\Rightarrow$  604 gpm/ft  $\therefore s = \frac{302}{604} = 0.5 \text{ ft}$

E. use Driscoll page 213\* to estimate Radius of Influence

$$Q = \frac{K(H^2 - h^2)}{1.055 \log \frac{R}{r}} \quad \text{then } R = r \log^{-1} \left[ \frac{K(H^2 - h^2)}{1055 Q} \right]$$

$$= 0.25 \text{ ft } \log^{-1} \left[ \frac{960 \frac{\text{GPD}}{\text{ft}} [(125 \text{ ft})^2 - (120.5 \text{ ft})^2]}{1055 (302 \text{ gpm})} \right]$$

$$= 1,200 \text{ ft} \quad (43 \text{ ft wt/G} = 56 \text{ gpm} + s = 0.5 \text{ ft})$$

if  $b = 165 \text{ ft}$  and  $k = 750 \text{ gpd/ft}$  then

$$R = 0.25 \text{ ft } \log^{-1} \left[ \frac{750 [(165 \text{ ft})^2 - (160.5 \text{ ft})^2]}{1055 (302 \text{ gpm})} \right]$$

$$= 1600 \text{ ft} \quad (50 \text{ ft wt/G} = 56 \text{ gpm} + s = 0.5 \text{ ft})$$

\* Driscoll, F.S., 1986. "Groundwater and Wells"; Second Edition; Johnson Division Publishers; St. Paul, Minnesota.

PROJECT TITLE  
 A. ...  
 for Zone of Infiltration Control

COMP BY  
 CHK BY

JOB NO  
 DATE

Retention ...

As ...  
 $2 \times 10^{-3} + 2 \times 10^{-3} \dots = -005 \dots 150$   
 $\dots \times 110 = \dots$

Specific Capacity Test at BHP Well #4

1. Specific Capacity = 60.4 gpd/ft
2. Rough estimate of T = 60.4 x 2000 = 120,000 GPD/ft<sup>2</sup>
3. assuming B = 785 - 660 ≈ 125 ft
4. K = T/B = 120,000 GPD/ft / 125 ft = 960 gpd/ft<sup>2</sup>  
 = 4.5 x 10<sup>-2</sup> cm/sec
5. assume B = 785 - 620 ≈ 165
- 6 K = T/B = 120,000 GPD/ft / 165 ≈ 730 gpd/ft<sup>2</sup>  
 = 3.4 x 10<sup>-2</sup> cm/sec

APPENDIX I  
HYDRAULIC CONDUCTIVITY TEST RESULTS

## APPENDIX I: HYDRAULIC CONDUCTIVITY TEST RESULTS

ABB-ES has completed a series of rising-head slug tests on 64 deep and shallow monitoring wells (53 new wells installed during the BAAP RI and 11 previously existing wells) at BAAP. The majority of the wells tested were located in the Propellant Burning Ground, Landfill 1, the Deterrent Burning Ground, Existing Landfill, Settling Ponds, Rocket Paste Area, Oleum Plant and Oleum Plant Pond, and off-post south of BAAP. Initially, four to five tests were performed at each well with water level depressions increasing from approximately one to 10 feet as the tests progressed. These numerous tests were completed at each well because of the rapid water level recovery rates, typically three to four minutes. However, as the testing proceeded and fairly consistent results were generated, the number of tests completed at each well was decreased to two to three. This appendix discusses the analytical procedure and presents estimated values of hydraulic conductivity. The test methodology is presented in each section.

Field data from all wells were analyzed to estimate aquifer hydraulic conductivity using the method of Hvorslev (1951).<sup>1</sup> This empirical method assumes an unconfined aquifer where hydraulic conductivity is related to the well geometry and the rate of water rise by:

$$K = \frac{d^2 \ln(2mL/D)}{8L + (t_2 - t_1)} \ln(H_1/H_2)$$

Parameters in this equation included: d (well diameter), D (the borehole diameter), L (the length of aquifer tested), m (the aquifer transformation ratio), as well as time (t) and water level (H) data. In the data presented below, Jordan has used a transformation ratio (m) of one.

The Hvorslev calculations for tests completed prior to 1991 were made using a computer-based technique that requires the user to input well data (d, D, L) and select water level (H) and time (t) from a plot of log H versus time.

---

<sup>1</sup>Hvorslev, M.J., 1951. "Time Lag and Soil Permeability in Groundwater Observations;" U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin 36; Vicksburg, Mississippi.

## APPENDIX I

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Field data from tests performed during November and December of 1991 were analyzed using a derivation of the Hvorslev equation:

$$-K = \left[ \frac{\text{Log } (H_1) - \text{Log } (H_2)}{t_1 - t_2} \right] \frac{r^2 \text{Log } (L/R)}{2(L)}$$

The H values were normalized to positive values in order to utilize this equation.

The 1991 data were also analyzed using AQTESOLV™<sup>2</sup>, an aquifer test analysis program by Geraghty Miller, Inc. AQTESOLV™ utilizes the Bouwer and Rice method (1976)<sup>3</sup> for determining hydraulic conductivities in unconfined aquifers.

The results of hydraulic conductivity testing at the 64 wells at BAAP are summarized in Table I-1. The results range from  $2 \times 10^{-1}$  to  $1 \times 10^{-4}$  cm/sec with a more typical range of  $2 \times 10^{-2}$  to  $6 \times 10^{-2}$  cm/sec. These values reflect the highly permeable conditions of the outwash aquifer underlying BAAP.

Analyses for each specific test are presented following Table I-1. The first sheet presents a semi-log plot of water level recovery at each well with the values selected for analyses being circled. The second sheet presents the well geometry and raw data; here the values selected for analyses are underlined. Following the recovery plots, well geometry and raw data are the Hvorslev calculations for the 1991 data and the AQTESOLV™ plots. All units are referenced to feet (length) and minutes (time). The static water level in each well was referenced to zero feet. Therefore, the water levels (head) during recovery are recorded as negative values.

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<sup>2</sup>AQTESOLV, 1991 "AQTESOLV, Aquifer Test Solver Version 1.00;" Geraghty and Miller Modeling Group; Reston, VA.

<sup>3</sup>Bouwer, H. and R.C. Rice, 1976. A Slug Test Method for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells. Water Resources Research, Vol. 12, No. 3, pp 423-428.



TABLE I-1  
FIELD HYDRAULIC CONDUCTIVITY TEST RESULTS

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL	TEST NO.	MAXIMUM WATER LEVEL DEPRESSION (feet)	HYDRAULIC CONDUCTIVITY/ HVORSLEV (cm/sec)
BGM-91-01	1	1.21	$1.0 \times 10^{-3}$
S1123	1	6.7	$1.0 \times 10^{-4}$
	2	1.5	$1.0 \times 10^{-4}$
PBM-89-11	1	1.0	$4.1 \times 10^{-2}$
	2	1.5	$4.1 \times 10^{-2}$
PBN-82-03B	1	3.3	$1.0 \times 10^{-1}$
	2	3.4	$1.0 \times 10^{-1}$
PBN-82-03C	1	3.4	$7.8 \times 10^{-4}$
	2	8.9	$7.2 \times 10^{-4}$
	3	9.0	$7.1 \times 10^{-4}$
PBN-89-01B	1	0.6	$2.6 \times 10^{-2}$
	2	1.3	$2.3 \times 10^{-2}$
	3	2.0	$4.0 \times 10^{-2}$
	4	2.9	$2.4 \times 10^{-2}$
	5	3.7	$2.7 \times 10^{-2}$
PBN-89-01C	1	3.0	$3.0 \times 10^{-2}$
	2	4.8	$3.1 \times 10^{-2}$
	3	10.9	$3.0 \times 10^{-2}$
PBN-89-01D	1	0.8	$5.6 \times 10^{-2}$
	2	0.5	$5.1 \times 10^{-2}$
	3	2.1	$5.0 \times 10^{-2}$
	4	3.4	$4.9 \times 10^{-2}$
	5	4.3	$4.8 \times 10^{-2}$
PBN-89-02B	1	3.5	$1.6 \times 10^{-2}$
	2	6.9	$1.6 \times 10^{-2}$
	3	11.0	$1.3 \times 10^{-2}$
PBN-89-02C	1	3.2	$2.6 \times 10^{-2}$
	2	5.7	$2.5 \times 10^{-2}$
	3	12.1	$2.3 \times 10^{-2}$
PBN-89-03B	1	1.0	$2.5 \times 10^{-2}$
	2	3.3	$2.5 \times 10^{-2}$
	3	4.9	$2.4 \times 10^{-2}$
	4	6.5	$2.4 \times 10^{-2}$
	5	8.7	$2.4 \times 10^{-2}$

TABLE I-1  
FIELD HYDRAULIC CONDUCTIVITY TEST RESULTS

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL	TEST NO.	MAXIMUM WATER LEVEL DEPRESSION (feet)	HYDRAULIC CONDUCTIVITY/ Hvorslev (cm/sec)
PBN-89-03C	1	1.3	$4.4 \times 10^{-2}$
	2	2.4	$4.3 \times 10^{-2}$
	3	4.7	$4.2 \times 10^{-2}$
	4	6.9	$4.0 \times 10^{-2}$
	5	8.7	$4.0 \times 10^{-2}$
PBN-89-04C	1	2.8	$2.4 \times 10^{-2}$
	2	5.8	$2.2 \times 10^{-2}$
	3	3.0	$3.4 \times 10^{-2}$
PBN-89-10B	1	0.3	$1.8 \times 10^{-2}$
	2	1.2	$1.7 \times 10^{-2}$
	3	0.4	$2.1 \times 10^{-2}$
	4	1.5	$1.9 \times 10^{-2}$
	5	1.5	$8.5 \times 10^{-2}$
PBN-89-10C	1	1.4	$2.6 \times 10^{-2}$
	2	3.5	$2.6 \times 10^{-2}$
	3	5.7	$2.3 \times 10^{-2}$
	4	8.5	$2.4 \times 10^{-2}$
PB-89-10D	1	0.2	$1.9 \times 10^{-2}$
	2	0.2	$1.5 \times 10^{-2}$
	3	6.7	$1.6 \times 10^{-2}$
	4	10.7	$5.0 \times 10^{-2}$
PBN-91-06C	1	7.3	$1.6 \times 10^{-2}$
PBN-91-12C	1	2.0	$7.0 \times 10^{-3}$
	2	4.8	$8.0 \times 10^{-2}$
PBN-91-12D	1	3.4	$1.7 \times 10^{-2}$
	2	6.0	$4.8 \times 10^{-2}$
	3	10.3	$2.6 \times 10^{-2}$
LOM-89-01	1	0.9	$8.7 \times 10^{-2}$
	2	1.0	$5.5 \times 10^{-2}$
	3	2.2	$8.2 \times 10^{-2}$
LON-89-02B	1	0.7	$5.1 \times 10^{-2}$
	2	1.5	$5.4 \times 10^{-2}$
	3	2.4	$4.5 \times 10^{-2}$
	4	3.5	$4.0 \times 10^{-2}$
	5	5.0	$3.8 \times 10^{-2}$

TABLE I-1  
FIELD HYDRAULIC CONDUCTIVITY TEST RESULTS

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL	TEST NO.	MAXIMUM WATER LEVEL DEPRESSION (feet)	HYDRAULIC CONDUCTIVITY/ HVORSLEV (cm/sec)
LON-89-03B	1	0.2	1.2x10 <sup>-2</sup>
	2	0.6	1.3x10 <sup>-2</sup>
	3	1.3	1.1x10 <sup>-2</sup>
	4	1.2	1.8x10 <sup>-2</sup>
	5	2.0	1.4x10 <sup>-2</sup>
SPN-89-01C	1	2.6	4.1x10 <sup>-2</sup>
	2	5.3	3.9x10 <sup>-2</sup>
	3	8.4	3.8x10 <sup>-2</sup>
SPN-89-02B	1	3.1	1.5x10 <sup>-2</sup>
	2	5.8	1.4x10 <sup>-2</sup>
	3	9.3	1.2x10 <sup>-2</sup>
SPN-89-02C	1	3.0	3.4x10 <sup>-2</sup>
	2	5.8	3.2x10 <sup>-2</sup>
	3	9.3	3.0x10 <sup>-2</sup>
SPN-89-03B	1	2.7	4.2x10 <sup>-2</sup>
	2	3.3	3.8x10 <sup>-2</sup>
	3	8.4	3.6x10 <sup>-2</sup>
SPN-89-03C	1	2.8	5.2x10 <sup>-2</sup>
	2	5.9	4.9x10 <sup>-2</sup>
	3	9.5	4.6x10 <sup>-2</sup>
SPN-89-04B	1	1.5	1.9x10 <sup>-2</sup>
	2	4.5	1.9x10 <sup>-2</sup>
	3	8.5	1.8x10 <sup>-2</sup>
SPN-89-04C	1	3.2	2.6x10 <sup>-2</sup>
	2	6.2	2.5x10 <sup>-2</sup>
	3	10.5	2.4x10 <sup>-2</sup>
S1103	1	2.4	7.6x10 <sup>-3</sup>
	2	3.0	7.5x10 <sup>-3</sup>
	3	3.4	7.5x10 <sup>-3</sup>
S1106	1	1.6	1.6x10 <sup>-2</sup>
	2	3.9	1.5x10 <sup>-2</sup>
	3	6.3	1.5x10 <sup>-2</sup>
	4	9.8	7.4x10 <sup>-3</sup>
S1107	1	1.5	3.6x10 <sup>-2</sup>
	2	5.5	3.5x10 <sup>-2</sup>
	3	8.6	3.4x10 <sup>-2</sup>

TABLE I-1  
FIELD HYDRAULIC CONDUCTIVITY TEST RESULTS

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL	TEST NO.	MAXIMUM WATER LEVEL DEPRESSION (feet)	HYDRAULIC CONDUCTIVITY/ Hvorslev (cm/sec)
S1114	1	3.2	$2.0 \times 10^{-2}$
	2	7.5	$1.9 \times 10^{-2}$
DBM-82-01	1	0.1	$1.1 \times 10^{-1}$
	2	1.0	$5.7 \times 10^{-1}$
	3	1.9	$2.0 \times 10^{-1}$
	4	2.9	$6.6 \times 10^{-1}$
DBM-89-01	1	0.8	$2.2 \times 10^{-1}$
	2	1.2	$2.4 \times 10^{-1}$
	3	1.5	$2.9 \times 10^{-1}$
DBM-89-03	1	0.3	$1.2 \times 10^{-1}$
	2	0.5	$2.0 \times 10^{-1}$
	3	0.9	$1.3 \times 10^{-1}$
	4	0.8	$2.0 \times 10^{-1}$
DBM-89-05	1	1.3	$7.0 \times 10^{-2}$
	2	1.7	$6.4 \times 10^{-2}$
	3	3.4	$6.1 \times 10^{-2}$
	4	3.1	$6.2 \times 10^{-2}$
DNB-89-02A	1	0.8	$9.1 \times 10^{-2}$
	2	1.2	$8.1 \times 10^{-2}$
	3	1.4	$7.7 \times 10^{-2}$
DBN-89-02B	1	1.6	$1.2 \times 10^{-1}$
	2	2.0	$1.2 \times 10^{-1}$
	3	2.5	$1.4 \times 10^{-1}$
	4	0.5	$1.6 \times 10^{-1}$
DBN-89-04A	1	1.2	$4.0 \times 10^{-2}$
	2	1.6	$3.9 \times 10^{-2}$
	3	2.0	$3.3 \times 10^{-2}$
DBN-89-04B	1	0.6	$4.2 \times 10^{-2}$
	2	1.4	$5.0 \times 10^{-2}$
	3	2.2	$5.1 \times 10^{-2}$
ELM-89-01	1	1.5	$8.0 \times 10^{-3}$
	2	2.6	$8.3 \times 10^{-3}$
	3	3.6	$8.2 \times 10^{-3}$
ELM-89-05	1	1.4	$1.2 \times 10^{-1}$
	2	2.4	$1.0 \times 10^{-1}$
	3	1.8	$1.1 \times 10^{-1}$

TABLE I-1  
FIELD HYDRAULIC CONDUCTIVITY TEST RESULTS

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

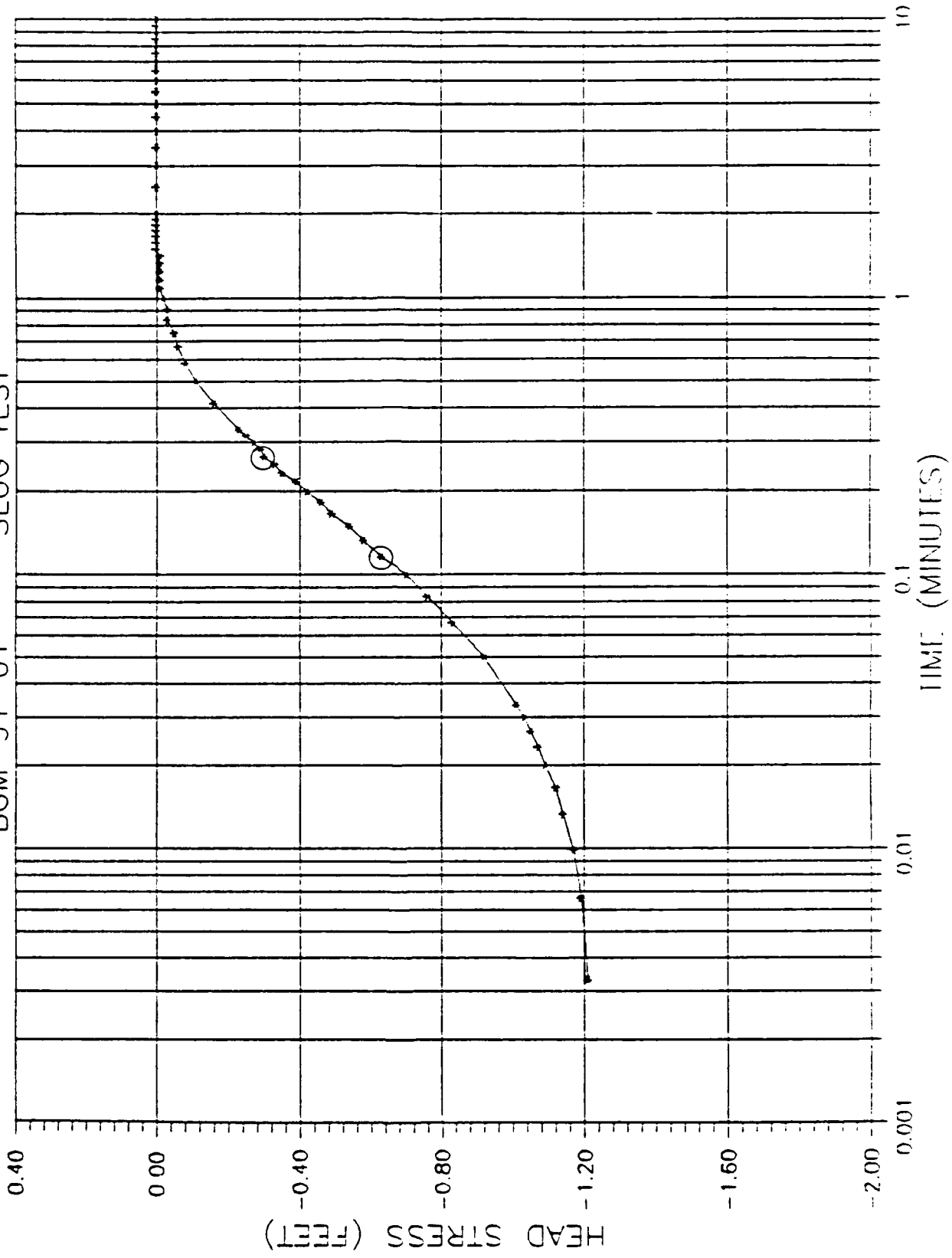
WELL	TEST NO.	MAXIMUM WATER LEVEL DEPRESSION (feet)	HYDRAULIC CONDUCTIVITY/ HVORSLEV (cm/sec)
ELM-89-07	1	0.9	$1.0 \times 10^{-1}$
	2	1.2	$1.0 \times 10^{-1}$
ELM-89-08	1	1.2	$4.4 \times 10^{-2}$
	2	2.0	$4.1 \times 10^{-2}$
ELM-89-09	1	1.5	$3.9 \times 10^{-2}$
	2	1.9	$2.8 \times 10^{-2}$
	3	2.3	$2.6 \times 10^{-2}$
ELM-91-10	1	1.5	$2.0 \times 10^{-3}$
	2	1.2	$2.0 \times 10^{-3}$
	3	1.0	$2.0 \times 10^{-3}$
ELN-82-03C	1	1.7	$9.0 \times 10^{-3}$
	2	5.1	$6.1 \times 10^{-3}$
	3	3.8	$6.7 \times 10^{-3}$
ELN-82-04A	1	0.8	$3.6 \times 10^{-4}$
	2	1.0	$4.3 \times 10^{-4}$
	3	1.1	$3.3 \times 10^{-4}$
ELN-89-04A	1	1.7	$3.7 \times 10^{-2}$
	2	2.4	$3.5 \times 10^{-2}$
	3	2.2	$3.6 \times 10^{-2}$
ELN-89-04B	1	0.5	$4.6 \times 10^{-2}$
	2	2.0	$2.8 \times 10^{-1}$
	3	1.0	$8.8 \times 10^{-2}$
	4	7.0	$1.1 \times 10^{-1}$
ELN-89-06B	1	2.6	$5.6 \times 10^{-2}$
	2	5.2	$5.2 \times 10^{-2}$
	3	8.0	$5.0 \times 10^{-2}$
ELN-91-07A	1	1.2	$5.0 \times 10^{-3}$
	2	1.7	$5.0 \times 10^{-3}$
	3	1.8	$5.0 \times 10^{-3}$
ELN-91-07B	1	5.6	$1.5 \times 10^{-2}$
	2	6.3	$1.5 \times 10^{-2}$
	3	6.4	$1.4 \times 10^{-2}$
S1153	1	0.8	$5.9 \times 10^{-2}$
	2	2.2	$5.1 \times 10^{-2}$
	3	1.2	$1.2 \times 10^{-2}$

TABLE I-1  
FIELD HYDRAULIC CONDUCTIVITY TEST RESULTS

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL	TEST NO.	MAXIMUM WATER LEVEL DEPRESSION (feet)	HYDRAULIC CONDUCTIVITY/ HVORSLEV (cm/sec)
RPM-89-01	1	0.5	$1.5 \times 10^{-1}$
	2	0.7	$1.9 \times 10^{-1}$
	3	1.3	$1.9 \times 10^{-1}$
RPM-89-02	1	0.6	$1.5 \times 10^{-1}$
	2	1.3	$1.2 \times 10^{-1}$
	3	1.7	$1.0 \times 10^{-1}$
OPM-89-03	1	0.6	$8.2 \times 10^{-2}$
	2	0.9	$1.1 \times 10^{-1}$
OAM-89-01	1	1.3	$3.4 \times 10^{-2}$
	2	1.2	$3.4 \times 10^{-2}$
	3	2.6	$3.0 \times 10^{-2}$
	4	3.1	$3.3 \times 10^{-3}$
FTM-89-01	1	2.3	$2.2 \times 10^{-2}$
	2	3.6	$2.2 \times 10^{-2}$
SWN-91-03B	1	2.0	$3.3 \times 10^{-2}$
	2	5.8	$1.9 \times 10^{-2}$
SWN-91-03C	1	5.6	$1.4 \times 10^{-2}$
	2	8.0	$2.2 \times 10^{-2}$
SWN-91-03D	1	2.8	$2.3 \times 10^{-1}$
	2	4.9	$1.0 \times 10^{-2}$
SWN-91-03E	1	2.9	$1.0 \times 10^{-3}$
	2	6.0	$1.0 \times 10^{-3}$
	3	7.8	$1.0 \times 10^{-3}$

BGM-91-01 SLUG TEST



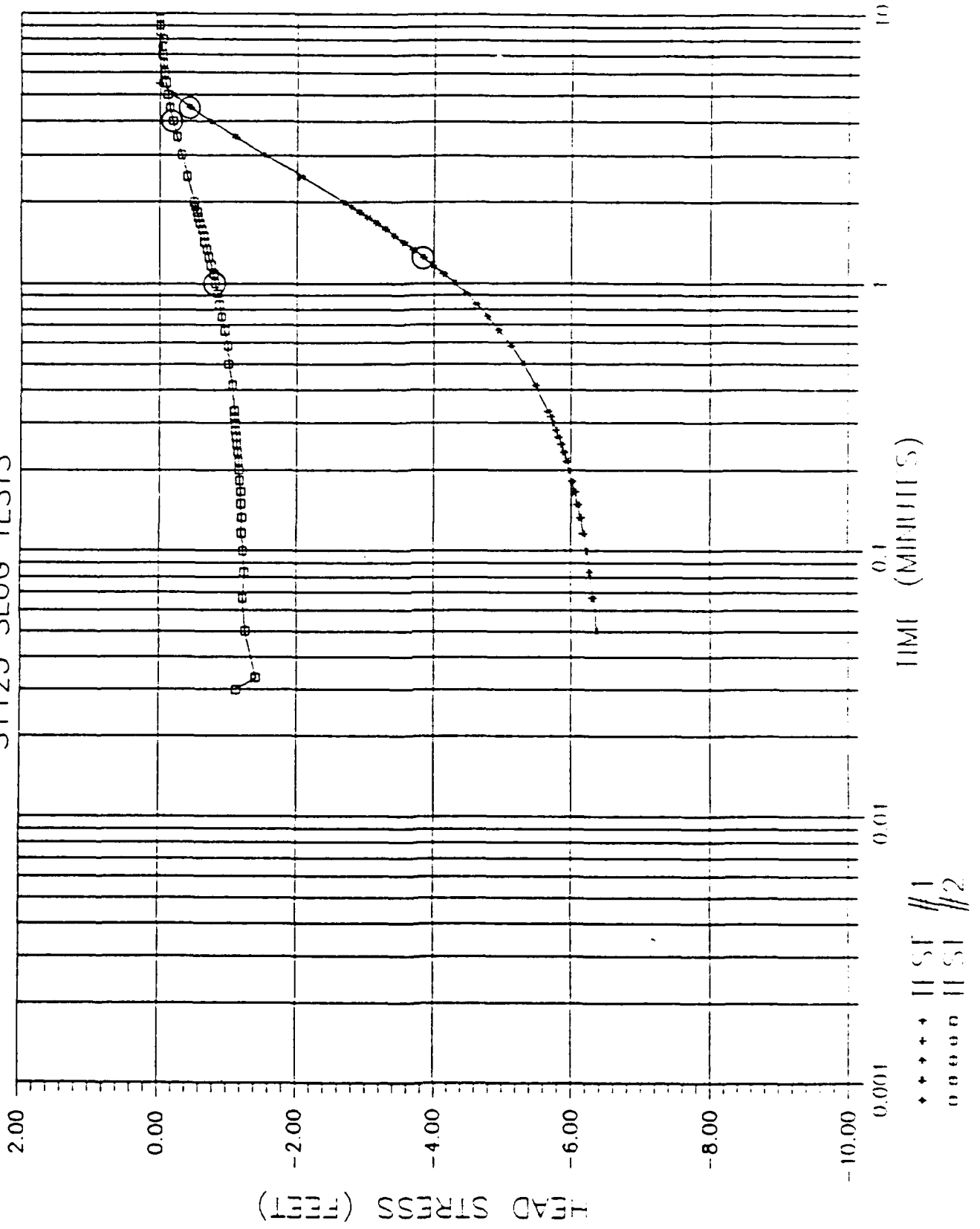
WELL BGM-91-01  
 WELL DIAMETER=0.3125FT. SCREEN LENGTH=15FT. BORING DIAMETER=0.75FT

TEST 1	
MINUTES	FEET
0.0033	-1.21
0.0066	-1.19
0.0099	-1.17
0.0133	-1.14
0.0166	-1.12
0.02	-1.09
0.0233	-1.07
0.0266	-1.05
0.03	-1.03
0.0333	-1.01
0.06	-0.92
0.0666	-0.83
0.0833	-0.78
0.1	-0.7
0.1166	-0.63
0.1333	-0.58
0.15	-0.54
0.1666	-0.49
0.1833	-0.46
0.2	-0.42
0.2166	-0.39
0.2333	-0.35
0.25	-0.33
0.2666	-0.3
0.2833	-0.29
0.3	-0.27
0.3166	-0.25
0.3333	-0.23
0.4167	-0.18
0.5	-0.11
0.6633	-0.08
0.6667	-0.06
0.75	-0.05
0.8333	-0.03
0.9167	-0.03
1	-0.02
1.0633	-0.01
1.1667	-0.01
1.25	-0.01
1.3333	-0.01
1.4166	-0.01
1.5	0
1.5633	0
1.6667	0
1.75	0
1.8333	0
1.9167	0
2	0
2.5	0
3	0
3.5	0
4	0
4.5	0
5	0
5.5	0
6	0
6.5	0
7	0
7.5	0
8	0
8.5	0
9	0
9.5	0
10	0

HYDRAULEIC  
 K = 0.001 CM/SEC  
 SLOTTED AND RICE  
 K = 0.006 CM/SEC



# S1123 SLUG TESTS

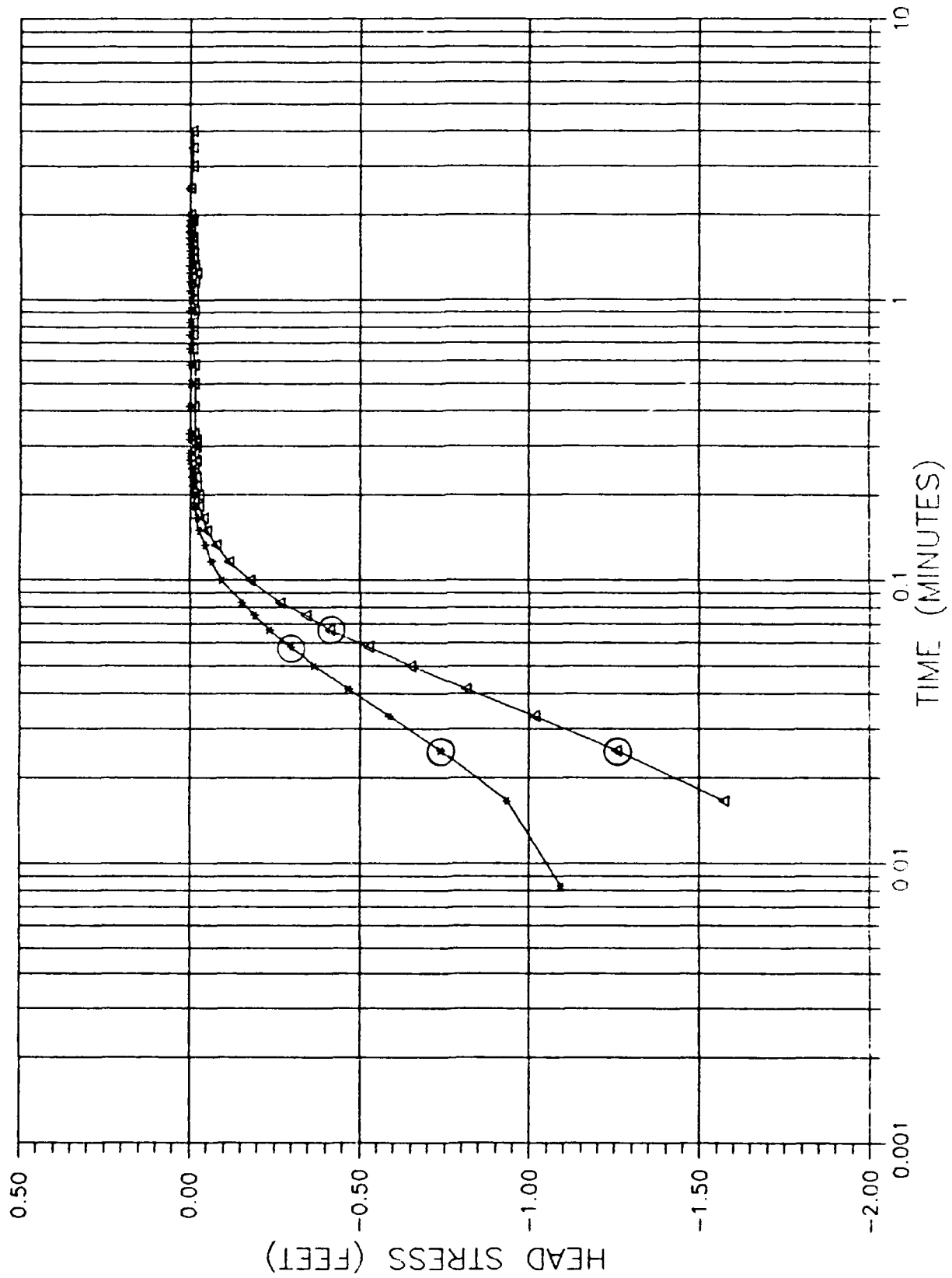


WELL S1123  
 WELL DIAMETER=0.3125FT. SCREEN LENGTH=25FT. BORING DIAMETER=0.75FT

TEST 1		TEST 2	
MINUTES	FEET	MINUTES	FEET
0.0033	9.567	0.0033	4.54
0.0066	9.548	0.0066	4.54
0.01	9.536	0.01	4.537
0.0133	5.849	0.0133	4.534
0.0166	-0.096	0.0166	4.192
0.02	-4.178	0.02	0.99
0.0233	-8.652	0.0233	-1.118
0.0266	-6.39	0.0266	-1.482
0.03	-6.456	0.03	-1.128
0.0333	-6.431	0.0333	-1.412
0.05	-6.355	0.05	-1.291
0.0666	-4.311	0.0666	-1.232
0.0833	-6.26	0.0833	-1.251
0.1	-6.222	0.1	-1.232
0.1166	-6.178	0.1166	-1.21
0.1333	-6.133	0.1333	-1.207
0.15	-6.095	0.15	-1.194
0.1666	-6.051	0.1666	-1.194
0.1833	-6.013	0.1833	-1.181
0.2	-5.972	0.2	-1.169
0.2166	-5.937	0.2166	-1.162
0.2333	-5.893	0.2333	-1.15
0.25	-5.858	0.25	-1.137
0.2666	-5.814	0.2666	-1.134
0.2833	-5.785	0.2833	-1.118
0.3	-5.741	0.3	-1.118
0.3166	-6.709	0.3166	-1.108
0.3333	-5.668	0.3333	-1.106
0.4166	-6.481	0.4166	-1.068
0.5	-6.298	0.5	-1.014
0.5833	-5.124	0.5833	-1.004
0.6666	-4.94	0.6666	-0.954
0.75	-4.779	0.75	-0.912
0.8333	-4.814	0.8333	-0.878
0.9166	-4.486	0.9166	-0.852
1	-4.296	1	-0.818
1.0833	-4.136	1.0833	-0.796
1.1666	-3.981	1.1666	-0.757
1.25	-3.845	1.25	-0.726
1.3333	-3.693	1.3333	-0.7
1.4166	-3.567	1.4166	-0.666
1.5	-3.421	1.5	-0.656
1.5833	-3.295	1.5833	-0.631
1.6666	-3.162	1.6666	-0.596
1.75	-3.041	1.75	-0.574
1.8333	-2.921	1.8333	-0.555
1.9166	-2.807	1.9166	-0.526
2	-2.684	2	-0.504
2.5	-2.064	2.5	-0.403
3	-1.541	3	-0.321
3.5	-1.12	3.5	-0.257
4	-0.75	4	-0.197
4.5	-0.453	4.5	-0.153
5	-0.209	5	-0.118
5.5	0	5.5	-0.09
		6	-0.067
		6.5	-0.056
		7	-0.039
		7.5	-0.033
		8	-0.048
		8.5	-0.004
		9	-0.004
		9.5	-0.001

HYDRAULEV  
 K = 0.0001 CM/SEC      K = 0.0001 CM/SEC  
 BOUWER AND RICE  
 K = UNABLE TO GENERATE K      K = 0.0001 CM/SEC

# PBM-89-11



●●●●● TEST NO. 1  
▲▲▲▲▲ TEST NO. 2

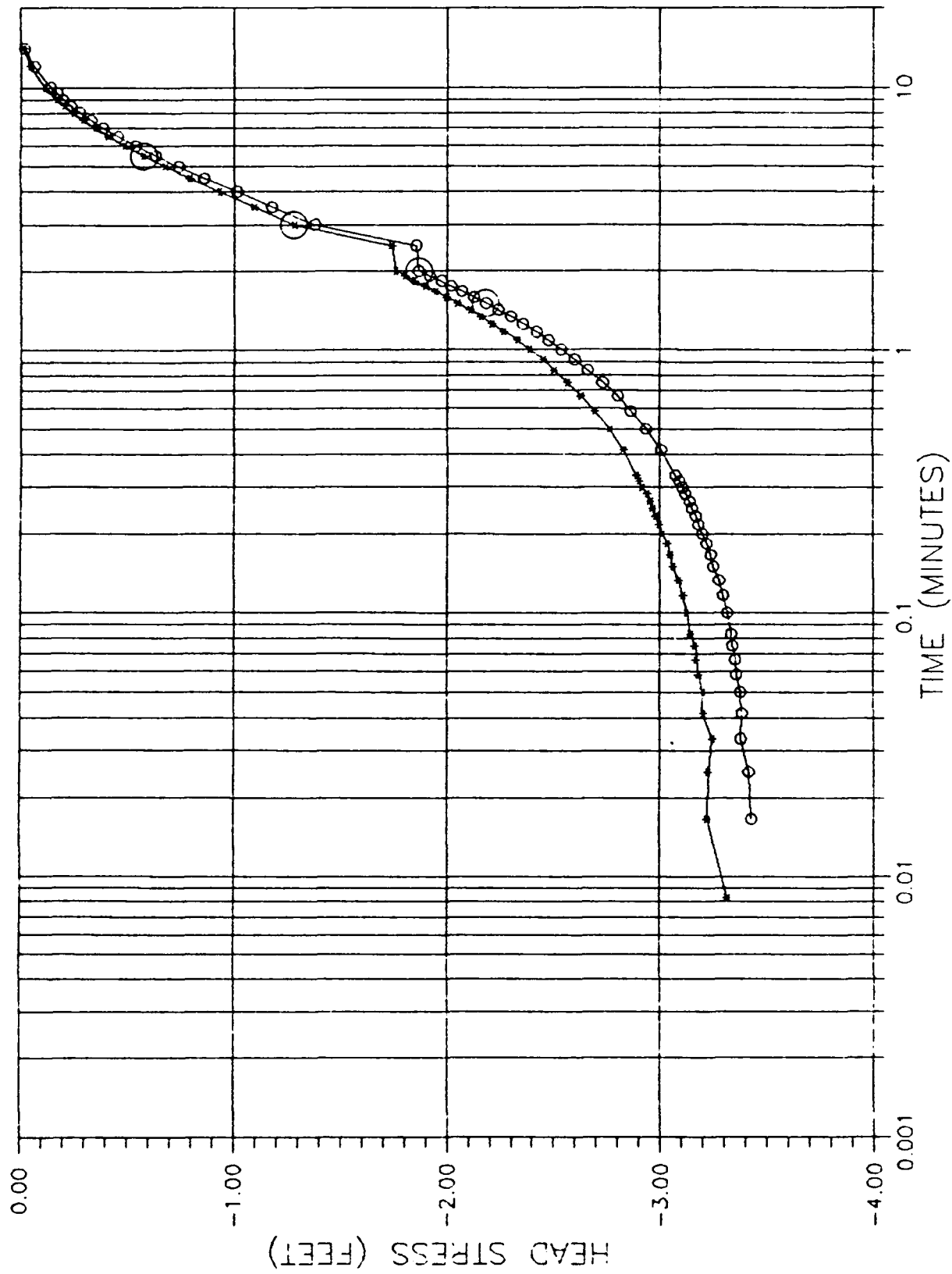
WELL PEM-69-11  
 WELL DIAMETER=0.3125FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.75FT

TEST 1		TEST 2	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-1.092	0.017	-1.571
0.017	-0.934	0.025	-1.256
0.025	-0.738	0.033	-1.016
0.033	-0.587	0.042	-0.814
0.042	-0.467	0.050	-0.650
0.050	-0.366	0.058	-0.524
0.058	-0.297	0.067	-0.410
0.067	-0.234	0.075	-0.341
0.075	-0.190	0.083	-0.265
0.083	-0.152	0.100	-0.177
0.100	-0.095	0.117	-0.114
0.117	-0.064	0.133	-0.076
0.133	-0.045	0.150	-0.051
0.150	-0.026	0.167	-0.038
0.167	-0.019	0.183	-0.026
0.183	-0.013	0.217	-0.019
0.200	-0.007	0.250	-0.013
0.267	0.000	0.267	-0.019
0.283	0.000	0.283	-0.013
0.300	-0.007	0.300	-0.019
0.317	0.000	0.333	-0.013
0.333	0.000	0.667	-0.007
0.417	0.000	0.917	-0.013
0.500	0.000	1.000	-0.007
0.583	0.000	1.167	-0.013
0.667	0.000	1.250	-0.019
0.750	0.000	1.333	-0.013
0.833	0.000	1.417	-0.007
0.917	0.000	1.750	0.000
1.000	0.000	1.833	0.000
1.083	0.000	1.917	-0.007
1.167	0.000	2.000	0.000
1.250	0.000	2.500	0.000
1.333	0.000	3.000	-0.007
1.417	0.000		
1.500	0.000		
1.583	0.000		
1.667	0.000		
1.750	0.000		
1.833	0.000		
1.917	0.000		
2.000	0.000		
2.500	0.000		

K=4.1E-2 CM/SEC

K=4.1E-2 CM/SEC

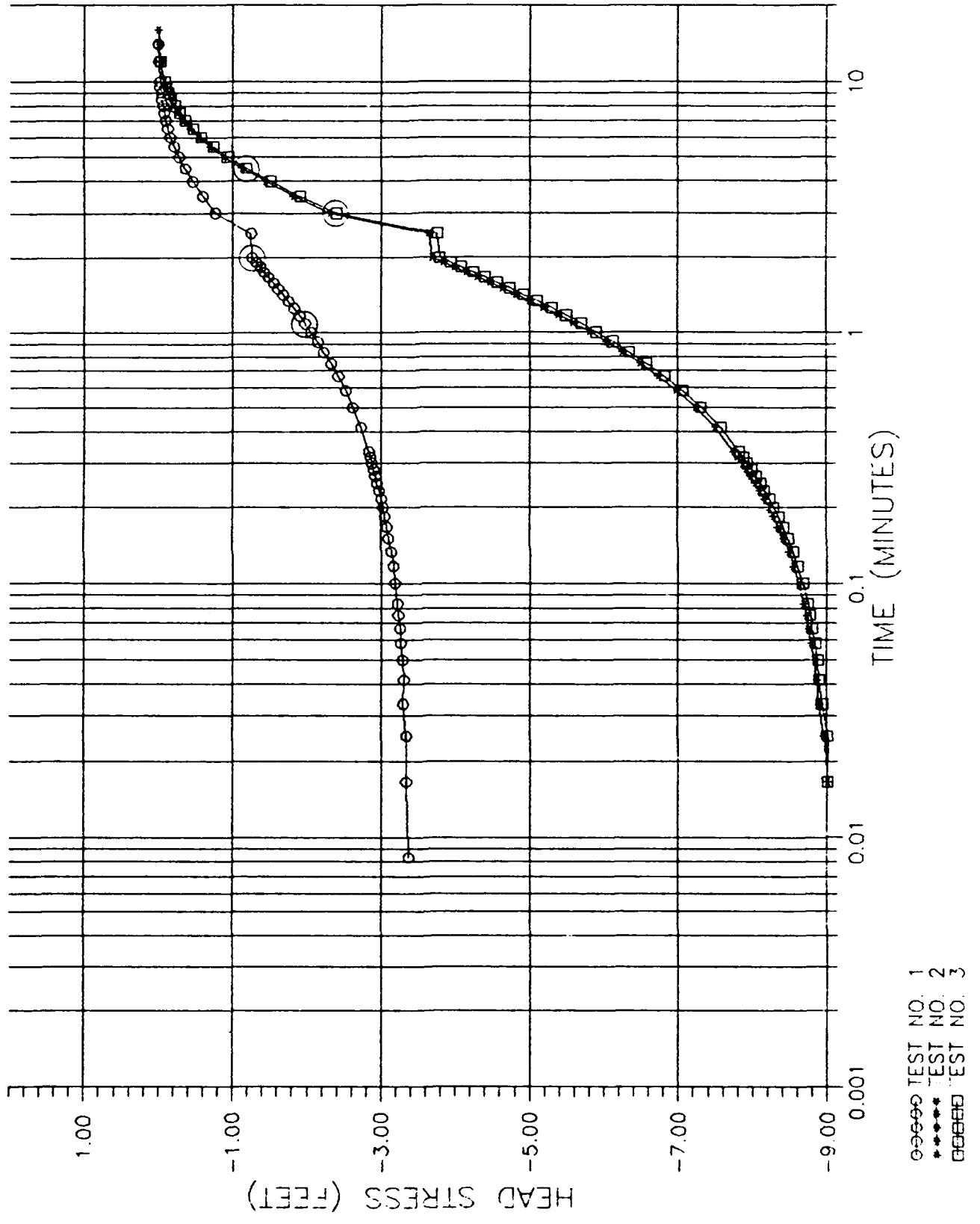
PBN-82-03B



WELL PEN-81-008

WELL DIAMETER: 3 INCHES		SCREEN LENGTH: 20 FT.		BOSSING DIAMETER: 4 INCHES			
TEST 1		TEST 1 CONT.		TEST 2			
TIME	HEAD	TIME	HEAD	TIME	HEAD		
MIN.	FEET	MIN.	FEET	MIN.	FEET		
0.008	-3.314	1.080	-2.330	0.017	-3.422		
0.017	-3.219	1.167	-2.269	0.026	-3.416		
0.025	-3.225	1.250	-2.211	0.033	-3.377		
0.033	-3.244	1.333	-2.161	0.040	-3.384		
0.040	-3.200	1.417	-2.110	0.050	-3.377		
0.050	-3.181	1.500	-2.060	0.058	-3.353		
0.067	-3.166	1.583	-2.000	0.067	-3.352		
0.075	-3.160	1.667	-1.951	0.075	-3.339		
0.083	-3.143	1.750	-1.901	0.083	-3.333		
0.100	-3.124	1.833	-1.850	0.100	-3.314		
0.117	-3.135	1.917	-1.806	0.117	-3.295		
0.133	-3.086	2.000	-1.761	0.133	-3.276		
0.150	-3.061	2.500	-1.740	0.150	-3.251		
0.167	-3.049	3.000	-1.722	0.167	-3.233		
0.183	-3.035	3.500	-1.696	0.183	-3.219		
0.200	-3.010	4.000	-1.621	0.200	-3.200		
0.217	-2.997	4.500	-1.792	0.217	-3.181		
0.233	-2.978	5.000	-1.678	0.233	-3.160		
0.250	-2.966	5.500	-1.576	0.250	-3.149		
0.267	-2.953	6.000	-1.487	0.267	-3.137		
0.283	-2.940	6.500	-1.411	0.283	-3.119		
0.300	-2.915	7.000	-1.342	0.300	-3.105		
0.317	-2.902	7.500	-1.271	0.317	-3.092		
0.333	-2.883	8.000	-1.247	0.333	-3.073		
0.417	-2.826	8.500	-1.200	0.417	-3.004		
0.500	-2.763	9.000	-1.171	0.500	-2.934		
0.583	-2.699	9.500	-1.150	0.583	-2.864		
0.667	-2.630	10.000	-1.114	0.667	-2.801		
0.750	-2.566	12.000	-1.044	0.750	-2.731		
0.833	-2.503	14.000	-1.012	0.833	-2.661		
0.917	-2.452			0.917	-2.599		
1.000	-2.389	K=1.0E-3 CM/SEC		1.000	-2.535	K=1.0E-3 CM/SEC	

# PBN-82-03C



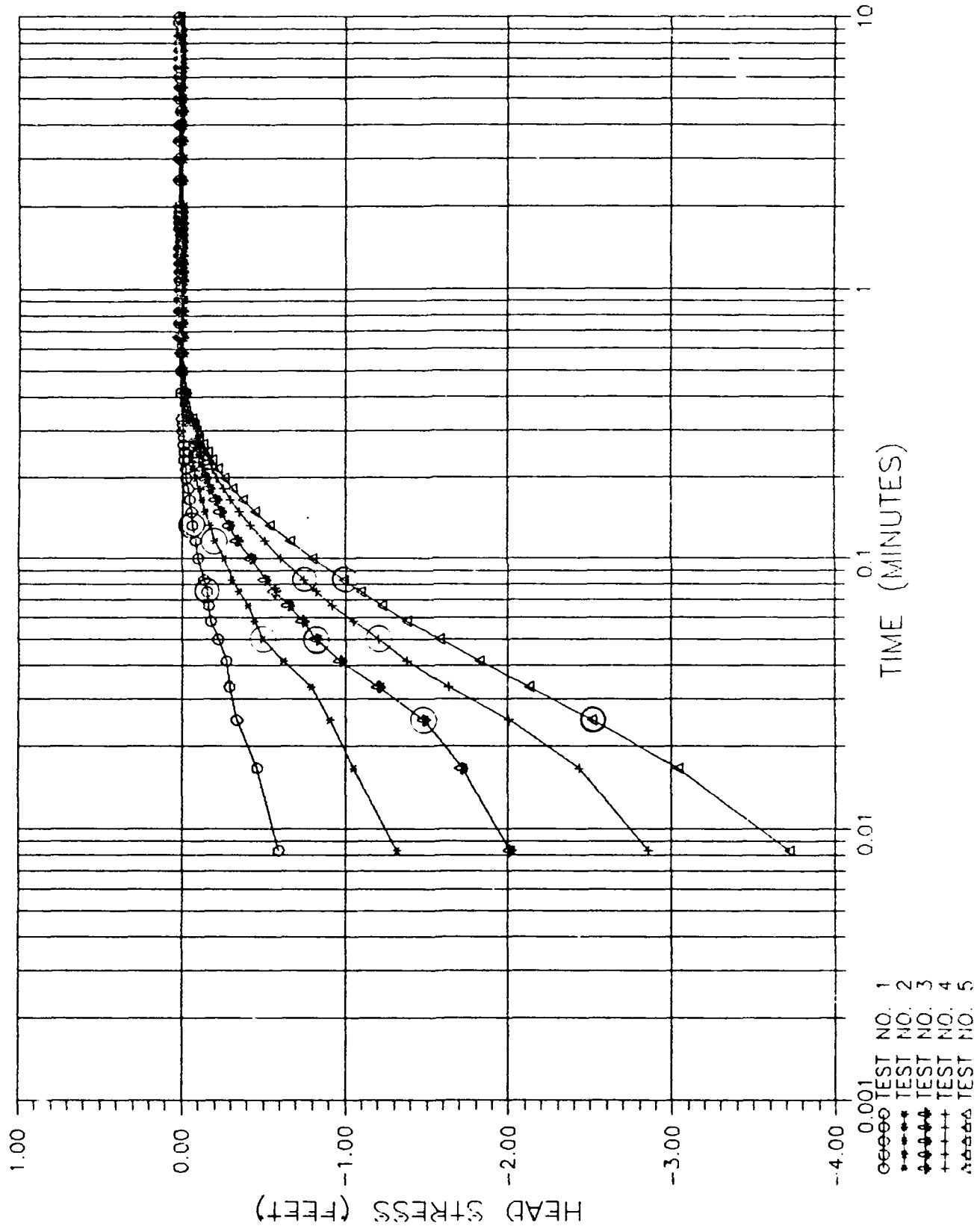
○○○○○○ TEST NO. 1  
 ★★★★★★ TEST NO. 2  
 □□□□□□ TEST NO. 3

WELL DIAMETER: 10.00 FT.      DIAPHRAGM LEAKAGE: 100%      SURFACE DIAMETER: 10.00 FT.  
 TEST 1      TEST 2      TEST 3

TIME MIN	HEAD FEET	TIME MIN	HEAD FEET	TIME MIN	HEAD FEET
0.000	-8.071	0.000	-8.071	0.000	-8.033
0.017	-8.039	0.033	-8.031	0.033	-8.036
0.033	-8.301	0.050	-8.034	0.040	-8.097
0.050	-8.099	0.058	-8.090	0.058	-8.047
0.058	-8.080	0.087	-8.050	0.087	-8.090
0.075	-8.082	0.080	-8.039	0.080	-8.075
0.083	-8.019	0.100	-8.019	0.100	-8.076
0.100	-8.137	0.117	-8.049	0.117	-8.006
0.117	-8.160	0.133	-8.435	0.133	-8.040
0.133	-8.137	0.150	-8.416	0.150	-8.473
0.150	-8.105	0.167	-8.352	0.167	-8.416
0.167	-8.086	0.183	-8.099	0.183	-8.359
0.183	-8.054	0.200	-8.019	0.200	-8.059
0.200	-8.029	0.217	-8.120	0.217	-8.020
0.217	-8.004	0.233	-8.099	0.233	-8.169
0.233	-8.078	0.250	-8.042	0.250	-8.112
0.250	-8.046	0.267	-7.985	0.267	-8.055
0.267	-8.027	0.283	-7.928	0.283	-7.998
0.283	-8.001	0.300	-7.871	0.300	-7.940
0.300	-8.077	0.317	-7.807	0.317	-7.883
0.317	-8.058	0.333	-7.750	0.333	-7.826
0.333	-8.039	0.417	-7.503	0.417	-7.579
0.417	-8.031	0.500	-7.231	0.500	-7.313
0.500	-8.017	0.583	-6.977	0.583	-7.060
0.583	-8.022	0.667	-6.724	0.667	-6.810
0.667	-8.420	0.750	-6.489	0.750	-6.572
0.750	-8.025	0.833	-6.255	0.833	-6.343
0.833	-8.030	0.917	-6.033	0.917	-6.122
0.917	-8.148	1.000	-5.811	1.000	-5.900
1.000	-8.009	1.083	-5.589	1.083	-5.697
1.083	-8.077	1.167	-5.386	1.167	-5.494
1.167	-8.001	1.250	-5.190	1.250	-5.298
1.250	-8.001	1.333	-5.000	1.333	-5.108
1.333	-8.175	1.417	-4.816	1.417	-4.917
1.417	-8.095	1.500	-4.639	1.500	-4.740
1.500	-8.009	1.583	-4.461	1.583	-4.569
1.583	-8.000	1.667	-4.296	1.667	-4.404
1.667	-8.148	1.750	-4.130	1.750	-4.246
1.750	-8.126	1.833	-3.986	1.833	-4.087
1.833	-8.075	1.917	-3.834	1.917	-3.941
1.917	-8.019	2.000	-3.689	2.000	-3.796
2.000	-8.051	2.500	-3.644	2.500	-3.758
2.500	-8.246	3.000	-2.306	3.000	-2.401
3.000	-8.076	3.500	-1.819	3.500	-1.937
3.500	-8.095	4.000	-1.439	4.000	-1.500
4.000	-8.458	4.500	-1.123	4.500	-1.185
4.500	-8.081	5.000	-0.887	5.000	-0.907
5.000	-8.078	5.500	-0.697	5.500	-0.741
5.500	-8.015	6.000	-0.581	6.000	-0.533
6.000	-8.158	6.500	-0.430	6.500	-0.468
6.500	-8.126	7.000	-0.335	7.000	-0.367
7.000	-8.101	7.500	-0.259	7.500	-0.291
7.500	-8.078	8.000	-0.200	8.000	-0.201
8.000	-8.060	8.500	-0.150	8.500	-0.171
8.500	-8.000	9.000	-0.090	9.000	-0.100
9.000	-8.010	10.000	-0.000	10.000	-0.000
10.000	-8.000	10.000	-0.000	10.000	-0.000



# PBN-89-01B

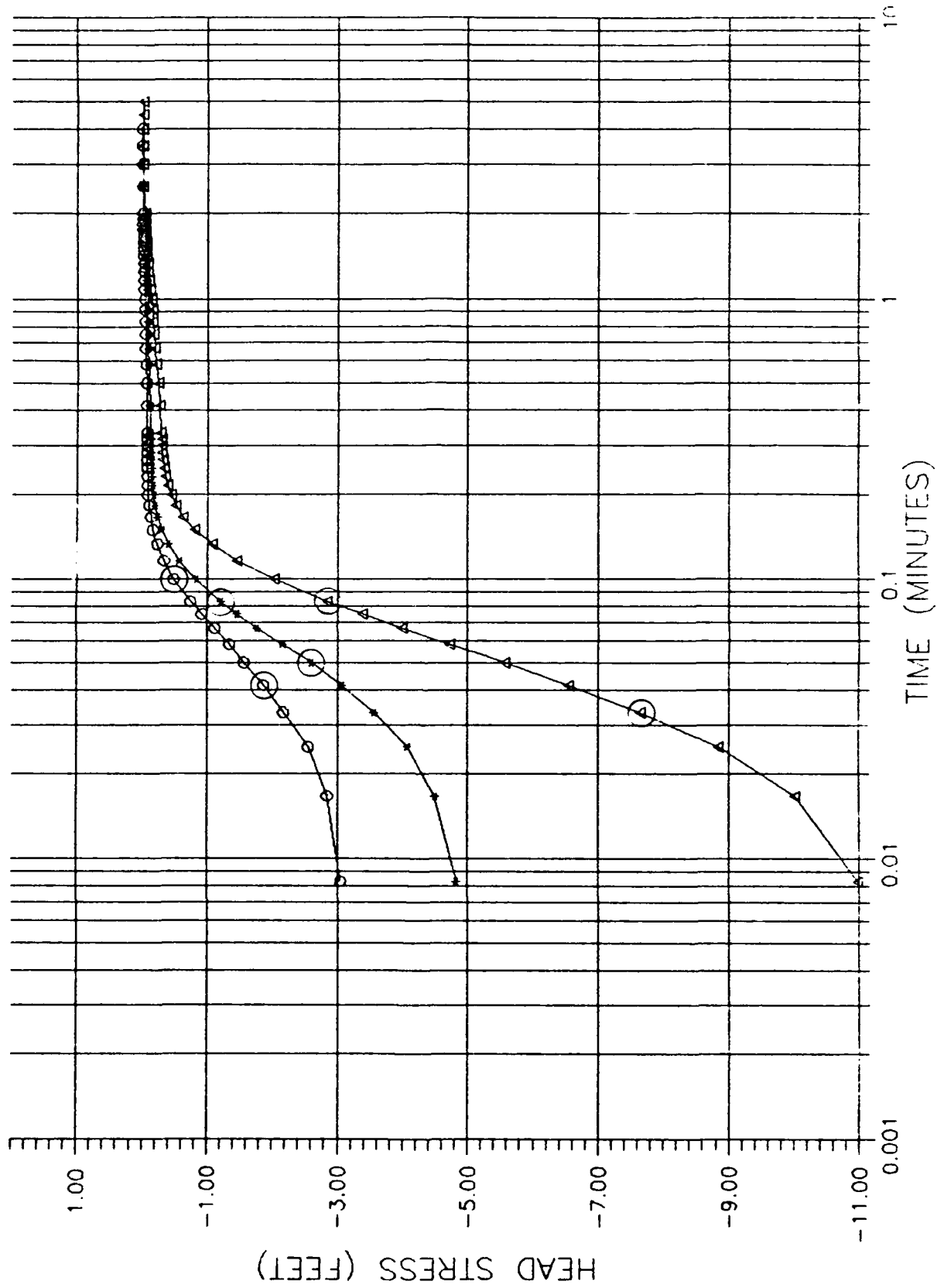


WELL PBN-99-01B

WELL DIAMETER=0.3125 FT. SCREEN LENGTH=10.5 FT. BORING DIAMETER=0.75 FT

TEST 1		TEST 2		TEST 3		TEST 4		TEST 5	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-0.600	0.008	-1.318	0.008	-2.009	0.008	-2.858	0.008	-3.723
0.017	-0.462	0.017	-1.052	0.017	-1.717	0.017	-2.433	0.017	-3.042
0.025	-0.335	0.025	-0.906	0.025	-1.452	0.025	-2.062	0.025	-2.509
0.033	-0.291	0.033	-0.792	0.033	-1.204	0.033	-1.635	0.033	-2.129
0.042	-0.272	0.042	-0.621	0.042	-0.969	0.042	-1.391	0.042	-1.625
0.050	-0.221	0.050	-0.494	0.050	-0.823	0.050	-1.204	0.050	-1.579
0.058	-0.177	0.058	-0.443	0.058	-0.741	0.058	-1.052	0.058	-1.375
0.067	-0.164	0.067	-0.405	0.067	-0.652	0.067	-0.918	0.067	-1.223
0.075	-0.152	0.075	-0.348	0.075	-0.564	0.075	-0.823	0.075	-1.096
0.083	-0.133	0.083	-0.304	0.083	-0.507	0.083	-0.747	0.083	-0.938
0.100	-0.101	0.100	-0.259	0.100	-0.424	0.100	-0.638	0.100	-0.798
0.117	-0.082	0.117	-0.202	0.117	-0.335	0.117	-0.507	0.117	-0.652
0.133	-0.063	0.133	-0.171	0.133	-0.285	0.133	-0.419	0.133	-0.538
0.150	-0.057	0.150	-0.139	0.150	-0.234	0.150	-0.348	0.150	-0.449
0.167	-0.044	0.167	-0.120	0.167	-0.202	0.167	-0.297	0.167	-0.373
0.183	-0.038	0.183	-0.101	0.183	-0.164	0.183	-0.253	0.183	-0.310
0.200	-0.025	0.200	-0.082	0.200	-0.139	0.200	-0.209	0.200	-0.259
0.217	-0.019	0.217	-0.059	0.217	-0.120	0.217	-0.183	0.217	-0.215
0.233	-0.012	0.233	-0.057	0.233	-0.101	0.233	-0.158	0.233	-0.163
0.267	-0.006	0.250	-0.050	0.250	-0.088	0.250	-0.133	0.250	-0.132
0.300	0.000	0.267	-0.044	0.267	-0.076	0.267	-0.114	0.267	-0.126
0.333	0.006	0.300	-0.031	0.283	-0.057	0.283	-0.101	0.283	-0.101
0.417	0.012	0.317	-0.025	0.317	-0.044	0.300	-0.082	0.300	-0.082
0.667	0.019	0.333	-0.019	0.333	-0.038	0.317	-0.059	0.317	-0.069
1.500	0.012	0.417	-0.006	0.417	-0.019	0.333	-0.063	0.333	-0.057
1.667	0.019	0.500	0.006	0.500	0.000	0.417	-0.031	0.417	-0.012
4.500	0.012	0.583	0.000	0.583	0.006	0.500	-0.012	0.500	0.012
5.000	0.019	0.667	0.012	1.000	0.012	0.583	0.000	0.583	0.025
5.500	0.012	0.750	0.000	1.083	0.006	0.750	0.006	0.667	0.038
6.000	0.019	0.833	0.012	1.833	0.012	0.833	0.000	0.750	0.019
6.500	0.012	0.917	0.006	1.917	0.006	0.917	0.006	1.750	0.012
9.500	0.019	1.000	0.000	5.500	0.012	1.083	0.000	1.833	0.019
K=2.6E-2 CM/SEC		1.083	0.006	6.500	0.006	1.167	0.006	2.500	0.012
		1.167	0.012	7.000	0.012	1.333	0.000	3.000	0.019
		1.250	0.019	K=4.0E-2 CM/SEC		1.417	0.006	3.500	0.012
		1.333	0.012			1.583	0.000	5.500	0.019
		1.583	0.000			1.667	0.006	6.000	0.012
		1.667	0.012			1.750	-0.006	6.500	0.019
		1.750	0.006			1.917	0.000	7.000	0.012
		3.000	0.012			4.000	-0.006	K=2.7E-2 CM/SEC	
		3.500	0.000			K=2.4E-2 CM/SEC			
		4.000	0.012						
		4.500	0.000						
		5.500	0.012						
		6.000	0.006						
		7.000	0.012						
		7.500	0.006						
		8.000	0.012						
		9.500	0.006						
		K=2.3E-2 CM/SEC							

# PBN-890-1C



oooo TEST NO. 1  
\*\*\*\*\* TEST NO. 2  
ΔΔΔΔΔ TEST NO. 3

WELL BBN-93-110  
 WELL DIAMETER=2.000FT, SCREEN LENGTH=11FT, BORING DIAMETER=0.75FT

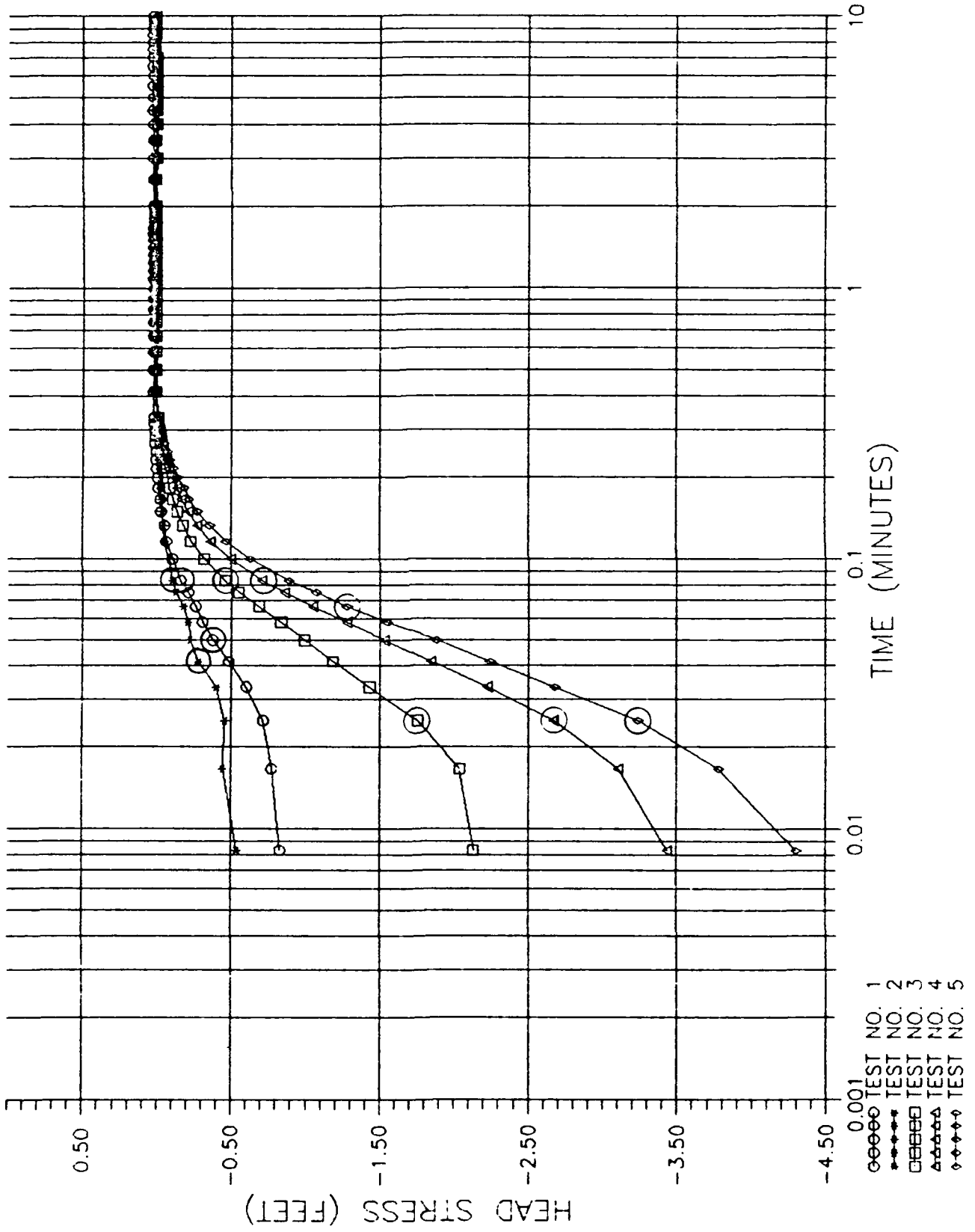
TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.008	-3.046	0.008	-4.824	0.008	-10.980
0.017	-2.844	0.017	-4.497	0.017	-10.022
0.025	-2.554	0.025	-4.074	0.025	-8.842
0.033	-2.169	0.033	-3.563	0.033	-7.650
0.042	-1.860	0.042	-3.071	0.042	-6.553
0.050	-1.564	0.050	-2.604	0.050	-5.575
0.058	-1.343	0.058	-2.157	0.058	-4.730
0.067	-1.122	0.067	-1.772	0.067	-4.005
0.075	-0.927	0.075	-1.463	0.075	-3.380
0.083	-0.744	0.083	-1.204	0.083	-2.851
0.100	-0.485	0.100	-0.826	0.100	-2.031
0.117	-0.334	0.117	-0.567	0.117	-1.457
0.133	-0.227	0.133	-0.397	0.133	-1.066
0.150	-0.157	0.150	-0.296	0.150	-0.801
0.167	-0.126	0.167	-0.233	0.167	-0.624
0.183	-0.100	0.183	-0.189	0.183	-0.511
0.200	-0.081	0.200	-0.170	0.200	-0.435
0.233	-0.075	0.217	-0.151	0.217	-0.384
0.250	-0.069	0.233	-0.138	0.233	-0.353
0.417	-0.063	0.267	-0.132	0.250	-0.328
0.500	-0.056	0.283	-0.126	0.267	-0.315
0.583	-0.050	0.333	-0.119	0.283	-0.302
0.667	-0.044	0.417	-0.113	0.300	-0.296
0.833	-0.037	0.500	-0.107	0.317	-0.290
0.917	-0.031	0.583	-0.094	0.333	-0.283
1.083	-0.025	0.667	-0.088	0.417	-0.258
1.250	-0.018	0.750	-0.081	0.500	-0.239
1.417	-0.012	0.833	-0.069	0.583	-0.214
1.750	-0.006	0.917	-0.063	0.667	-0.195
2.500	0.000	1.000	-0.056	0.750	-0.176
3.500	0.006	1.083	-0.050	0.833	-0.157
		1.167	-0.044	0.917	-0.145
		1.250	-0.037	1.000	-0.126
		1.417	-0.031	1.083	-0.113
		1.583	-0.025	1.167	-0.101
		1.750	-0.018	1.250	-0.088
		2.000	-0.012	1.333	-0.075
		2.500	-0.006	1.417	-0.069
		3.000	0.000	1.500	-0.063
				1.583	-0.056
				1.667	-0.050
				1.750	-0.044
				1.833	-0.038
				1.917	-0.031
				2.000	-0.025
				2.500	-0.006
				3.000	-0.006
				3.500	-0.006
				4.000	-0.006
				4.500	0.000
				5.000	0.000

K=3.0E-2 CM/SEC

K=3.1E-2 CM/SEC

K=3.0E-2 CM/SEC

# PBN-89-01D



WELL PEN-88-010

WELL DIAMETER=6.2100FT. COBBLE LENGTH=8FT BOPING DIAMETER=0 TEST

TEST 1		TEST 2		TEST 3		TEST 4		TEST 5	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-0.930	0.008	-0.540	0.008	-2.135	0.008	-3.434	0.008	-4.303
0.017	-0.773	0.017	-0.443	0.017	-2.040	0.017	-2.135	0.017	-3.783
0.025	-0.716	0.025	-0.456	0.025	-1.755	0.025	-2.656	0.025	-3.238
0.033	-0.602	0.033	-0.399	0.033	-1.432	0.033	-2.224	0.033	-2.680
0.042	-0.491	0.042	-0.273	0.042	-1.195	0.042	-1.844	0.042	-2.243
0.050	-0.373	0.050	-0.221	0.050	-0.934	0.050	-1.533	0.050	-1.892
0.058	-0.304	0.058	-0.209	0.058	-0.836	0.058	-1.289	0.058	-1.552
0.067	-0.259	0.067	-0.177	0.067	-0.694	0.067	-1.052	0.067	-1.280
0.075	-0.209	0.075	-0.126	0.075	-0.551	0.075	-0.851	0.075	-1.071
0.083	-0.153	0.083	-0.101	0.083	-0.456	0.083	-0.709	0.083	-0.887
0.100	-0.107	0.100	-0.082	0.100	-0.323	0.100	-0.500	0.100	-0.603
0.117	-0.063	0.117	-0.050	0.117	-0.228	0.117	-0.361	0.117	-0.468
0.133	-0.050	0.133	-0.044	0.133	-0.177	0.133	-0.272	0.133	-0.354
0.150	-0.025	0.150	-0.031	0.150	-0.133	0.150	-0.209	0.150	-0.272
0.167	-0.019	0.167	-0.025	0.167	-0.107	0.167	-0.164	0.167	-0.215
0.183	-0.006	0.183	-0.019	0.183	-0.092	0.183	-0.133	0.183	-0.183
0.200	0.000	0.200	-0.012	0.200	-0.069	0.200	-0.101	0.200	-0.133
0.217	0.006	0.233	-0.006	0.217	-0.050	0.217	-0.082	0.217	-0.107
0.233	0.012	0.233	0.000	0.233	-0.044	0.233	-0.063	0.233	-0.082
0.267	0.019	0.417	0.006	0.250	-0.021	0.250	-0.044	0.250	-0.063
0.317	0.025	0.667	0.000	0.267	-0.025	0.267	-0.031	0.267	-0.044
0.417	0.031	0.750	0.006	0.283	-0.019	0.283	-0.025	0.283	-0.031
1.750	0.025	1.167	0.000	0.300	-0.012	0.300	-0.012	0.300	-0.025
2.000	0.031	1.250	0.006	0.317	-0.036	0.317	-0.006	0.317	-0.006
2.500	0.025	1.667	0.000	0.417	0.006	0.333	0.000	0.333	0.000
4.500	0.031	1.750	0.006	0.583	0.012	0.417	0.012	0.417	0.019
5.000	0.025	1.833	0.000	1.167	0.006	0.500	0.019	0.500	0.025
5.500	0.031	1.917	0.006	3.000	0.000	0.583	0.025	0.583	0.031
6.000	0.025	3.500	0.000	3.500	0.006	1.000	0.019	1.000	0.025
6.500	0.031			4.000	0.000	1.417	0.012	1.417	0.031
9.500	0.025					3.500	0.006	1.500	0.019
						4.500	0.012	3.000	0.012
						5.000	0.006	3.500	0.006
						6.000	0.012	4.500	0.019
						8.500	0.006	5.000	0.012

K=5.6E-2 CM/SEC

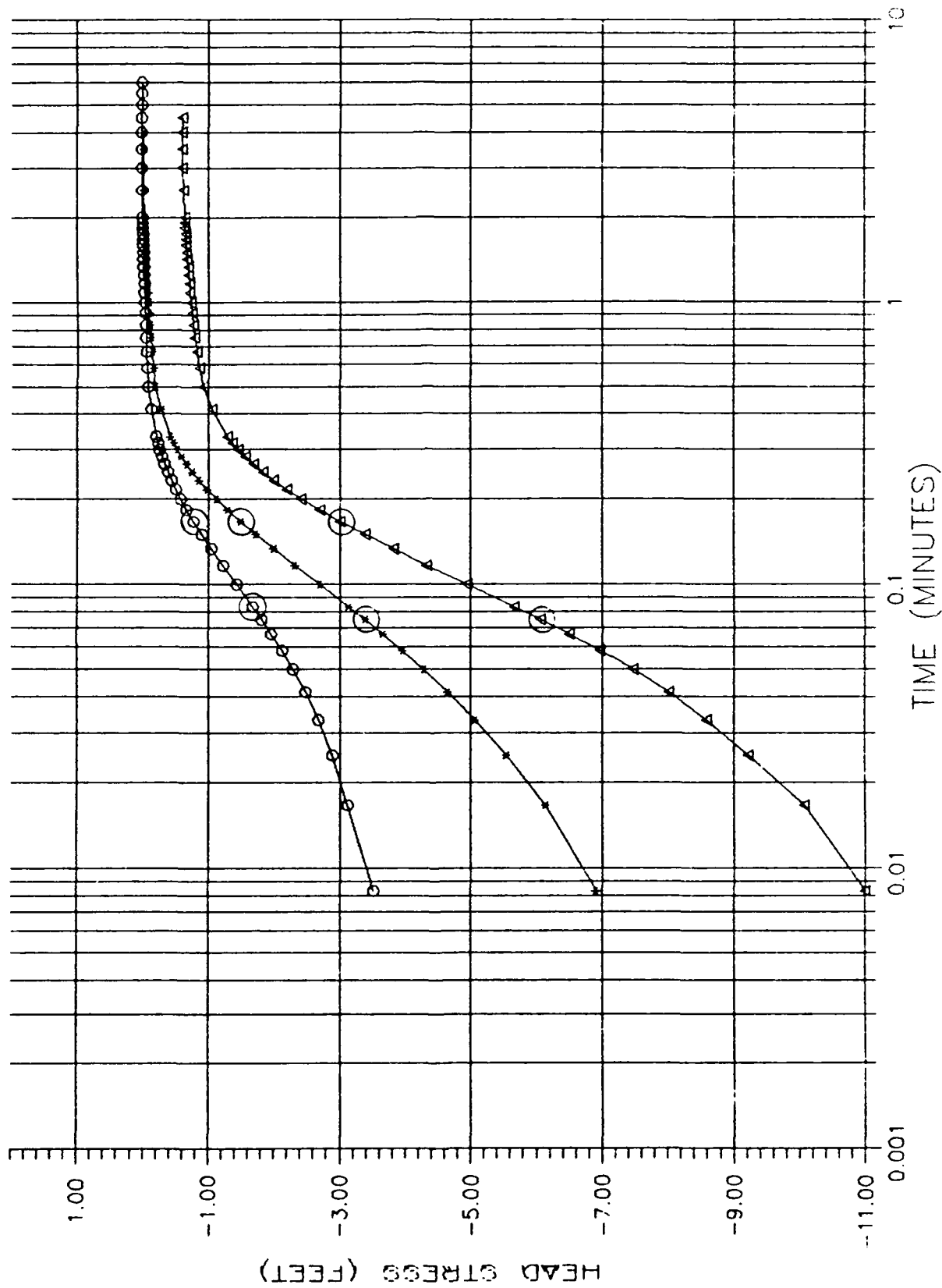
K=5.1E-2 CM/SEC

K=5.0E-2 CM/SEC

K=4.9E-2 CM/SEC

K=4.8E-2 CM/SEC

# PBN-89-02B



oooo TEST NO. 1  
\*\*\*\*\* TEST NO. 2  
^v^v^v^v^v TEST NO. 3

WELL PEN-89-025

WELL DIAMETER=0.3125FT, SCREEN LENGTH=12FT, BORING DIAMETER=0.75FT

TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.008	-3.519	0.008	-6.906	0.008	-10.999
0.017	-3.123	0.017	-6.136	0.017	-10.072
0.025	-2.888	0.025	-5.537	0.025	-9.233
0.033	-2.674	0.033	-5.064	0.033	-8.590
0.042	-2.478	0.042	-4.648	0.042	-8.016
0.050	-2.289	0.050	-4.282	0.050	-7.473
0.058	-2.125	0.058	-3.954	0.058	-6.969
0.067	-1.961	0.067	-3.658	0.067	-6.502
0.075	-1.810	0.075	-3.386	0.075	-6.061
0.083	-1.677	0.083	-3.134	0.083	-5.657
0.100	-1.431	0.100	-2.693	0.100	-4.938
0.117	-1.223	0.117	-2.314	0.117	-4.333
0.133	-1.046	0.133	-1.993	0.133	-3.822
0.150	-0.895	0.150	-1.715	0.150	-3.380
0.167	-0.769	0.167	-1.488	0.167	-3.014
0.183	-0.662	0.183	-1.286	0.183	-2.693
0.200	-0.573	0.200	-1.122	0.200	-2.421
0.217	-0.499	0.217	-0.977	0.217	-2.194
0.233	-0.435	0.233	-0.851	0.233	-1.999
0.250	-0.378	0.250	-0.750	0.250	-1.829
0.267	-0.327	0.267	-0.662	0.267	-1.684
0.283	-0.290	0.283	-0.586	0.283	-1.564
0.300	-0.252	0.300	-0.523	0.300	-1.456
0.317	-0.227	0.317	-0.466	0.317	-1.368
0.33	-0.201	0.333	-0.416	0.333	-1.292
0.417	-0.126	0.417	-0.277	0.417	-1.059
0.500	-0.081	0.500	-0.195	0.500	-0.927
0.583	-0.063	0.583	-0.157	0.583	-0.857
0.667	-0.050	0.667	-0.132	0.667	-0.819
0.750	-0.037	0.750	-0.113	0.750	-0.788
0.917	-0.031	0.833	-0.100	0.833	-0.769
1.000	-0.025	0.917	-0.088	0.917	-0.750
1.083	-0.018	1.000	-0.081	1.000	-0.731
1.250	-0.012	1.083	-0.075	1.083	-0.719
1.333	-0.006	1.167	-0.063	1.167	-0.706
1.583	0.000	1.250	-0.056	1.250	-0.693
1.833	0.006	1.333	-0.050	1.333	-0.687
2.500	0.012	1.417	-0.044	1.417	-0.674
3.000	0.018	1.500	-0.037	1.500	-0.668
4.500	0.025	1.667	-0.031	1.583	-0.662
5.000	0.018	1.833	-0.025	1.667	-0.655
		2.500	-0.012	1.750	-0.649
		3.000	-0.006	1.833	-0.643
				2.000	-0.637
				2.500	-0.618
				3.000	-0.611
				3.500	-0.605

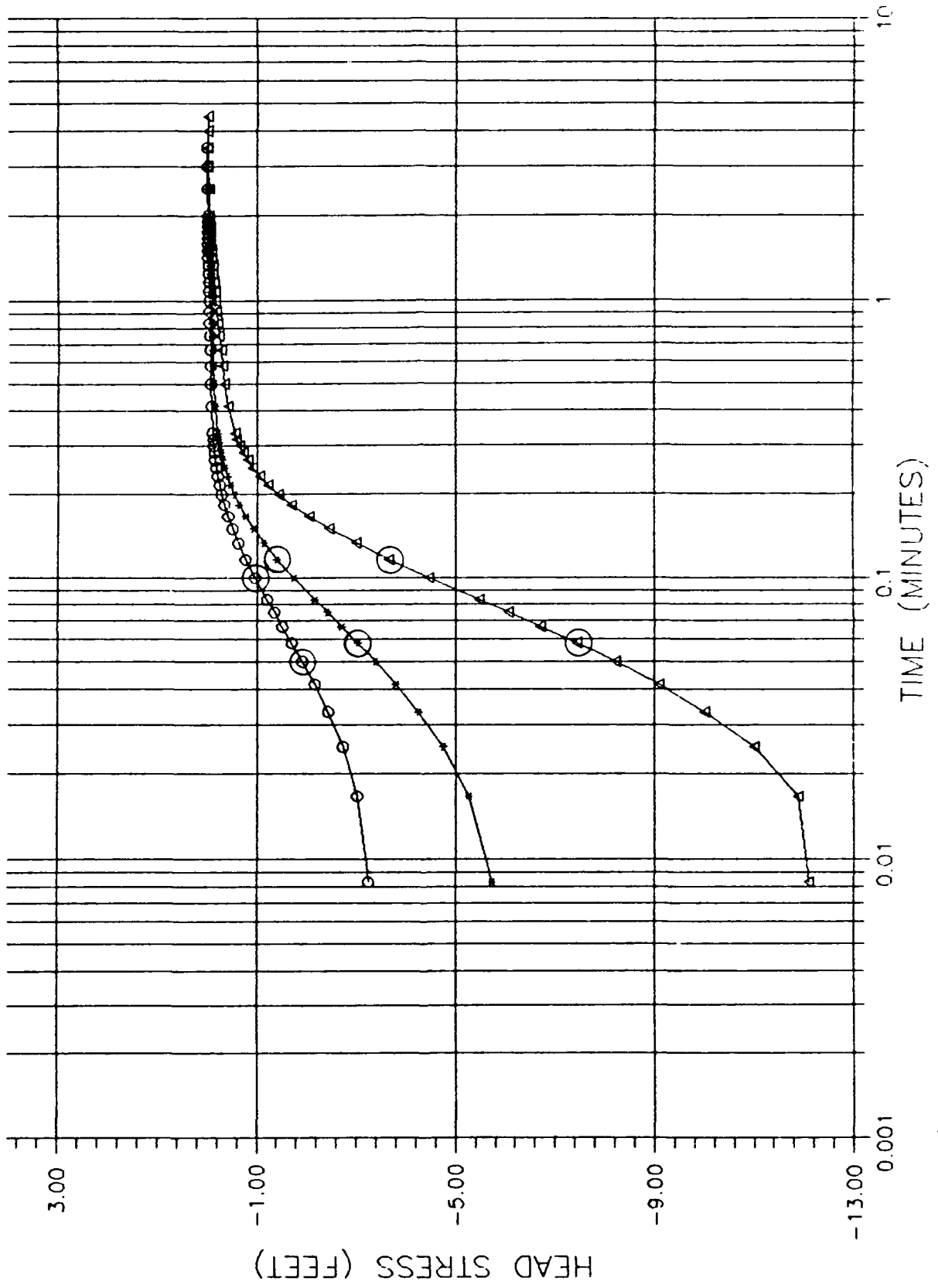
K=1.6E-2 CM/SEC

K=1.6E-2 CM/SEC

K=1.3E-2 CM/SEC



# PBN-89-02C



○ TEST NO. 1  
□ TEST NO. 2  
△ TEST NO. 3

WELL PBN 89-02C

WELL DIAMETER=0.3125FT, SCREEN LENGTH=11FT, BORING DIAMETER=0.75FT

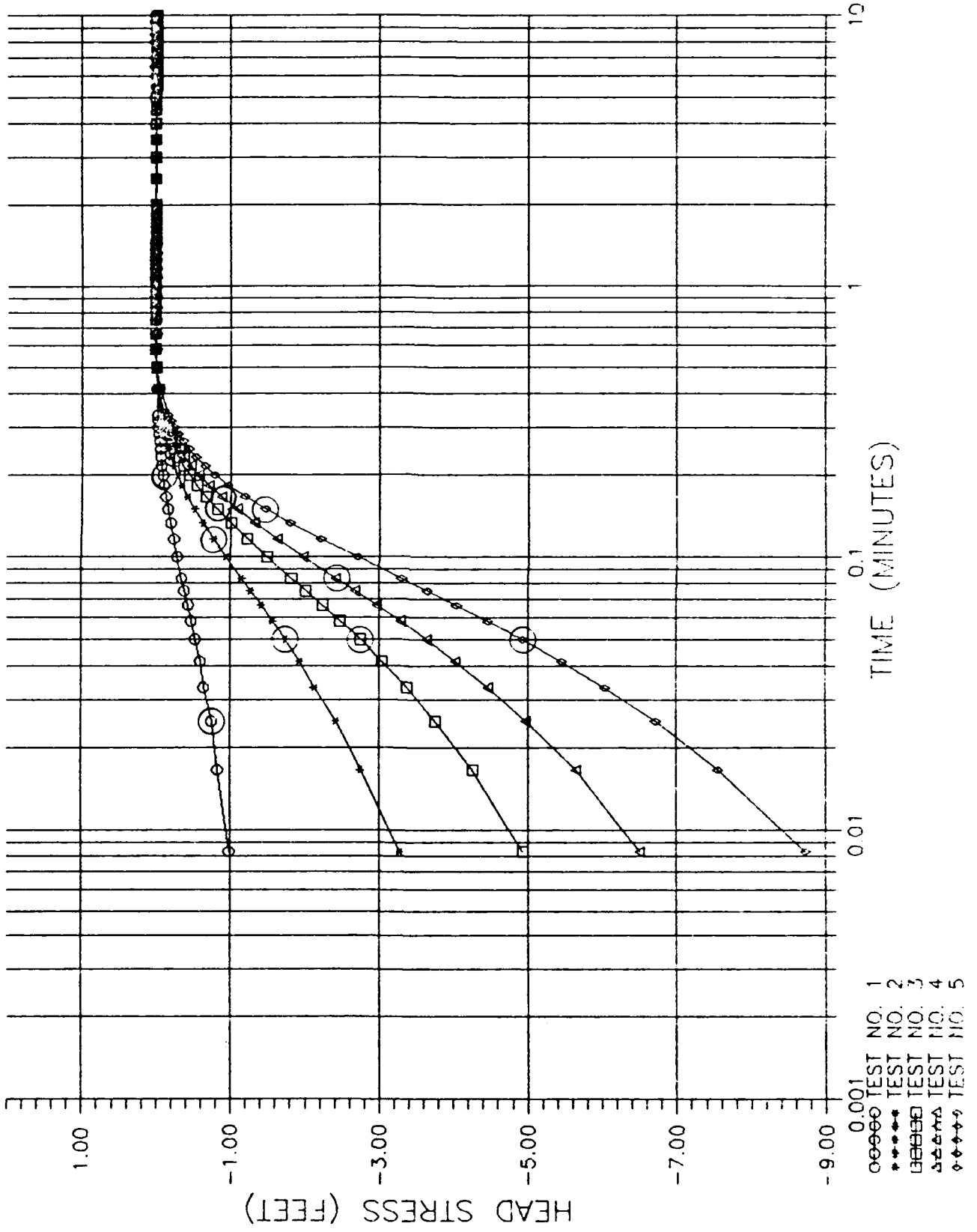
TEST 1		TEST 2		TEST 3	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-3.248	0.008	-5.739	0.008	-12.103
0.017	-3.021	0.017	-5.266	0.017	-11.888
0.025	-2.731	0.025	-4.755	0.025	-11.005
0.033	-2.434	0.033	-4.257	0.033	-10.022
0.042	-2.163	0.042	-3.796	0.042	-9.094
0.050	-1.923	0.050	-3.393	0.050	-8.224
0.058	-1.709	0.058	-3.033	0.058	-7.427
0.067	-1.520	0.067	-2.712	0.067	-6.710
0.075	-1.356	0.075	-2.421	0.075	-6.061
0.083	-1.210	0.083	-2.169	0.083	-5.474
0.100	-0.964	0.100	-1.747	0.100	-4.465
0.117	-0.775	0.117	-1.406	0.117	-3.651
0.133	-0.624	0.133	-1.147	0.133	-2.995
0.150	-0.510	0.150	-0.939	0.150	-2.466
0.167	-0.422	0.167	-0.775	0.167	-2.043
0.183	-0.346	0.183	-0.649	0.183	-1.709
0.200	-0.290	0.200	-0.548	0.200	-1.444
0.217	-0.245	0.217	-0.466	0.217	-1.229
0.233	-0.208	0.233	-0.403	0.233	-1.059
0.250	-0.182	0.250	-0.353	0.250	-0.920
0.267	-0.163	0.267	-0.309	0.267	-0.813
0.283	-0.145	0.283	-0.277	0.283	-0.725
0.300	-0.132	0.300	-0.252	0.300	-0.655
0.317	-0.119	0.317	-0.227	0.317	-0.599
0.333	-0.107	0.333	-0.214	0.333	-0.555
0.417	-0.081	0.417	-0.163	0.417	-0.422
0.500	-0.069	0.500	-0.138	0.500	-0.346
0.583	-0.063	0.583	-0.119	0.583	-0.302
0.667	-0.056	0.667	-0.107	0.667	-0.271
0.750	-0.050	0.750	-0.100	0.750	-0.239
0.833	-0.044	0.833	-0.088	0.833	-0.214
1.000	-0.037	0.917	-0.081	0.917	-0.189
1.167	-0.031	1.000	-0.069	1.000	-0.170
1.250	-0.025	1.083	-0.063	1.083	-0.151
1.417	-0.018	1.167	-0.056	1.167	-0.138
1.750	-0.012	1.250	-0.050	1.250	-0.119
2.500	-0.006	1.333	-0.044	1.333	-0.107
		1.500	-0.037	1.417	-0.094
		1.583	-0.031	1.500	-0.081
		1.667	-0.025	1.583	-0.075
		1.833	-0.018	1.667	-0.069
		2.500	-0.006	1.750	-0.063
				1.833	-0.056
				1.917	-0.050
				2.000	-0.044
				2.500	-0.031
				3.000	-0.018
				3.500	-0.012

K=2.6E-2 CM/SEC

K=2.5E-2 CM/SEC

K=2.3E-2 CM/SEC

PBN-89-03B

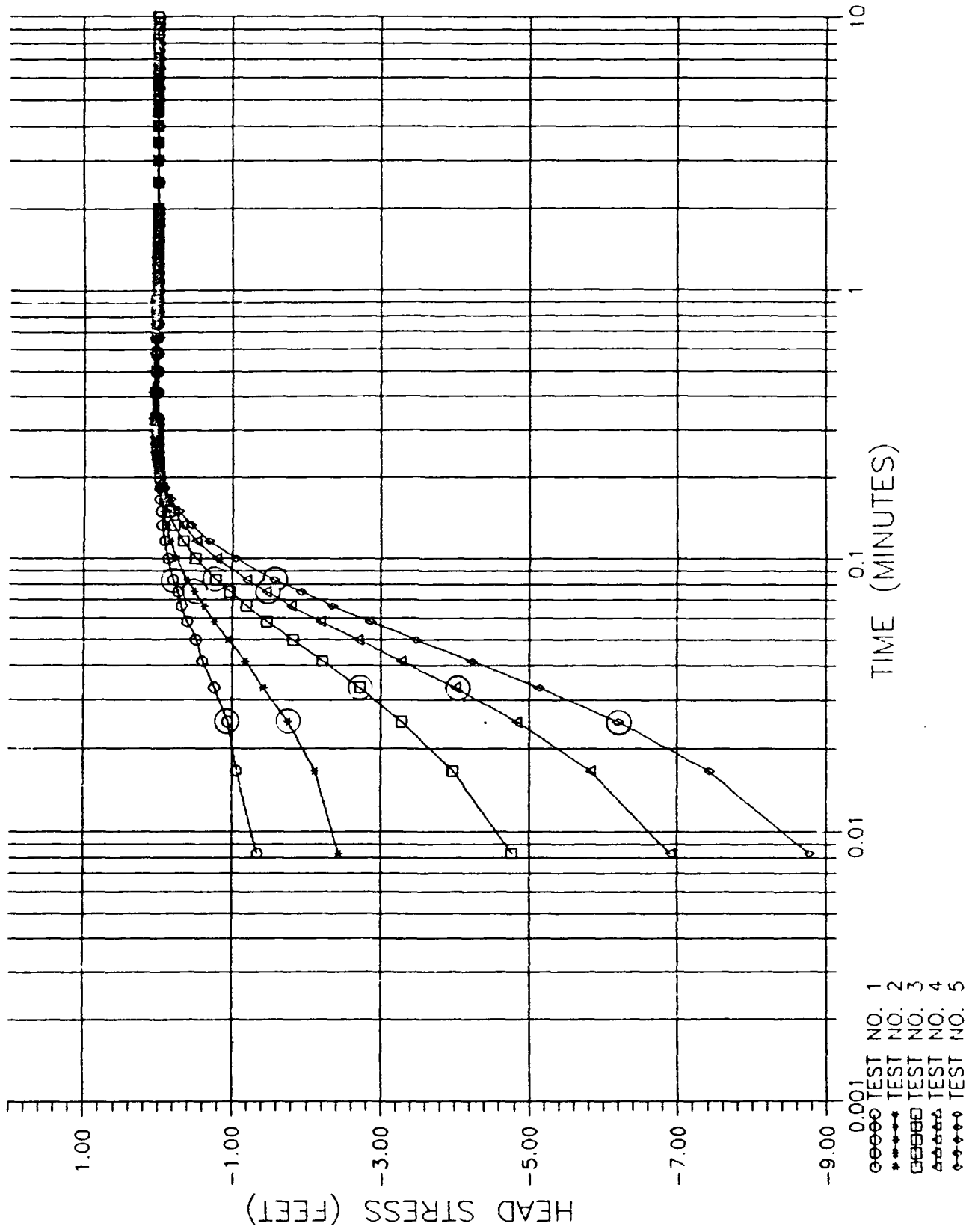


WDCU PEN-99-003

WDCU DIAMETER=0.3105FT, TEST LENGTH=10FT, BORING DIAMETER=1.0FT

TEST 1		TEST 2		TEST 3		TEST 4		TEST 5	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-0.982	0.008	-3.276	0.008	-4.936	0.008	-6.508	0.008	-8.726
0.017	-0.830	0.017	-2.750	0.017	-4.258	0.017	-5.653	0.017	-7.554
0.025	-0.747	0.025	-2.420	0.025	-3.758	0.025	-4.968	0.025	-6.717
0.033	-0.640	0.033	-2.129	0.033	-3.377	0.033	-4.474	0.033	-6.030
0.042	-0.595	0.042	-1.932	0.042	-3.035	0.042	-4.030	0.042	-5.456
0.050	-0.532	0.050	-1.736	0.050	-2.750	0.050	-3.644	0.050	-4.936
0.058	-0.475	0.058	-1.565	0.058	-2.477	0.058	-3.295	0.058	-4.467
0.067	-0.437	0.067	-1.419	0.067	-2.243	0.067	-2.972	0.067	-4.043
0.075	-0.386	0.075	-1.273	0.075	-2.021	0.075	-2.687	0.075	-3.556
0.083	-0.348	0.083	-1.153	0.083	-1.825	0.083	-2.427	0.083	-3.308
0.100	-0.285	0.100	-0.937	0.100	-1.495	0.100	-1.963	0.100	-2.706
0.117	-0.234	0.117	-0.766	0.117	-1.223	0.117	-1.628	0.117	-2.211
0.133	-0.190	0.133	-0.627	0.133	-1.001	0.133	-1.324	0.133	-1.799
0.150	-0.152	0.150	-0.513	0.150	-0.817	0.150	-1.083	0.150	-1.470
0.167	-0.126	0.167	-0.418	0.167	-0.665	0.167	-0.874	0.167	-1.191
0.183	-0.101	0.183	-0.342	0.183	-0.545	0.183	-0.709	0.183	-0.950
0.200	-0.082	0.200	-0.278	0.200	-0.443	0.200	-0.576	0.200	-0.779
0.217	-0.063	0.217	-0.228	0.217	-0.361	0.217	-0.462	0.217	-0.650
0.233	0.057	0.233	-0.183	0.233	-0.297	0.233	-0.373	0.233	-0.532
0.250	-0.044	0.250	-0.152	0.250	-0.240	0.250	-0.318	0.250	-0.437
0.267	-0.038	0.267	-0.120	0.267	-0.195	0.267	-0.255	0.267	-0.361
0.283	-0.025	0.283	-0.095	0.283	-0.158	0.283	-0.202	0.283	-0.291
0.300	-0.019	0.300	-0.076	0.300	-0.126	0.300	-0.164	0.300	-0.234
0.333	-0.012	0.317	-0.057	0.317	-0.101	0.317	-0.126	0.317	-0.190
0.417	0.000	0.333	-0.044	0.333	-0.082	0.333	-0.101	0.333	-0.152
0.500	0.006	0.417	-0.006	0.417	-0.025	0.417	-0.019	0.417	-0.044
5.000	0.012	0.500	0.006	0.500	0.006	0.500	0.019	0.500	0.012
5.500	0.006	0.583	0.019	0.583	0.019	0.583	0.031	0.583	0.025
6.000	0.012	1.083	0.012	1.167	0.012	1.083	0.025	0.667	0.038
7.500	0.006	1.750	0.006	1.500	0.006	1.333	0.019	0.917	0.031
8.000	0.012	2.500	0.000	2.500	0.000	1.667	0.010	1.083	0.025
K=2.5E-2 CM/SEC		7.000	0.006	5.500	-0.006	3.000	0.006	1.333	0.019
		7.500	0.000	K=2.4E-2 CM/SEC		4.000	0.000	1.667	0.010
		12.000	0.066			K=2.4E-2 CM/SEC		1.750	0.006
		K=2.5E-2 CM/SEC						3.000	0.000
								4.000	-0.006
								K=2.4E-2 CM/SEC	

PBN-89-03C



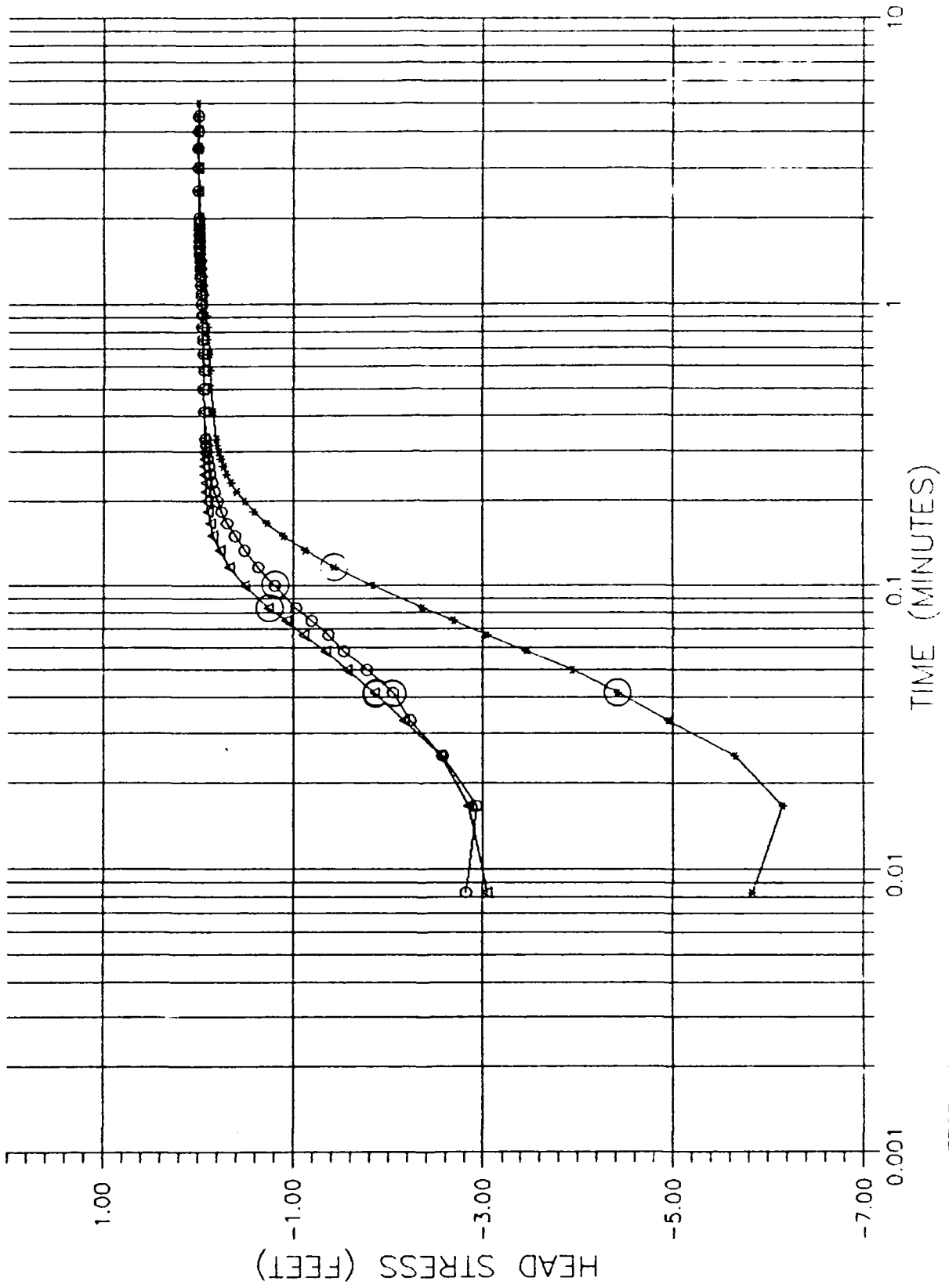
WELL PBN-89-030

WELL DIAMETER: 0.3105 FT. TEST LENGTH: 10 FT. PUMP DIAMETER: 0.75 FT.

TEST 1		TEST 2		TEST 3		TEST 4		TEST 5	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.000	-1.543	0.000	-1.439	0.000	-4.272	0.008	-6.921	0.002	-8.771
0.017	-1.058	0.017	-2.116	0.017	-3.979	0.017	-5.836	0.017	-7.427
0.025	-0.931	0.025	-1.755	0.025	-3.282	0.025	-4.835	0.025	-6.199
0.033	-0.754	0.033	-1.413	0.033	-2.718	0.033	-4.011	0.033	-5.139
0.042	-0.595	0.042	-1.178	0.042	-2.218	0.042	-3.276	0.042	-4.239
0.050	-0.507	0.050	-0.937	0.050	-1.812	0.050	-2.695	0.050	-3.479
0.058	-0.392	0.058	-0.760	0.058	-1.470	0.058	-2.199	0.058	-2.964
0.067	-0.316	0.067	-0.621	0.067	-1.131	0.067	-1.793	0.067	-2.351
0.075	-0.266	0.075	-0.487	0.075	-0.963	0.075	-1.463	0.075	-1.926
0.083	-0.202	0.083	-0.392	0.083	-0.779	0.083	-1.191	0.083	-1.571
0.100	-0.153	0.100	-0.247	0.100	-0.597	0.100	-0.785	0.100	-1.045
0.117	-0.082	0.117	-0.158	0.117	-0.329	0.117	-0.513	0.117	-0.684
0.133	-0.050	0.133	-0.101	0.133	-0.209	0.133	-0.329	0.133	-0.443
0.150	-0.031	0.150	-0.063	0.150	-0.126	0.150	-0.202	0.150	-0.272
0.167	-0.019	0.167	-0.038	0.167	-0.076	0.167	-0.114	0.167	-0.164
0.183	-0.012	0.183	-0.019	0.183	-0.036	0.183	-0.057	0.183	-0.082
0.200	-0.006	0.200	-0.012	0.200	-0.012	0.200	-0.019	0.200	-0.031
0.217	0.000	0.217	0.000	0.217	0.006	0.217	0.006	0.217	0.006
0.250	0.006	0.250	0.006	0.233	0.019	0.233	0.031	0.233	0.031
0.833	0.000	0.267	0.012	0.250	0.025	0.250	0.044	0.250	0.050
1.750	-0.006	0.417	0.019	0.267	0.031	0.267	0.050	0.267	0.063
3.500	0.000	0.500	0.012	0.283	0.038	0.283	0.057	0.283	0.069
4.000	-0.006	0.750	0.006	0.333	0.044	0.300	0.063	0.300	0.076
4.500	0.000	1.417	0.000	0.500	0.038	0.333	0.069	0.333	0.082
5.000	-0.006	4.500	-0.006	0.667	0.031	0.500	0.063	0.500	0.076
14.000	0.000			0.833	0.025	0.583	0.057	0.583	0.069
		K=4.3E-2 CM/SEC		1.000	0.019	0.667	0.050	0.667	0.063
				1.083	0.012	0.833	0.044	0.750	0.050
				1.417	0.006	0.917	0.038	0.917	0.044
				1.500	0.012	1.167	0.031	1.000	0.039
				1.583	0.006	1.250	0.025	1.167	0.031
				3.000	0.000	1.583	0.019	1.250	0.025
				9.500	-0.019	2.500	0.012	1.417	0.019
				10.000	0.006			1.583	0.012
						K=4.0E-2 CM/SEC		1.833	0.006
								3.500	0.000
								7.500	-0.006

K=4.0E-2 CM/SEC

PBN-89-04C



O O O O O TEST NO. 1  
\* \* \* \* \* TEST NO. 2  
Δ Δ Δ Δ Δ TEST NO. 3

WELL PBN-89-04C  
 WELL DIAMETER=0.1125FT, SCREEN LENGTH=15FT, BGRING DIAMETER=0.75FT

TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.008	-2.820	0.008	-5.834	0.008	-3.046
0.017	-2.927	0.017	-6.149	0.017	-2.844
0.025	-2.574	0.025	-5.651	0.025	-2.554
0.033	-2.233	0.033	-4.951	0.033	-2.169
<u>0.042</u>	<u>-2.050</u>	<u>0.042</u>	<u>-4.415</u>	<u>0.042</u>	<u>-1.860</u>
0.050	-1.779	0.050	-3.941	0.050	-1.564
0.058	-1.533	0.058	-3.456	0.058	-1.343
0.067	-1.375	0.067	-3.040	0.067	-1.122
0.075	-1.193	0.075	-2.686	0.075	-0.927
0.083	-1.035	0.083	-2.365	<u>0.083</u>	<u>-0.744</u>
<u>0.100</u>	<u>-0.808</u>	0.100	-1.835	0.100	-0.485
0.117	-0.631	<u>0.117</u>	<u>-1.431</u>	0.117	-0.334
0.133	-0.486	0.133	-1.128	0.133	-0.227
0.150	-0.385	0.150	-0.895	0.150	-0.157
0.167	-0.303	0.167	-0.719	0.167	-0.126
0.183	-0.246	0.183	-0.586	0.183	-0.100
0.200	-0.202	0.200	-0.485	0.200	-0.081
0.217	-0.171	0.217	-0.403	0.233	-0.075
0.233	-0.146	0.233	-0.346	0.250	-0.069
0.250	-0.127	0.250	-0.296	0.417	-0.063
0.267	-0.114	0.267	-0.264	0.500	-0.056
0.283	-0.101	0.283	-0.239	0.583	-0.050
0.300	-0.089	0.300	-0.214	0.667	-0.044
0.317	-0.082	0.317	-0.195	0.833	-0.037
0.333	-0.076	0.333	-0.189	0.917	-0.031
0.417	-0.064	0.417	-0.151	1.083	-0.025
0.500	-0.057	0.500	-0.138	1.250	-0.018
0.667	-0.051	0.583	-0.119	1.417	-0.012
0.750	-0.045	0.667	-0.113	1.750	-0.006
0.833	-0.038	0.750	-0.100	2.500	0.000
1.000	-0.032	0.833	-0.094	3.500	0.006
1.167	-0.026	0.917	-0.081		
1.250	-0.019	1.000	-0.075		
1.500	-0.013	1.083	-0.069		
1.917	-0.007	1.167	-0.063		
		1.250	-0.056		
		1.333	-0.044		
		1.500	-0.037		
		1.667	-0.031		
		1.750	-0.025		
		2.000	-0.018		
		2.500	-0.012		
		3.000	-0.006		

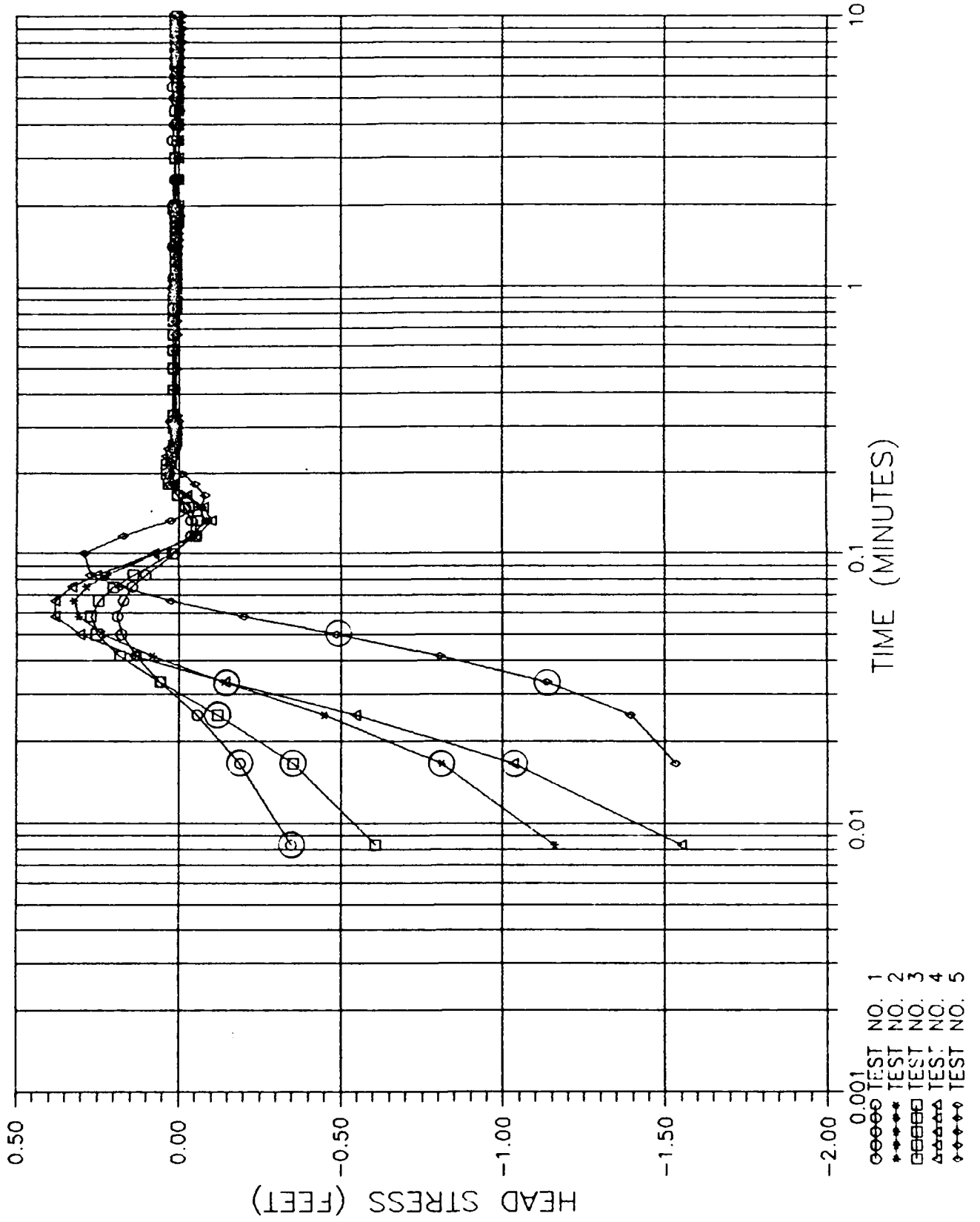
K=2.4E-2 CM/SEC

K=3.4E-2 CM/SEC

K=2.2E-2 CM/SEC



PBN-89-10B



WELL PEN-89-109

WELL DIAMETER=0.3125FT, SCREEN LENGTH=13FT, BOPING DIAMETER=0.75FT

TEST 1		TEST 2		TEST 3		TEST 4		TEST 5	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-0.348	0.008	-1.159	0.008	-0.354	0.008	-1.552	0.017	-1.533
0.017	-0.190	0.017	-0.811	0.017	-0.120	0.017	-1.033	0.025	-1.394
0.025	-0.057	0.025	-0.449	0.025	0.057	0.025	-0.545	0.033	-1.134
0.033	0.057	0.033	-0.139	0.033	0.183	0.033	-0.145	0.042	-0.834
0.042	0.133	0.042	0.082	0.042	0.253	0.042	0.133	0.050	-0.437
0.050	0.177	0.050	0.234	0.050	0.272	0.050	0.304	0.058	-0.202
0.058	0.190	0.058	0.310	0.058	0.247	0.058	0.383	0.067	0.025
0.067	0.171	0.067	0.323	0.067	0.202	0.075	0.329	0.075	0.153
0.075	0.145	0.075	0.285	0.075	0.139	0.083	0.253	0.083	0.272
0.083	0.101	0.083	0.221	0.083	0.019	0.100	0.076	0.100	0.291
0.100	0.012	0.100	0.069	0.100	-0.050	0.117	-0.057	0.117	0.171
0.117	-0.038	0.117	-0.044	0.117	-0.057	0.133	-0.101	0.133	0.025
0.150	-0.019	0.133	-0.082	0.133	-0.031	0.150	-0.076	0.150	-0.069
0.167	0.006	0.150	-0.063	0.150	0.006	0.167	-0.025	0.167	-0.082
0.183	0.025	0.167	-0.025	0.167	0.031	0.183	0.019	0.183	-0.050
0.200	0.031	0.183	0.019	0.183	0.038	0.200	0.038	0.200	-0.012
0.217	0.025	0.200	0.038	0.200	0.025	0.233	0.025	0.217	0.025
0.233	0.019	0.233	0.025	0.233	0.019	0.250	0.012	0.233	0.038
0.250	0.012	0.250	0.012	0.250	0.012	0.267	0.006	0.250	0.031
0.317	0.025	0.267	0.006	0.267	0.019	0.317	0.012	0.267	0.019
0.333	0.019	0.317	0.012	0.300	0.012	0.833	0.006	0.283	0.006
0.917	0.012	1.000	0.006	1.000	0.006	1.750	0.000	0.300	0.000
1.000	0.019	1.083	0.012	2.500	0.012	6.000	0.006	0.333	0.006
1.167	0.012	1.167	0.006	3.000	0.006	6.500	0.000	0.417	0.012
1.417	0.019	1.750	0.000	3.500	0.012	8.000	0.006	0.500	0.006
1.500	0.012	1.917	0.006	4.500	0.006	8.500	0.000	0.583	0.012
1.917	0.019	2.500	0.000	5.000	0.012	9.000	0.006	0.657	0.006
2.500	0.012	4.000	0.006	14.000	0.006			1.417	0.000
3.500	0.019	4.500	0.000	16.000	0.012			1.833	0.006
4.000	0.012	5.000	0.006	24.000	0.019			1.917	0.006
5.500	0.019	5.500	0.000	30.000	0.012			2.000	0.000
6.000	0.012			34.000	0.006			4.000	-0.006
				40.000	0.012			8.000	-0.012
				45.000	0.006			8.500	-0.006
				50.000	0.000			9.000	-0.012
								9.500	-0.006
								10.000	-0.012
								12.000	-0.006
								24.000	0.000
								26.000	-0.006

K=1.8E-1 CM/SEC

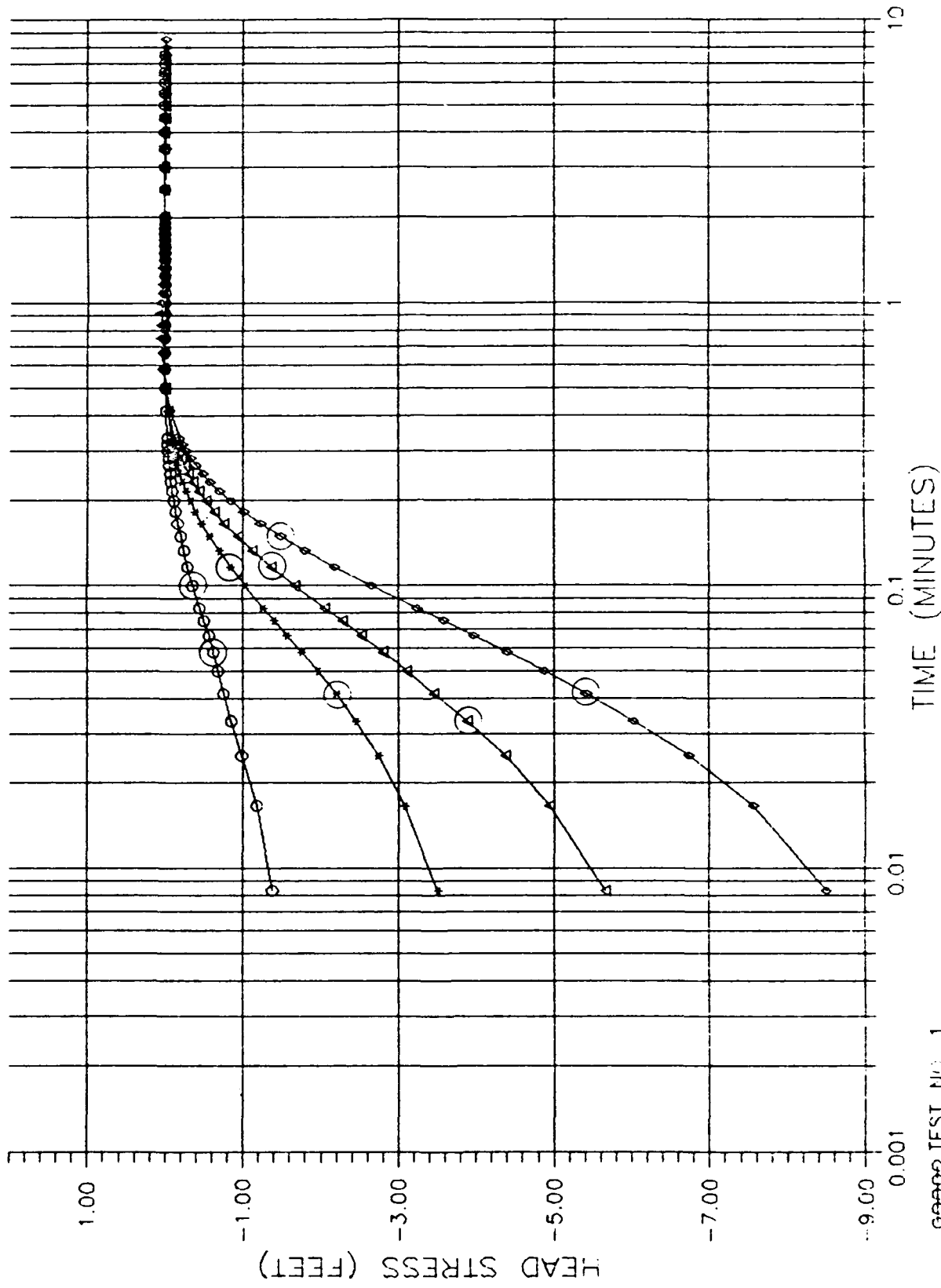
K=1.7E-1 CM/SEC

K=2.1E-1 CM/SEC

K=1.9E-1 CM/SEC

K=0.5E-2 CM/SEC

# PBN-89-10C



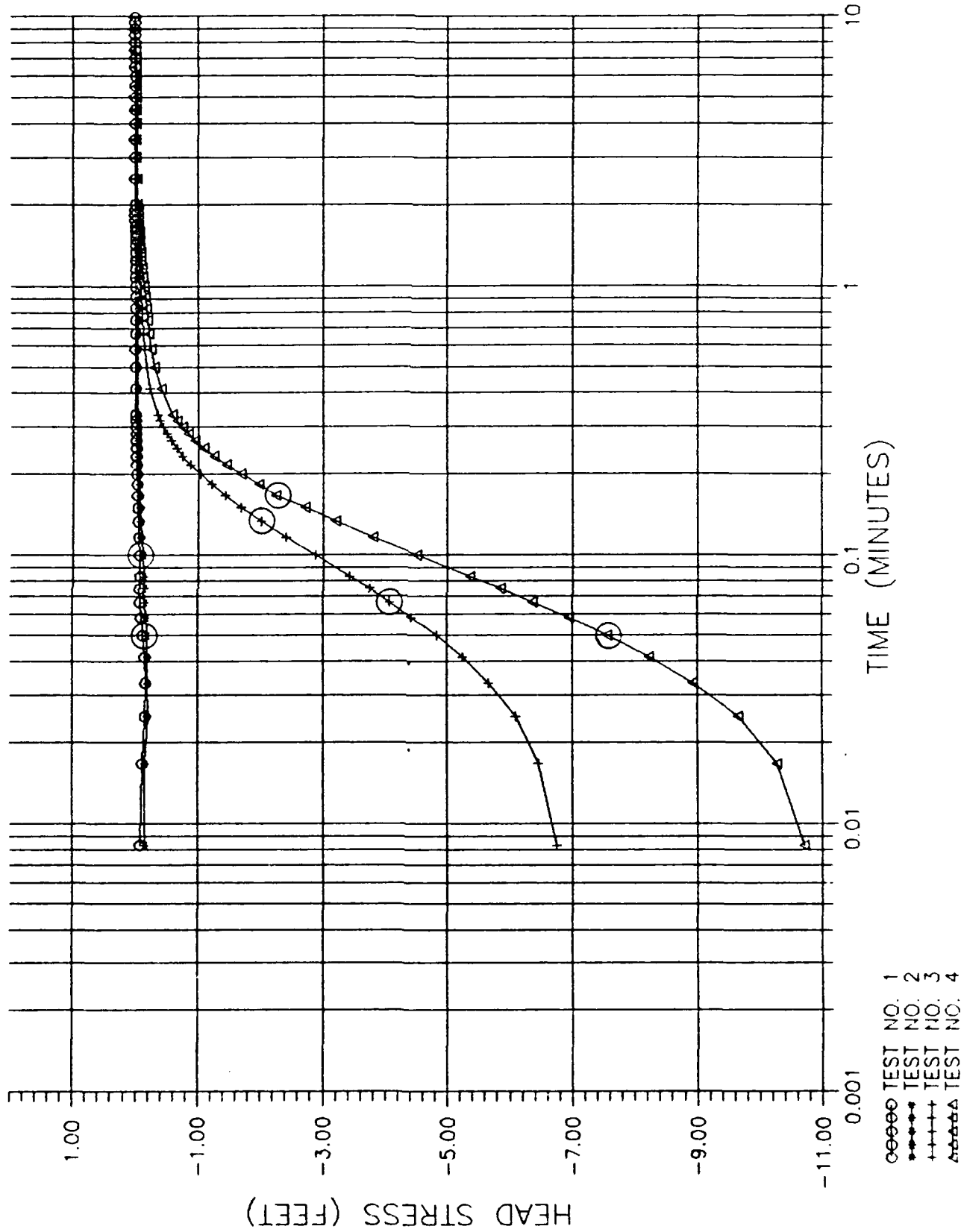
○ TEST NO. 1  
\* TEST NO. 2  
△ TEST NO. 3  
◇ TEST NO. 4

WELL PBN-89-10C  
 WELL DIAMETER=0.3125FT, SCREEN LENGTH=10FT, BORING DIAMETER=0.75FT

TEST 1		TEST 2		TEST 3		TEST 4	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-1.381	0.008	-3.511	0.008	-5.659	0.008	-8.505
0.017	-1.178	0.017	-3.086	0.017	-4.943	0.017	-7.567
0.025	-0.982	0.025	-2.744	0.025	-4.372	0.025	-6.736
0.033	-0.849	0.033	-2.458	0.033	-3.834	0.033	-6.027
0.042	-0.747	0.042	-2.205	0.042	-3.460	0.042	-5.418
0.050	-0.678	0.050	-1.970	0.050	-3.111	0.050	-4.879
0.058	-0.621	0.058	-1.761	0.058	-2.807	0.058	-4.404
0.067	-0.564	0.067	-1.571	0.067	-2.528	0.067	-3.973
0.075	-0.500	0.075	-1.406	0.075	-2.281	0.075	-3.587
0.083	-0.443	0.083	-1.261	0.083	-2.059	0.083	-3.244
0.100	-0.354	0.100	-1.026	0.100	-1.673	0.100	-2.655
0.117	-0.285	0.117	-0.842	0.117	-1.368	0.117	-2.180
0.133	-0.240	0.133	-0.697	0.133	-1.128	0.133	-1.799
0.150	-0.196	0.150	-0.570	0.150	-0.931	0.150	-1.489
0.167	-0.158	0.167	-0.468	0.167	-0.760	0.167	-1.229
0.183	-0.133	0.183	-0.386	0.183	-0.633	0.183	-1.014
0.200	-0.107	0.200	-0.323	0.200	-0.526	0.200	-0.842
0.217	-0.088	0.217	-0.266	0.217	-0.430	0.217	-0.697
0.233	-0.069	0.233	-0.221	0.233	-0.354	0.233	-0.576
0.250	-0.063	0.250	-0.183	0.250	-0.297	0.250	-0.461
0.267	-0.050	0.267	-0.152	0.267	-0.247	0.267	-0.399
0.283	-0.038	0.283	-0.126	0.283	-0.196	0.283	-0.329
0.300	-0.031	0.300	-0.107	0.300	-0.164	0.300	-0.272
0.317	-0.025	0.317	-0.088	0.317	-0.133	0.317	-0.221
0.417	-0.006	0.333	-0.076	0.333	-0.107	0.333	-0.183
0.500	0.000	0.417	-0.031	0.417	-0.033	0.417	-0.063
0.583	0.006	0.500	-0.006	0.500	0.000	0.500	-0.006
		0.583	0.006	0.583	0.025	0.583	0.025
K=2.6E-2 CM/SEC		0.750	0.012	0.667	0.031	0.667	0.038
		1.750	0.006	1.000	0.038	0.750	0.044
		1.833	0.012	1.167	0.025	0.833	0.050
		2.000	0.006	1.250	0.031	0.917	0.057
		3.000	0.000	1.333	0.038	1.083	0.038
				1.417	0.025	1.167	0.025
		K=2.6E-2 CM/SEC		1.583	0.019	1.250	0.019
				2.500	0.012	1.500	0.012
				3.500	0.006	1.917	0.006
				4.500	0.000	3.000	0.000
						3.500	-0.006
				K=2.3E-2 CM/SEC		6.000	-0.012

K=2.4E-2 CM/SEC

# PBN-89-10D



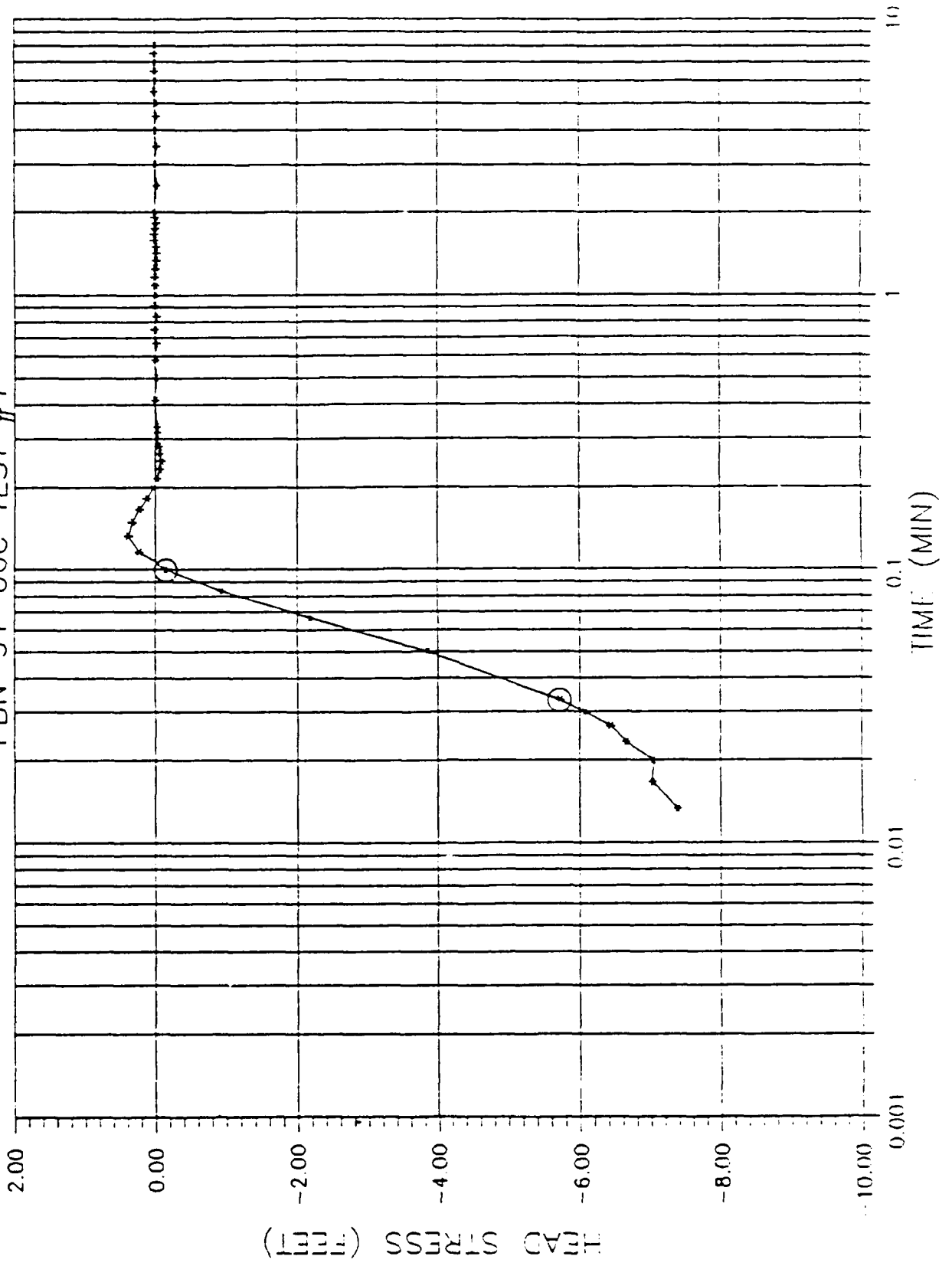
WELL PBN-89-100

WELL DIAMETER=0.3125FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.75FT

TEST 1		TEST 2		TEST 3		TEST 4	
TIME	HEAD	TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET	MIN.	FEET
0.008	-0.081	0.008	-0.151	0.008	-6.743	0.008	-10.715
0.017	-0.113	0.017	-0.157	0.017	-6.464	0.017	-10.280
0.025	-0.157	0.025	-0.201	0.025	-6.099	0.025	-9.662
0.033	-0.163	0.033	-0.195	0.033	-5.670	0.033	-8.937
0.042	-0.151	0.050	-0.189	0.042	-5.241	0.042	-8.230
<u>0.050</u>	<u>-0.119</u>	<u>0.058</u>	<u>-0.170</u>	0.050	-4.824	<u>0.050</u>	<u>-7.568</u>
0.058	-0.094	0.067	-0.157	0.058	-4.427	0.058	-6.943
0.067	-0.075	0.075	-0.138	<u>0.067</u>	<u>-4.080</u>	0.067	-6.370
0.075	-0.069	0.083	-0.126	0.075	-3.746	0.075	-5.846
<u>0.100</u>	<u>-0.063</u>	<u>0.100</u>	<u>-0.113</u>	0.083	-3.431	0.083	-5.360
0.117	-0.050	0.117	-0.094	0.100	-2.876	0.100	-4.509
0.133	-0.037	0.133	-0.075	0.117	-2.403	0.117	-3.809
0.150	-0.031	0.150	-0.069	<u>0.133</u>	<u>-2.011</u>	0.133	-3.216
0.167	-0.025	0.167	-0.063	0.150	-1.696	<u>0.150</u>	<u>-2.725</u>
0.183	-0.018	0.183	-0.056	0.167	-1.431	0.167	-2.252
0.200	-0.012	0.200	-0.050	0.183	-1.210	0.183	-1.974
0.217	-0.006	0.217	-0.044	0.200	-1.028	0.200	-1.691
0.267	0.000	0.233	-0.037	0.217	-0.876	0.217	-1.457
0.317	0.006	0.250	-0.044	0.233	-0.756	0.233	-1.255
0.583	0.012	0.267	-0.037	0.250	-0.649	0.250	-1.091
0.667	0.006	0.283	-0.031	0.267	-0.567	0.267	-0.953
1.750	0.012	0.333	-0.025	0.283	-0.491	0.283	-0.839
2.000	0.006	0.500	-0.018	0.300	-0.435	0.300	-0.745
2.500	0.012	0.583	-0.025	0.317	-0.384	0.317	-0.663
6.000	0.006	1.000	-0.018	0.333	-0.346	0.333	-0.593
6.500	0.012	1.167	-0.025	0.417	-0.227	0.417	-0.404
		1.250	-0.018	0.500	-0.163	0.500	-0.297
K=1.9E-2 CM/SEC		1.333	-0.025	0.583	-0.132	0.583	-0.246
		1.500	-0.018	0.667	-0.113	0.667	-0.208
		1.750	-0.025	0.750	-0.100	0.750	-0.183
		1.833	-0.018	0.833	-0.094	0.833	-0.164
		1.917	-0.025	0.917	-0.081	0.917	-0.145
		2.000	-0.018	1.000	-0.075	1.000	-0.133
		5.500	-0.025	1.083	-0.063	1.083	-0.114
		6.000	-0.018	1.167	-0.056	1.167	-0.101
				1.333	-0.044	1.250	-0.089
		K=1.5E-2 CM/SEC		1.500	-0.037	1.333	-0.082
				1.583	-0.031	1.417	-0.070
				1.750	-0.025	1.500	-0.063
				2.000	-0.018	1.667	-0.051
				2.500	-0.012	1.750	-0.044
				3.000	-0.006	1.917	-0.038
				4.000	0.000	2.000	-0.032
				6.000	-0.006	2.500	-0.019
						3.000	-0.013
				K=1.6E-2 CM/SEC		3.500	-0.007
						4.000	0.000

K=5.0E-2 CM/SEC

PBN-91-06C TEST #1



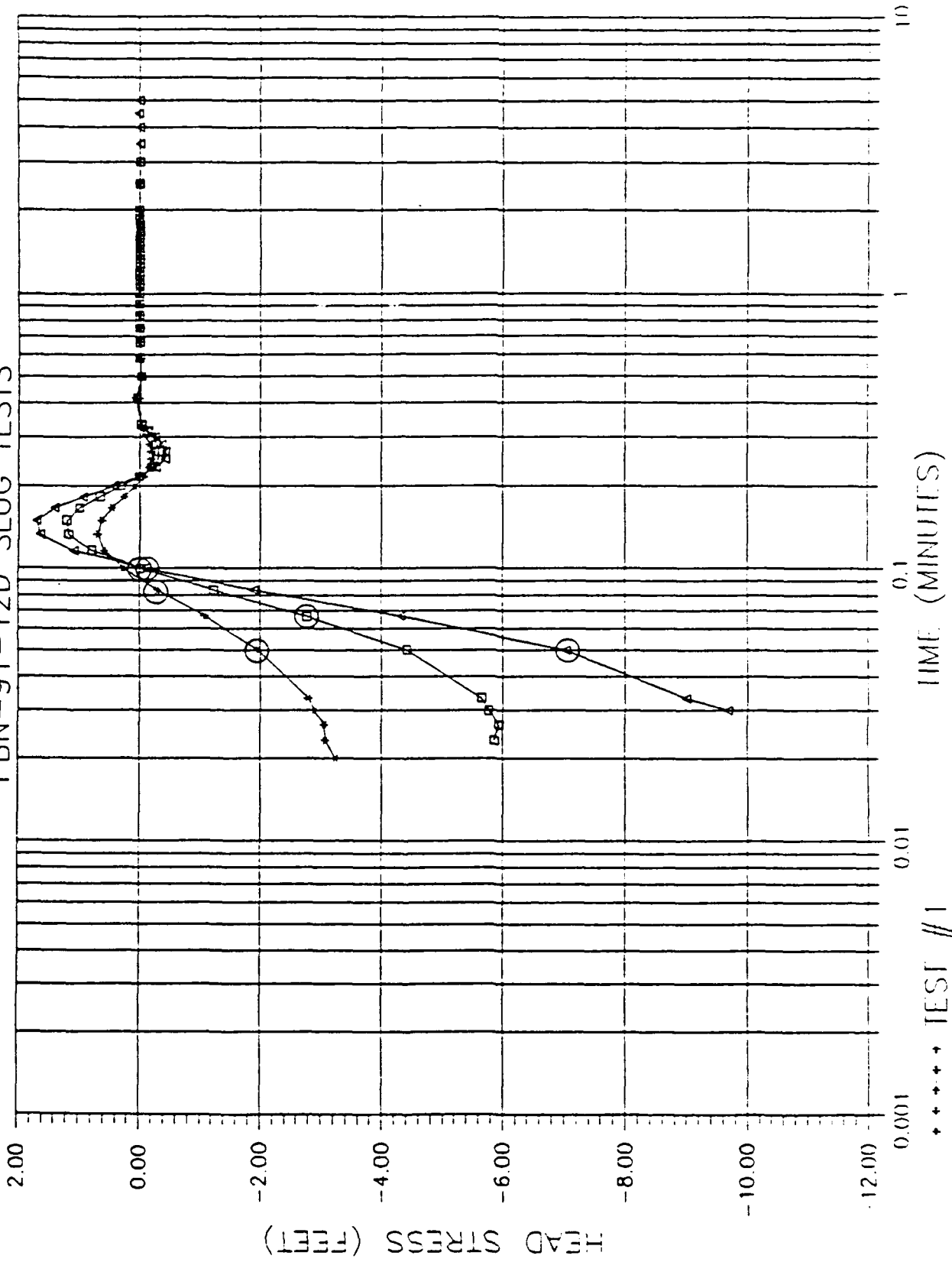
WELL PBN-31-36C  
 WELL DIAMETER=0.3125FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.75FT

TEST 1	
MINUTES	FEET
0.0033	-0.12
0.0066	-2.17
0.0099	-5.96
0.0133	-7.38
0.0166	-7.02
0.02	-7.03
0.0233	-6.65
0.0266	-6.43
0.03	-6.06
0.0333	-5.72
0.05	-3.86
0.0666	-2.18
0.0833	-0.94
0.1	-0.15
0.1166	0.23
0.1333	0.38
0.15	0.32
0.1666	0.22
0.1833	0.12
0.2	0.03
0.2166	-0.03
0.2333	-0.07
0.25	-0.09
0.2666	-0.07
0.2833	-0.05
0.3	-0.03
0.3166	-0.03
0.3333	-0.03
0.4167	-0.01
0.5	-0.02
0.5833	-0.01
0.6667	-0.02
0.75	0
0.8333	-0.02
0.9167	0
1	-0.01
1.0833	-0.01
1.1667	0
1.25	-0.01
1.3333	-0.02
1.4166	-0.02
1.5	-0.02
1.5833	0
1.6667	0
1.75	-0.01
1.8333	-0.02
1.9167	0
2	0.01
2.5	-0.03
3	0
3.6	-0.02
4	0
4.5	-0.02
5	-0.01
5.5	0.01
6	0
6.5	0
7	0
7.5	0
8	0

HVORSLEV:  
 K = 0.018 CM/SEC  
 BOWER AND RICE  
 K = 0.189 CM/SEC



PBN-91-12D SLUG TESTS



WELL P8N-91-120  
 WELL DIAMETER=0.3125FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.75FT

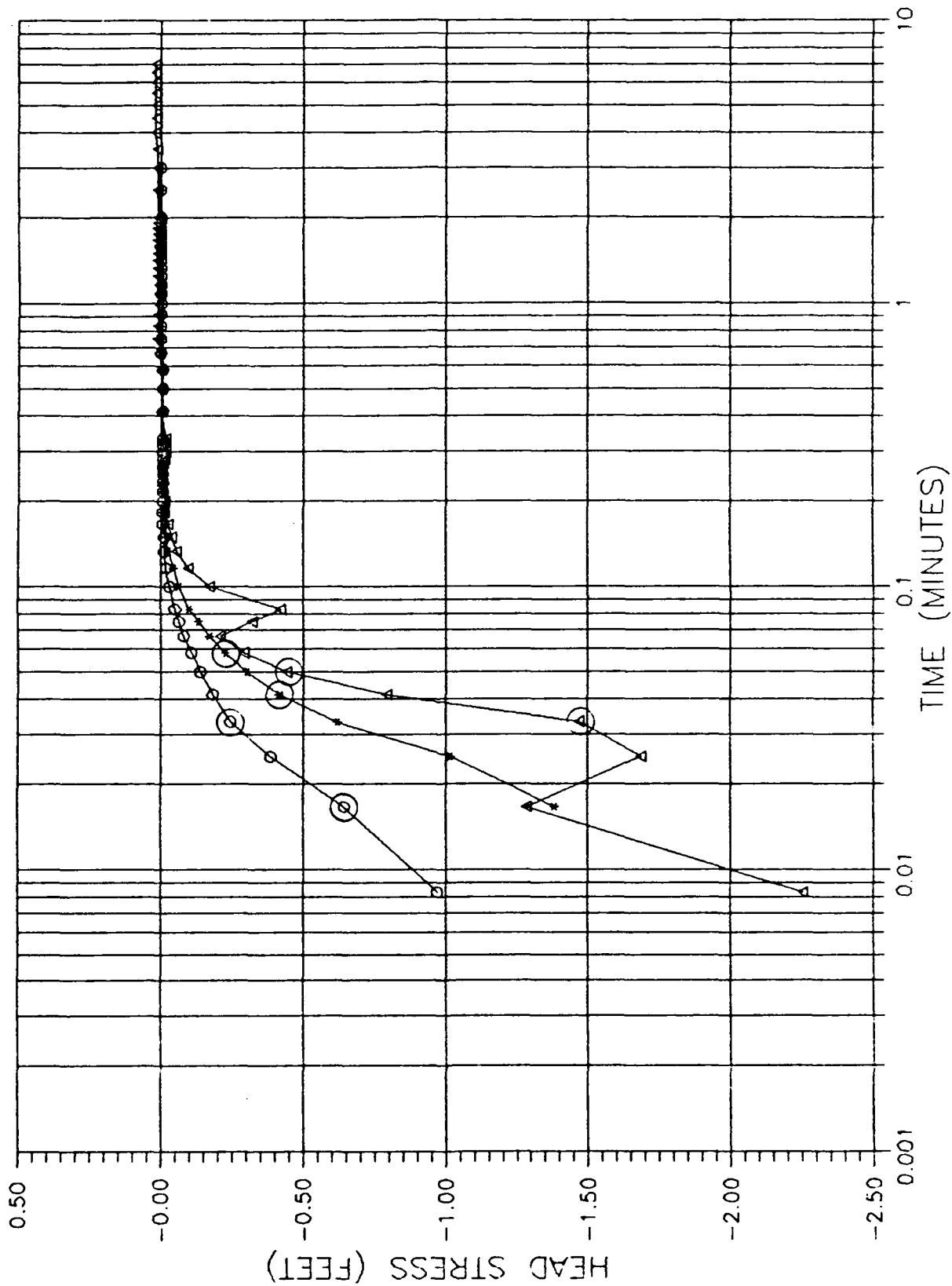
TEST 1		TEST 2		TEST 3	
MINUTES	FEET	MINUTES	FEET	MINUTES	FEET
0.0033	0.25	0.0033	0.07	0.0033	0.46
0.0066	-0.66	0.0066	0.07	0.0066	0.45
0.0099	-2.65	0.0099	0.07	0.0099	0.45
0.0133	-3.44	0.0133	0.07	0.0133	0.44
0.0166	-3.13	0.0166	-0.64	0.0166	-3.42
0.02	-3.24	0.02	-4.37	0.02	-7.96
0.0233	-3.08	0.0233	-6.87	0.0233	-10.27
0.0266	-3.06	0.0266	-5.96	0.0266	-9.31
0.03	-2.89	0.03	-5.77	0.03	-9.69
0.0333	-2.79	0.0333	-6.85	0.0333	-9
0.05	-1.97	0.05	-4.42	0.05	-7.04
0.0666	-1.08	0.0666	-2.77	0.0666	-4.32
0.0833	-0.29	0.0833	-1.23	0.0833	-1.9
0.1	0.28	0.1	-0.01	0.1	-0.07
0.1166	0.8	0.1166	0.8	0.1166	1.09
0.1333	0.71	0.1333	1.18	0.1333	1.66
0.15	0.64	0.15	1.21	0.15	1.7
0.1666	0.47	0.1666	1	0.1666	1.41
0.1833	0.27	0.1833	0.67	0.1833	0.94
0.2	0.08	0.2	0.32	0.2	0.44
0.2166	-0.07	0.2166	0.01	0.2166	0.02
0.2333	-0.16	0.2333	-0.19	0.2333	-0.27
0.25	-0.19	0.25	-0.3	0.25	-0.42
0.2666	-0.19	0.2666	-0.31	0.2666	-0.43
0.2833	-0.15	0.2833	-0.27	0.2833	-0.37
0.3	-0.1	0.3	-0.19	0.3	-0.28
0.3166	-0.06	0.3166	-0.11	0.3166	-0.14
0.3333	-0.01	0.3333	-0.02	0.3333	-0.03
0.4167	0.01	0.4167	0.05	0.4167	0.08
0.5	-0.02	0.5	-0.01	0.5	-0.02
0.5833	0	0.5833	0.01	0.5833	0.01
0.6667	0	0.6667	0.01	0.6667	0.01
0.75	0	0.75	0.01	0.75	0.01
0.8333	0	0.8333	0.01	0.8333	0.01
0.9167	0	0.9167	0.01	0.9167	0.01
1	0	1	0.01	1	0.01
1.0833	0	1.0833	0.01	1.0833	0.01
1.1667	0	1.1667	0.01	1.1667	0.01
1.25	0	1.25	0.01	1.25	0.01
1.3333	0	1.3333	0.01	1.3333	0.01
1.4166	0	1.4166	0.01	1.4166	0.01
1.5	0	1.5	0.01	1.5	0.01
1.5833	0	1.5833	0.01	1.5833	0.01
1.6667	0	1.6667	0	1.6667	0.01
1.75	0	1.75	0	1.75	0.01
1.8333	0	1.8333	0.01	1.8333	0.01
1.9167	0	1.9167	0.01	1.9167	0.01
2	0	2	0.01	2	0.01
2.5	0	2.5	0	2.5	0.01
		3	0	3	0.01
				3.6	0
				4	0
				4.5	0.01
				5	0

HVORSLEV:  
 K = 0.017 CM/SEC  
 BOUWER AND RICE:  
 K = 0.072 CM/SEC

K = 0.048 CM/SEC  
 K = 0.063 CM/SEC

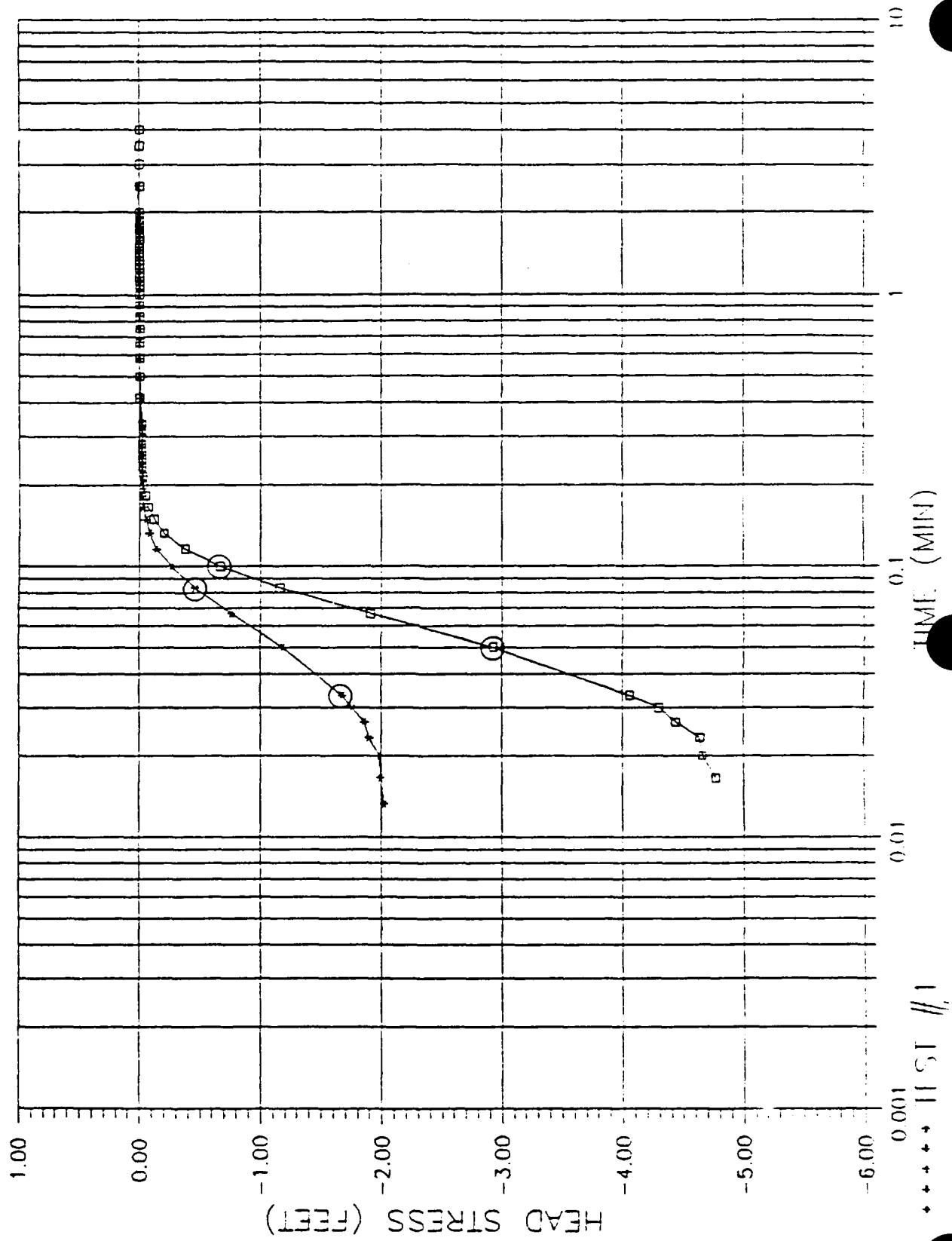
K = 0.026 CM/SEC  
 K = 0.089 CM/SEC

LOM-89-01



ooooo TEST NO. 1  
\*\*\*\*\* TEST NO. 2  
ΔΔΔΔΔ TEST NO. 3

PBN-91-12C SLUG TESTS



WELL PBN-91-12C  
 WELL DIAMETER=0.3125FT. SCREEN LENGTH=15FT. BORING DIAMETER=0.75FT

TEST 1		TEST 2	
MINUTES	FEET	MINUTES	FEET
0.0033	-0.06	0.0033	0.02
0.0066	-1.2	0.0066	0.03
0.0099	-1.66	0.0099	-2.34
0.0133	-2.02	0.0133	-4.16
0.0166	-1.99	0.0166	-4.77
0.02	-1.96	0.02	-4.66
0.0233	-1.9	0.0233	-4.64
0.0266	-1.86	0.0266	-4.44
0.03	-1.78	0.03	-4.3
0.0333	-1.66	0.0333	-4.06
0.05	-1.19	0.05	-2.93
0.0666	-0.76	0.0666	-1.91
0.0833	-0.46	0.0833	-1.16
0.1	-0.26	0.1	-0.67
0.1166	-0.14	0.1166	-0.36
0.1333	-0.06	0.1333	-0.2
0.15	-0.05	0.15	-0.12
0.1666	-0.03	0.1666	-0.07
0.1833	-0.02	0.1833	-0.05
0.2	-0.02	0.2	-0.03
0.2166	-0.02	0.2166	-0.03
0.2333	-0.02	0.2333	-0.02
0.25	-0.02	0.25	-0.02
0.2666	-0.02	0.2666	-0.02
0.2833	-0.02	0.2833	-0.02
0.3	-0.02	0.3	-0.02
0.3166	-0.02	0.3166	-0.02
0.3333	-0.02	0.3333	-0.02
0.4167	-0.01	0.4167	0
0.5	0	0.5	0
0.5833	0	0.5833	0
0.6667	0	0.6667	0
0.75	0	0.75	0
0.8333	0	0.8333	0
0.9167	0	0.9167	0
1	0	1	0
1.0833	0	1.0833	0
1.1667	0	1.1667	0
1.25	0	1.25	0
1.3333	0	1.3333	0
1.4166	0	1.4166	0
1.5	0	1.5	0
1.5833	0	1.5833	0
1.6667	0	1.6667	0
1.75	0	1.75	0
1.8333	0	1.8333	0
1.9167	0	1.9167	0
2	0	2	0
2.5	0.01	2.5	0
		3	0
		3.5	0
		4	0

Hvorslev:  
 K = 0.007 CM/SEC  
 Bouwer and Rice:  
 K = 0.033 CM/SEC

K = 0.008 CM/SEC  
 K = 0.044 CM/SEC

WELL DIAMETER=0.3106FT, WELL LOG-39-01  
 SCREEN LENGTH=15FT, BORING DIAMETER=0.75FT

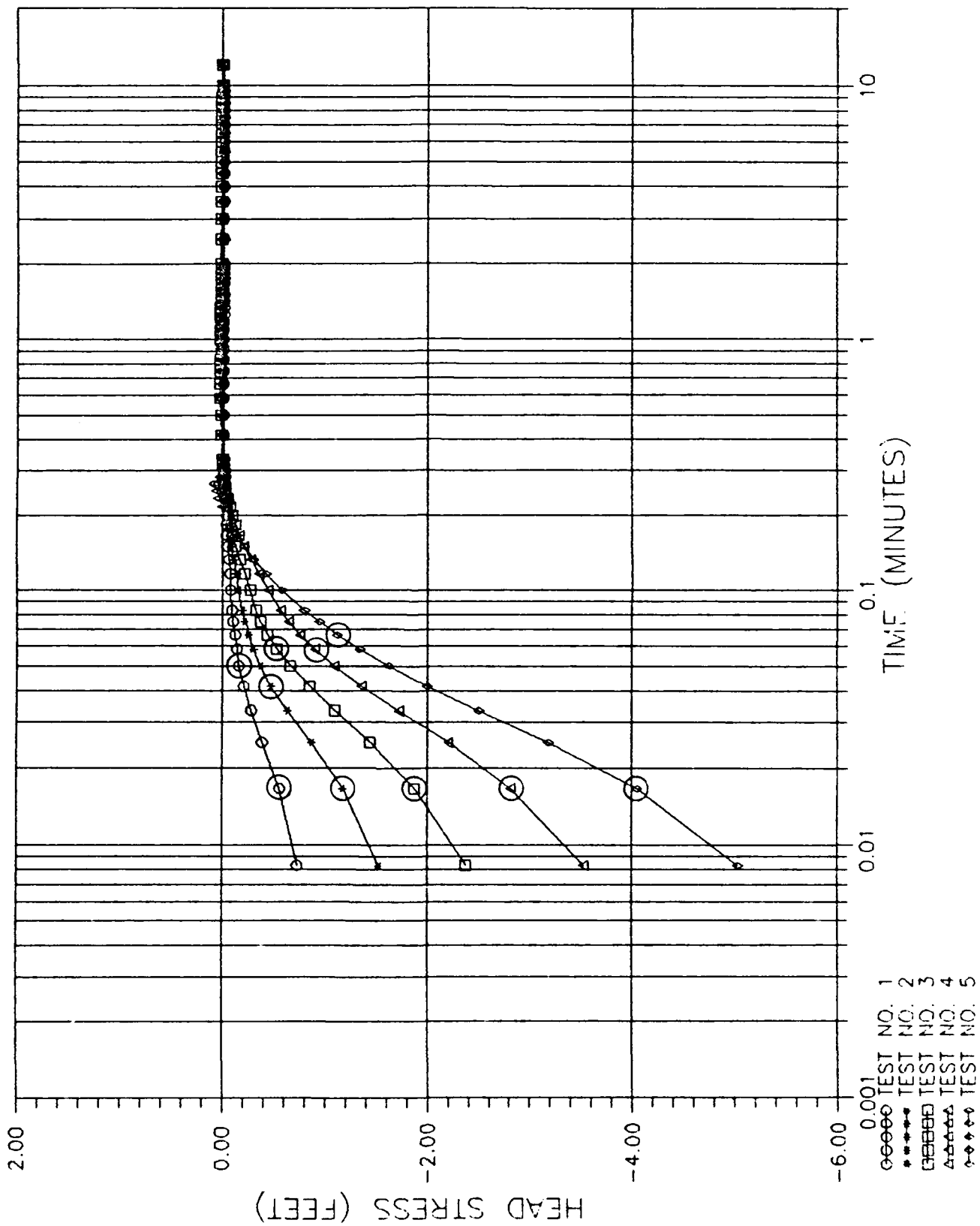
TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.008	-0.972	0.008	-1.029	0.008	-2.252
0.017	-0.644	0.017	-1.382	0.017	-1.287
0.025	-0.385	0.025	-1.018	0.025	-1.685
0.033	-0.245	0.033	-0.819	0.033	-1.470
0.042	-0.183	0.042	-0.417	0.042	-0.795
0.050	-0.139	0.050	-0.383	0.050	-0.442
0.058	-0.108	0.058	-0.328	0.058	-0.291
0.067	-0.080	0.067	-0.171	0.067	-0.209
0.075	-0.064	0.075	-0.133	0.075	-0.322
0.083	-0.051	0.083	-0.101	0.083	-0.423
0.100	-0.032	0.100	-0.064	0.100	-0.171
0.117	-0.019	0.117	-0.040	0.117	-0.025
0.133	-0.013	0.133	-0.026	0.133	-0.057
0.167	-0.007	0.150	-0.019	0.150	-0.038
0.667	0.000	0.183	-0.010	0.167	-0.028
0.750	0.000	0.300	-0.007	0.183	-0.013
0.833	0.000	0.750	0.000	0.217	-0.007
0.917	0.000	0.833	0.006	0.283	-0.013
1.000	0.000	0.917	0.000	0.300	-0.019
1.083	0.000	1.000	0.006	0.417	0.000
1.167	0.000	1.083	0.000	0.500	0.000
1.250	0.000	1.167	0.006	0.583	0.000
1.333	0.000	1.583	0.000	0.667	0.006
1.417	0.000	1.667	0.000	0.750	0.012
1.500	0.000	1.750	0.000	1.083	0.006
1.583	0.000	1.833	0.006	1.250	0.012
1.667	0.000			1.583	0.006
1.750	0.000			1.667	0.012
1.833	0.000			4.000	0.018
1.917	0.000				
2.000	0.000				
2.500	0.000				
3.000	0.000				

K=5.5E-2 CM/SEC

K=8.2E-2 CM/SEC

K=8.7E-2 CM/SEC

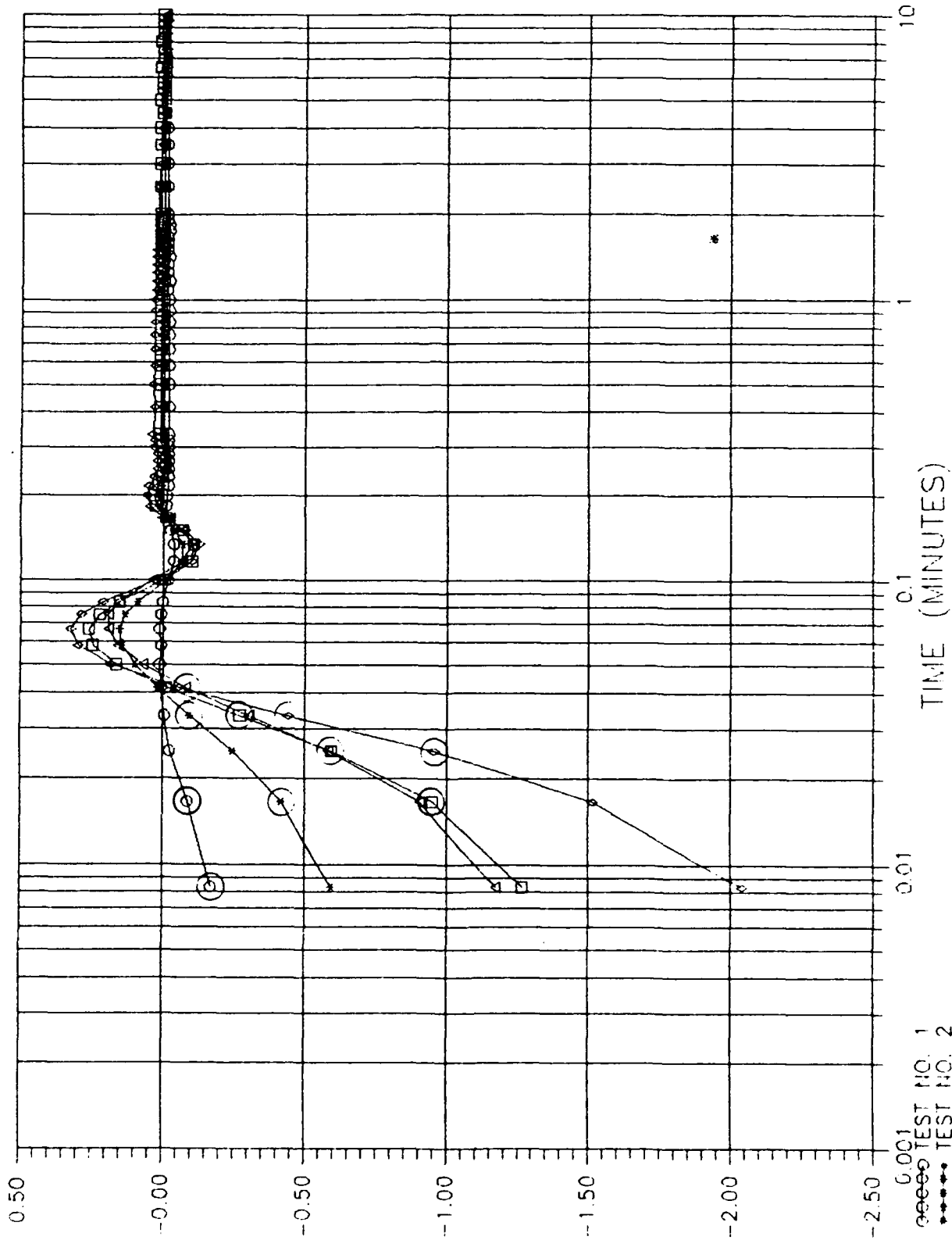
# LON-89-02B







LON-89-03B



WELL LOG-89-008  
 WELL DIAMETER=0.3185FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.76FT

TEST 1		TEST 2		TEST 3		TEST 4		TEST 5	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-0.171	0.008	-0.595	0.008	-1.257	0.008	-1.172	0.008	-2.049
0.017	-0.088	0.017	-0.418	0.017	-0.950	0.017	-0.906	0.017	-1.514
0.025	-0.025	0.025	-0.247	0.025	-0.595	0.025	-0.583	0.025	-0.956
0.033	-0.006	0.033	-0.095	0.033	-0.272	0.033	-0.304	0.033	-0.443
0.042	0.006	0.042	0.019	0.042	-0.012	0.042	-0.082	0.042	-0.057
0.050	0.012	0.050	0.101	0.050	0.164	0.050	0.069	0.050	0.183
0.058	0.006	0.058	0.145	0.058	0.247	0.058	0.158	0.058	0.297
0.067	0.012	0.067	0.152	0.067	0.259	0.067	0.190	0.067	0.323
0.075	0.006	0.075	0.133	0.075	0.221	0.083	0.152	0.075	0.285
0.083	0.000	0.083	0.088	0.083	0.152	0.100	0.038	0.083	0.209
0.100	-0.019	0.100	-0.012	0.100	-0.006	0.117	-0.069	0.100	0.025
0.117	-0.033	0.117	-0.059	0.117	-0.101	0.133	-0.101	0.117	-0.101
0.150	-0.025	0.150	-0.038	0.133	-0.107	0.150	-0.069	0.133	-0.126
0.167	-0.019	0.167	-0.012	0.150	-0.069	0.167	-0.025	0.150	-0.076
0.183	-0.012	0.183	0.012	0.167	-0.012	0.183	0.006	0.167	0.000
0.217	-0.019	0.217	0.006	0.183	0.025	0.200	0.019	0.183	0.044
1.083	-0.012	0.233	0.000	0.200	0.031	0.233	0.000	0.200	0.057
1.167	-0.019	0.250	-0.006	0.217	0.019	0.250	-0.006	0.217	0.050
1.250	-0.012	0.300	0.000	0.233	0.006	0.300	0.000	0.233	0.031
1.417	-0.019	0.333	0.006	0.250	-0.006	0.333	0.006	0.250	0.019
1.500	-0.012	0.417	0.000	0.283	0.000	1.500	0.300	0.300	0.031
1.750	-0.019	0.667	0.006	0.300	0.006	4.500	-0.006	0.333	0.033
1.917	-0.012	1.250	0.000	0.317	0.012	7.500	0.000	0.417	0.031
		1.333	0.006	4.500	0.006	10.000	-0.006	0.500	0.033
		1.750	0.000	5.000	0.012			0.583	0.031
		1.917	0.006	5.500	0.006			1.083	0.025
		2.000	0.000	6.500	0.012			1.583	0.019
		8.500	0.006	7.000	0.006			3.000	0.012
				8.000	0.012			3.500	0.006
				8.500	0.006			4.500	0.000
				12.000	0.000			5.000	0.000
				14.000	-0.006			5.500	0.000
								6.000	0.000
								6.500	-0.006
								9.500	-0.012
								12.000	-0.006

k=1.2E-1 CM/SEC

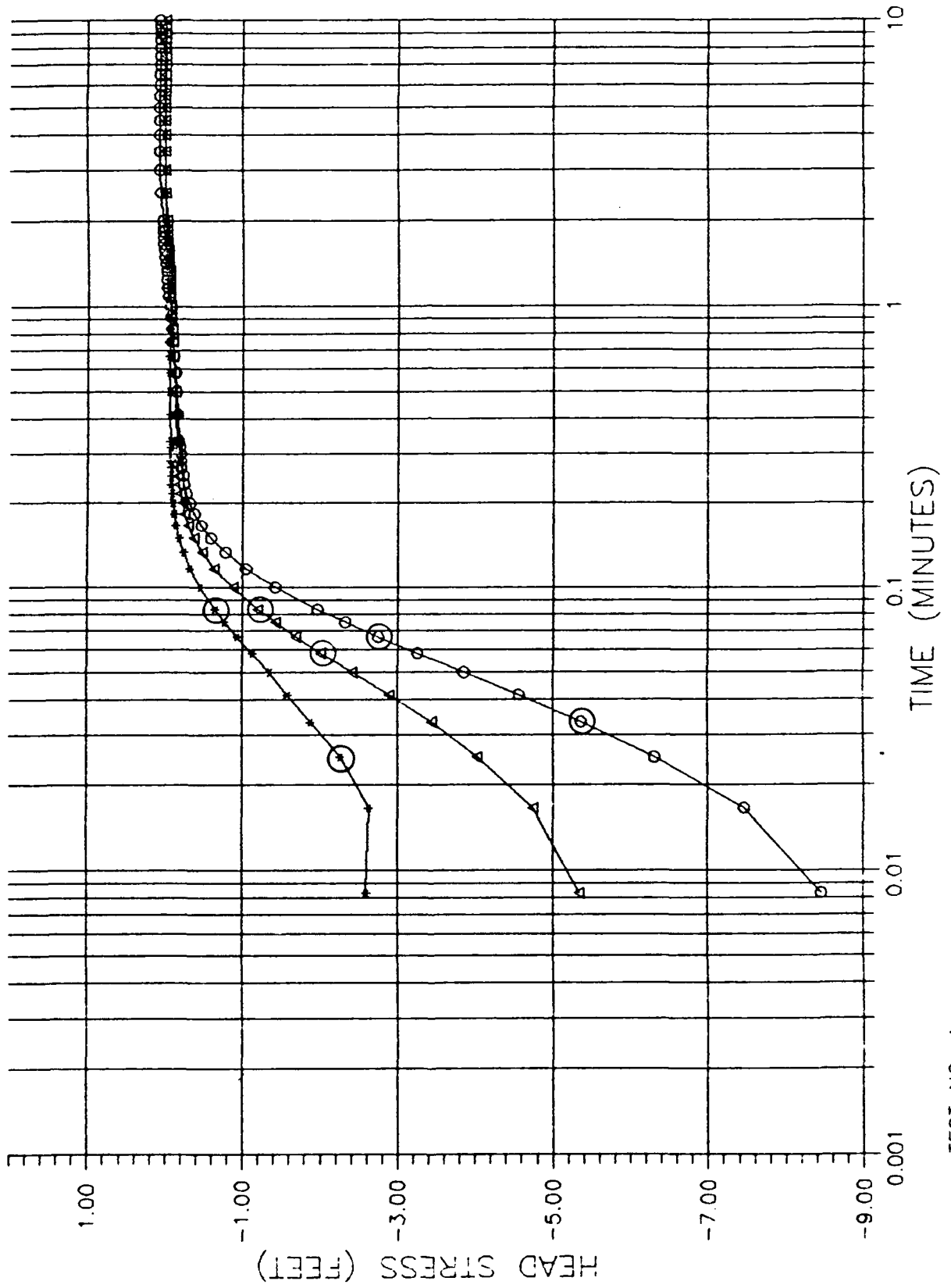
k=1.8E-1 CM/SEC

k=1.3E-1 CM/SEC

k=1.1E-1 CM/SEC

k=1.4E-1 CM/SEC

SPN-89-01C



WELL SPN-89-D1C  
 WELL DIAMETER=0.3125FT, SCREEN LENGTH=11FT, BORING DIAMETER=0.75FT

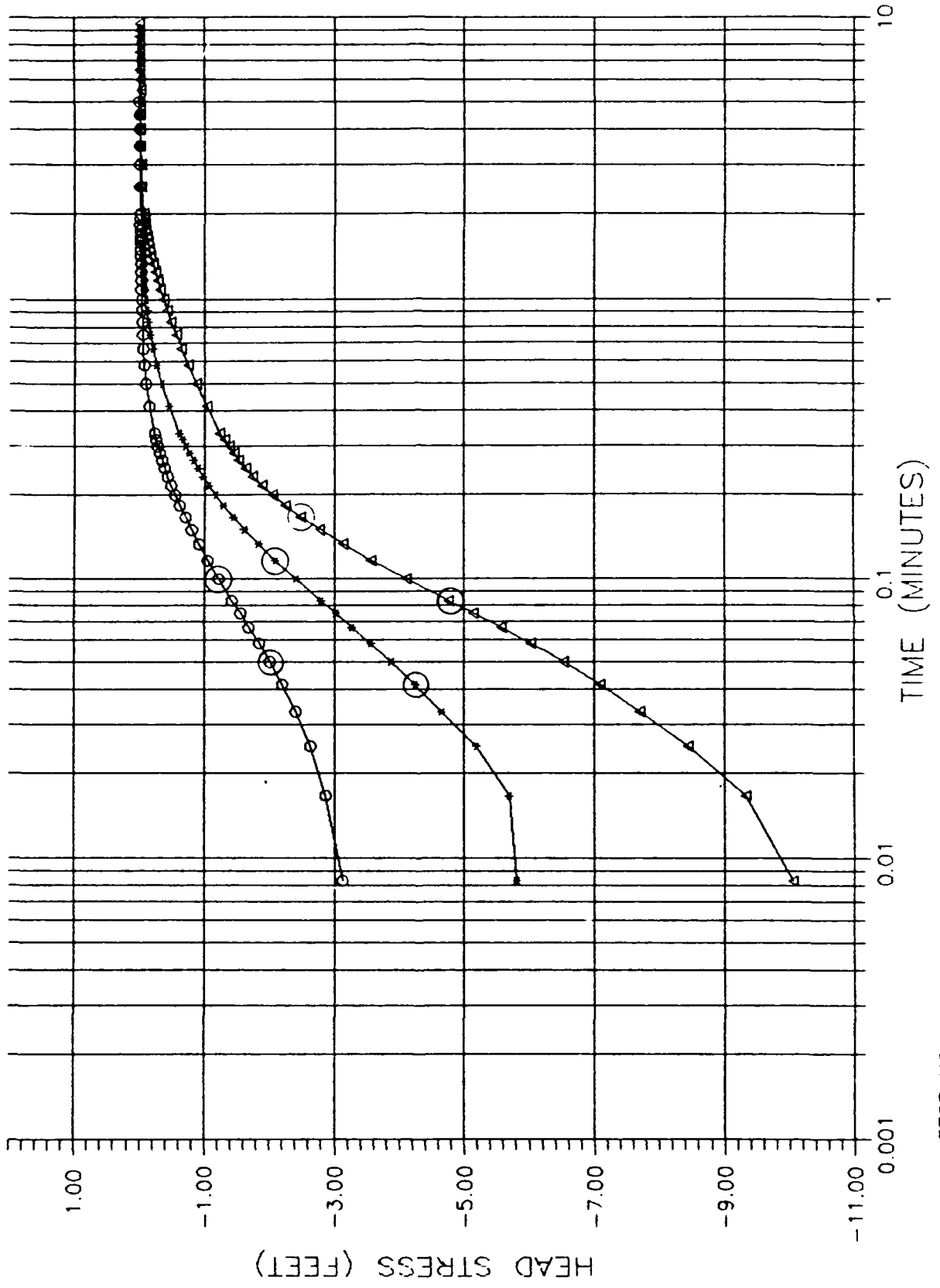
TEST 1		TEST 2		TEST 3	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-2.592	0.008	-5.335	0.008	-3.457
0.017	-2.630	0.017	-4.749	0.017	-7.461
0.025	-2.264	0.025	-4.023	0.025	-6.307
0.033	-1.879	0.033	-3.443	0.033	-5.367
0.042	-1.583	0.042	-2.901	0.042	-4.566
0.050	-1.356	0.050	-2.415	0.050	-3.859
0.058	-1.128	0.058	-2.011	0.058	-3.254
0.067	-0.927	0.067	-1.690	0.067	-2.749
0.075	-0.763	0.075	-1.431	0.075	-2.327
0.083	-0.643	0.083	-1.204	0.083	-1.967
0.100	-0.454	0.100	-0.870	0.100	-1.419
0.117	-0.321	0.117	-0.637	0.117	-1.046
0.133	-0.239	0.133	-0.479	0.133	-0.782
0.150	-0.176	0.150	-0.372	0.150	-0.586
0.167	-0.138	0.167	-0.296	0.167	-0.456
0.183	-0.113	0.183	-0.252	0.183	-0.378
0.200	-0.094	0.200	-0.214	0.200	-0.315
0.217	-0.088	0.217	-0.189	0.217	-0.271
0.233	-0.075	0.233	-0.176	0.233	-0.239
0.250	-0.069	0.250	-0.163	0.250	-0.227
0.283	-0.063	0.267	-0.151	0.267	-0.201
0.417	-0.056	0.300	-0.145	0.283	-0.189
0.500	-0.050	0.317	-0.138	0.317	-0.182
0.667	-0.044	0.417	-0.126	0.333	-0.170
0.917	-0.037	0.500	-0.119	0.417	-0.151
1.083	-0.031	0.583	-0.107	0.500	-0.138
1.167	-0.025	0.667	-0.100	0.583	-0.126
1.333	-0.018	0.750	-0.094	0.667	-0.107
1.500	-0.012	0.833	-0.081	0.750	-0.081
1.833	-0.006	0.917	-0.069	0.833	-0.075
2.500	0.000	1.083	-0.056	0.917	-0.056
3.000	-0.006	1.167	-0.050	1.000	-0.044
		1.333	-0.044	1.083	-0.031
		1.417	-0.037	1.167	-0.018
		1.500	-0.031	1.250	-0.012
		1.667	-0.025	1.333	-0.006
		1.750	-0.018	1.417	0.000
		1.833	-0.025	1.500	0.012
		2.000	-0.018	1.583	0.018
		2.500	0.000	1.667	0.025
		3.000	0.006	1.750	0.031
		3.500	0.000	1.917	0.037
				2.500	0.056
				3.000	0.059
				10.000	0.075
				11.000	0.083

K=4.1E-2 CM/SEC

K=3.9E-2 CM/SEC

K=3.8E-2 CM/SEC

# SPN-89-02B



○ ○ ○ ○ ○ TEST NO. 1  
■ ■ ■ ■ ■ TEST NO. 2  
△ △ △ △ △ TEST NO. 3

WELL GPN-89-005  
 WELL DIAMETER=0.3105FT, SCREEN LENGTH=19FT, SPRING DIAMETER=0.75FT

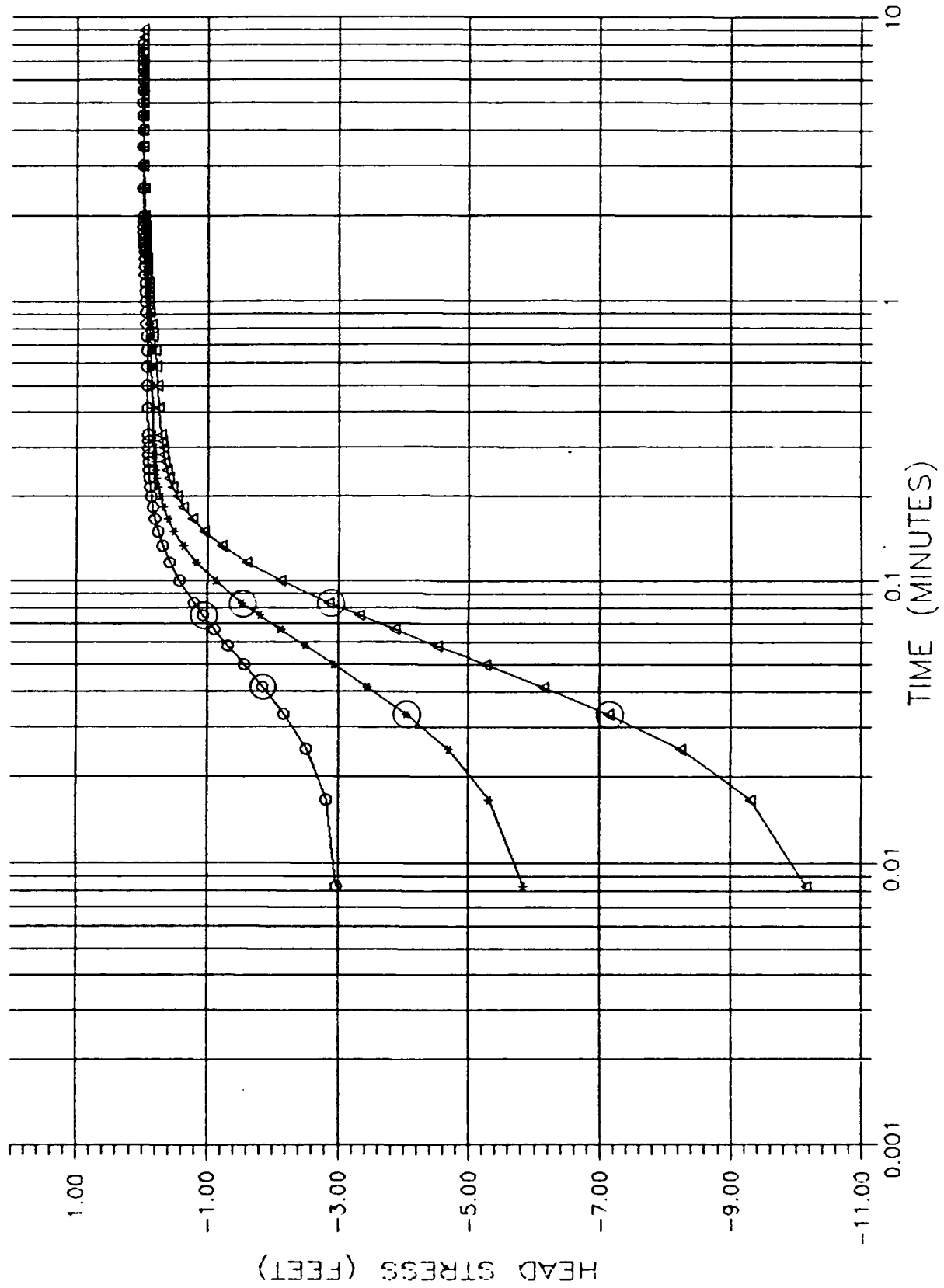
TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.008	-3.128	0.008	-5.808	0.008	0.053
0.017	-2.869	0.017	-5.695	0.017	-9.328
0.025	-2.636	0.025	-5.184	0.025	-8.457
0.033	-2.409	0.033	-4.654	0.033	-7.713
0.042	-2.201	<del>0.042</del>	<del>-4.244</del>	0.042	-7.101
<del>0.050</del>	<del>-2.011</del>	0.050	-3.878	0.050	-6.540
0.058	-1.847	0.058	-3.557	0.058	-6.029
0.067	-1.684	0.067	-3.273	0.067	-5.569
0.075	-1.557	0.075	-3.027	0.075	-5.140
0.083	-1.425	0.083	-2.794	<u>0.083</u>	<u>-4.768</u>
0.100	-1.217	0.100	-2.409	0.100	-4.112
0.117	-1.053	<del>0.117</del>	<del>-2.093</del>	0.117	-3.569
0.133	-0.914	0.133	-1.835	0.133	-3.134
0.150	-0.801	0.150	-1.614	0.150	-2.781
0.167	-0.706	0.167	-1.444	<u>0.167</u>	<u>-2.491</u>
0.183	-0.618	0.183	-1.292	0.183	-2.251
0.200	-0.548	0.200	-1.173	0.200	-2.049
0.217	-0.485	0.217	-1.065	0.217	-1.885
0.233	-0.428	0.233	-0.977	0.233	-1.747
0.250	-0.384	0.250	-0.901	0.250	-1.627
0.267	-0.346	0.267	-0.832	0.267	-1.532
0.283	-0.309	0.283	-0.769	0.283	-1.444
0.300	-0.277	0.300	-0.712	0.300	-1.374
0.317	-0.245	0.317	-0.662	0.317	-1.305
0.333	-0.227	0.333	-0.611	0.333	-1.242
0.417	-0.145	0.417	-0.454	0.417	-1.040
0.500	-0.094	0.500	-0.340	0.500	-0.876
0.583	-0.069	0.583	-0.258	0.583	-0.750
0.667	-0.050	0.667	-0.201	0.667	-0.643
0.750	-0.044	0.750	-0.157	0.750	-0.561
0.833	-0.037	0.833	-0.126	0.833	-0.485
0.917	-0.031	0.917	-0.107	0.917	-0.422
1.083	-0.025	1.000	-0.088	1.000	-0.372
1.167	-0.018	1.083	-0.075	1.083	-0.315
1.417	-0.012	1.167	-0.069	1.167	-0.277
1.833	-0.006	1.250	-0.056	1.250	-0.239
3.000	0.000	1.333	-0.050	1.333	-0.214
5.000	0.006	1.417	-0.044	1.417	-0.176
		1.583	-0.037	1.500	-0.157
		1.667	-0.031	1.583	-0.132
		1.917	-0.025	1.667	-0.113
		2.500	-0.018	1.750	-0.100
		3.000	-0.012	1.833	-0.088
		3.500	-0.006	1.917	-0.075
		5.000	-0.012	2.000	-0.069
		6.500	-0.006	2.500	-0.031
				3.000	-0.018
				3.500	-0.012
				5.500	-0.018
				6.000	-0.012
				6.500	-0.006
				7.000	-0.012
				7.500	-0.006
				8.500	-0.012
				9.000	-0.006
				9.500	-0.012

K=1.5E-2 CM/SEC

K=1.4E-2 CM/SEC

K=1.2E-2 CM/SEC

# SPN-89-02C



ooooo TEST NO. 1  
\*\*\*\*\* TEST NO. 2  
ΔΔΔΔΔ TEST NO. 3

WELL SPN-89-02C

WELL DIAMETER=0.3165FT, SCREEN LENGTH=13FT, BOPING DIAMETER=0.75FT

TEST 1		TEST 2		TEST 3	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-2.976	0.008	-5.840	0.008	0.173
0.017	-2.825	0.017	-5.316	0.017	-9.321
0.025	-2.510	0.025	-4.698	0.025	-8.243
0.033	-2.169	0.033	-4.649	0.033	-7.152
0.042	-1.847	0.042	-3.450	0.042	-6.149
0.050	-1.564	0.050	-2.932	0.050	-5.272
0.058	-1.318	0.058	-2.497	0.058	-4.522
0.067	-1.110	0.067	-2.125	0.067	-3.878
0.075	-0.939	0.075	-1.803	0.075	-3.330
0.083	-0.794	0.083	-1.532	0.083	-2.863
0.100	-0.573	0.100	-1.122	0.100	-2.125
0.117	-0.416	0.117	-0.826	0.117	-1.602
0.133	-0.309	0.133	-0.630	0.133	-1.223
0.150	-0.239	0.150	-0.485	0.150	-0.952
0.167	-0.189	0.167	-0.391	0.167	-0.763
0.183	-0.157	0.183	-0.321	0.183	-0.624
0.200	-0.132	0.200	-0.277	0.200	-0.529
0.217	-0.113	0.217	-0.239	0.217	-0.460
0.233	-0.100	0.233	-0.214	0.233	-0.409
0.250	-0.094	0.250	-0.201	0.250	-0.372
0.267	-0.088	0.267	-0.182	0.267	-0.340
0.283	-0.081	0.283	-0.170	0.283	-0.321
0.333	-0.075	0.317	-0.157	0.300	-0.309
0.417	-0.069	0.417	-0.145	0.317	-0.296
0.500	-0.063	0.500	-0.132	0.333	-0.283
0.583	-0.056	0.583	-0.119	0.417	-0.252
0.750	-0.050	0.750	-0.100	0.500	-0.227
0.833	-0.044	0.833	-0.094	0.583	-0.208
0.917	-0.037	0.917	-0.081	0.667	-0.195
1.000	-0.031	1.000	-0.075	0.750	-0.157
1.250	-0.025	1.083	-0.069	0.833	-0.126
1.417	-0.018	1.167	-0.063	0.917	-0.100
1.583	-0.012	1.250	-0.056	1.000	-0.088
1.750	-0.006	1.333	-0.050	1.083	-0.081
2.500	0.000	1.417	-0.044	1.167	-0.075
4.500	0.006	1.583	-0.037	1.250	-0.069
		1.750	-0.031	1.333	-0.063
		1.833	-0.025	1.417	-0.056
		2.500	-0.012	1.500	-0.050
		3.000	-0.006	1.667	-0.044
		3.500	0.000	1.750	-0.037
		4.000	-0.006	1.917	-0.031
				2.500	-0.018
				3.000	-0.012
				4.500	-0.006

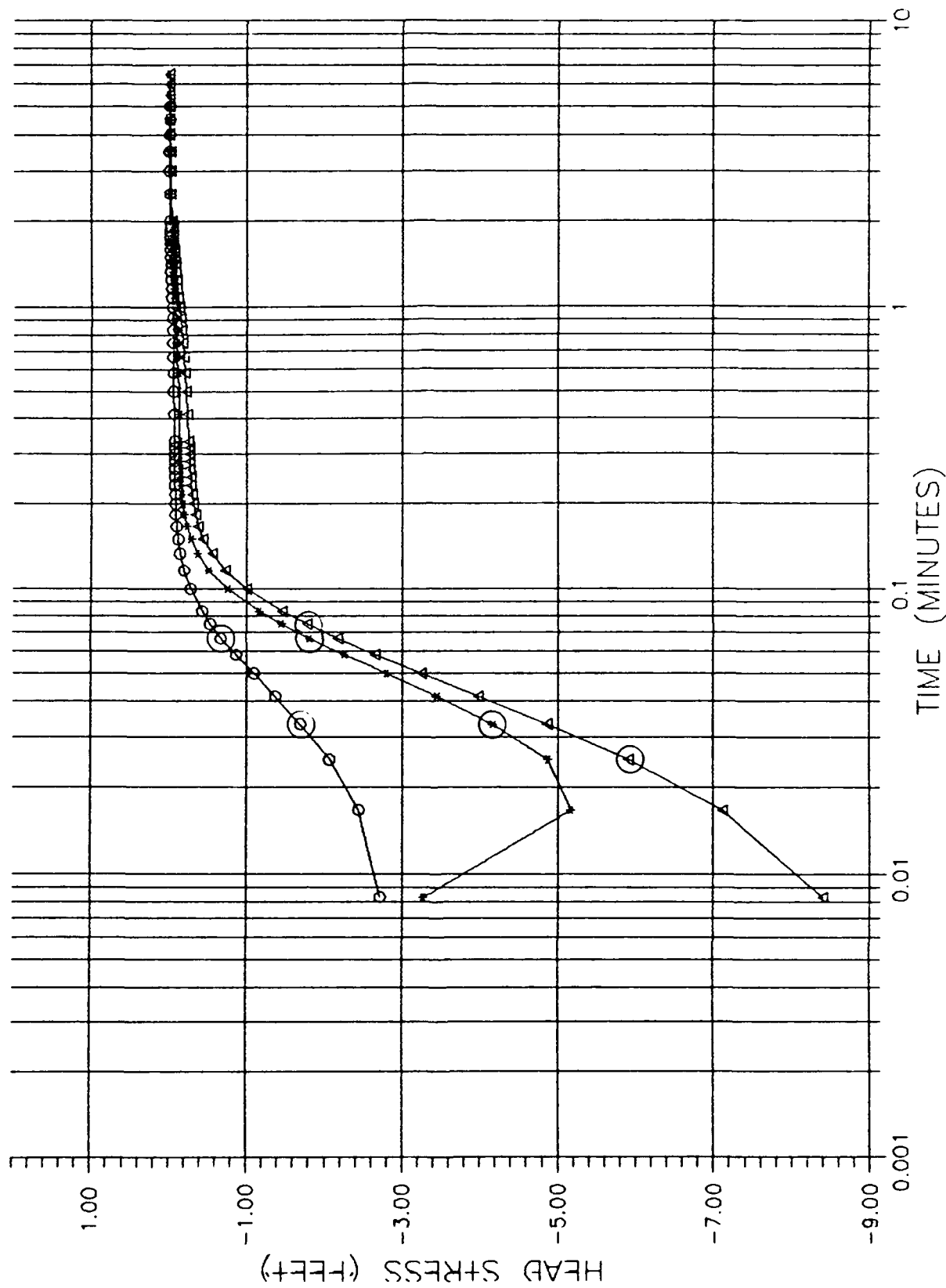
K=3.4E-2 CM/SEC

K=3.2E-2 CM/SEC

K=3.0E-2 CM/SEC



# SPN-89-03B



ooooo TEST NO. 1  
\*\*\*\*\* TEST NO. 2  
ΔΔΔΔΔ TEST NO. 3

WELL SPN-89-03E

WELL DIAMETER=0.3155FT, SCREEN LENGTH=11FT, BOPING DIAMETER=0.75FT

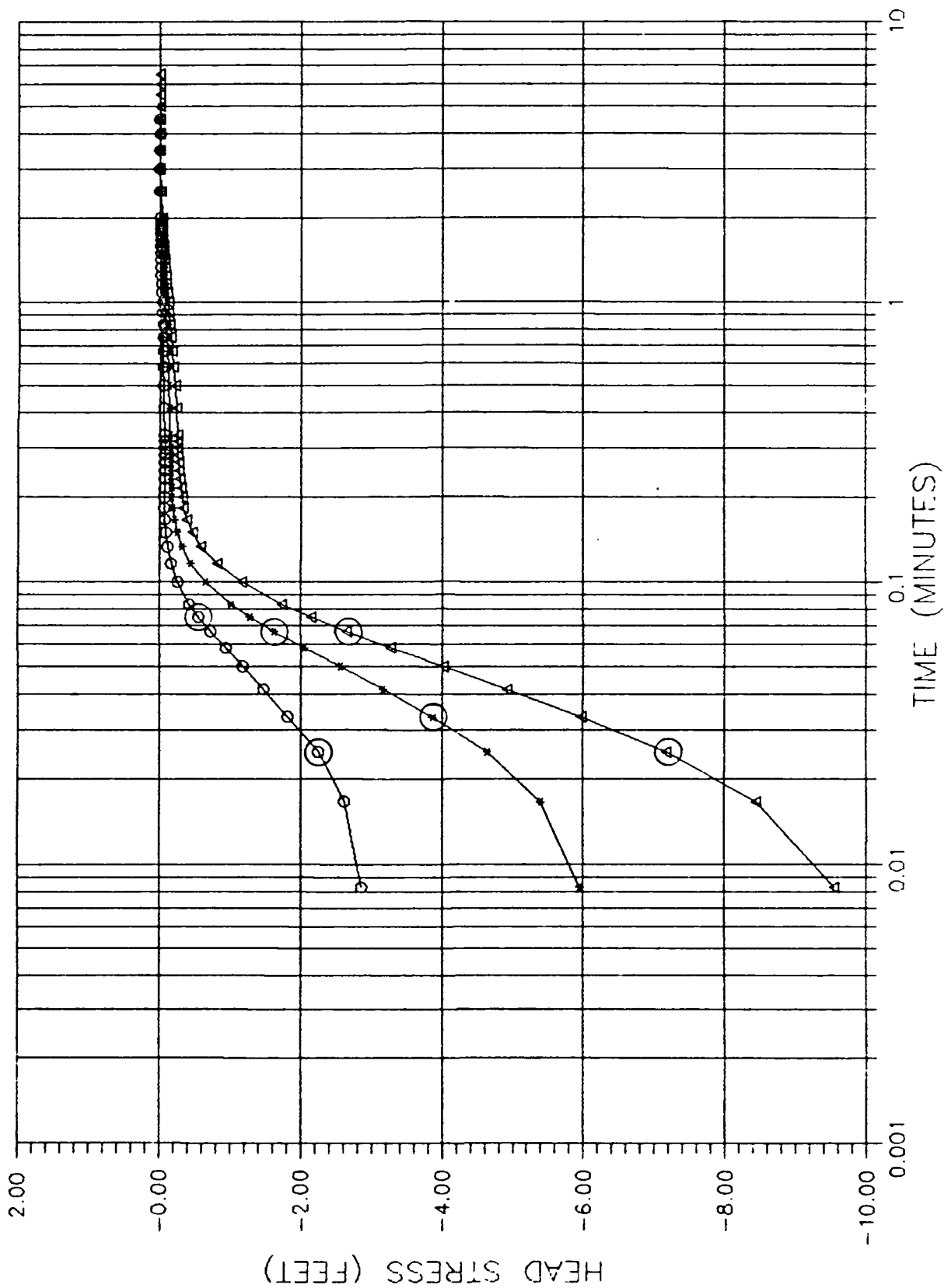
TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.008	-2.718	0.008	-3.273	0.008	-8.401
0.017	-2.440	0.017	-5.171	0.017	-7.120
0.025	-2.062	0.025	-4.875	0.025	-5.909
0.033	-1.690	0.033	-4.162	0.033	-4.862
0.042	-1.368	0.042	-3.443	0.042	-3.979
0.050	-1.097	0.050	-2.794	0.050	-3.254
0.058	-0.864	0.058	-2.251	0.058	-2.649
0.067	-0.674	0.067	-1.810	0.067	-2.169
0.075	-0.529	0.075	-1.444	0.075	-1.772
0.083	-0.428	0.083	-1.160	0.083	-1.456
0.100	-0.277	0.100	-0.756	0.100	-1.002
0.117	-0.189	0.117	-0.510	0.117	-0.725
0.133	-0.138	0.133	-0.365	0.133	-0.548
0.150	-0.113	0.150	-0.283	0.150	-0.441
0.167	-0.094	0.167	-0.227	0.167	-0.378
0.183	-0.081	0.183	-0.195	0.183	-0.334
0.217	-0.075	0.200	-0.176	0.200	-0.315
0.233	-0.069	0.217	-0.157	0.217	-0.296
0.417	-0.063	0.233	-0.151	0.233	-0.283
0.500	-0.056	0.250	-0.145	0.250	-0.277
0.667	-0.050	0.283	-0.138	0.267	-0.271
0.833	-0.044	0.317	-0.132	0.283	-0.264
0.917	-0.037	0.417	-0.126	0.300	-0.258
1.083	-0.031	0.500	-0.119	0.333	-0.252
1.250	-0.025	0.583	-0.113	0.417	-0.239
1.333	-0.018	0.667	-0.100	0.500	-0.220
1.417	-0.025	0.750	-0.094	0.583	-0.201
1.500	-0.018	0.833	-0.088	0.667	-0.182
1.750	-0.012	0.917	-0.075	0.750	-0.170
2.000	-0.006	1.000	-0.069	0.833	-0.151
3.000	0.000	1.083	-0.063	0.917	-0.138
4.000	-0.006	1.167	-0.056	1.000	-0.126
		1.250	-0.050	1.083	-0.113
		1.333	-0.044	1.167	-0.100
		1.417	-0.037	1.250	-0.094
		1.583	-0.031	1.333	-0.088
		1.750	-0.025	1.417	-0.075
		1.917	-0.018	1.500	-0.069
		2.500	-0.012	1.583	-0.063
		3.500	-0.006	1.667	-0.056
		5.500	0.000	1.750	-0.050
		6.000	-0.006	1.917	-0.044
		6.500	0.000	2.000	-0.037
				2.500	-0.025
				3.000	-0.018
				4.000	-0.012
				6.000	-0.006
				6.500	-0.012

K=4.2E-2 CM/SEC

K=3.8E-2 CM/SEC

K=3.6E-2 CM/SEC

# SPN-89-03C



○ ○ ○ ○ ○ TEST NO. 1  
\* \* \* \* \* TEST NO. 2  
△ △ △ △ △ TEST NO. 3

WELL SPN-89-03C  
 WELL DIAMETER=0.3125FT, SCREEN LENGTH=11FT, BORING DIAMETER=0.75FT

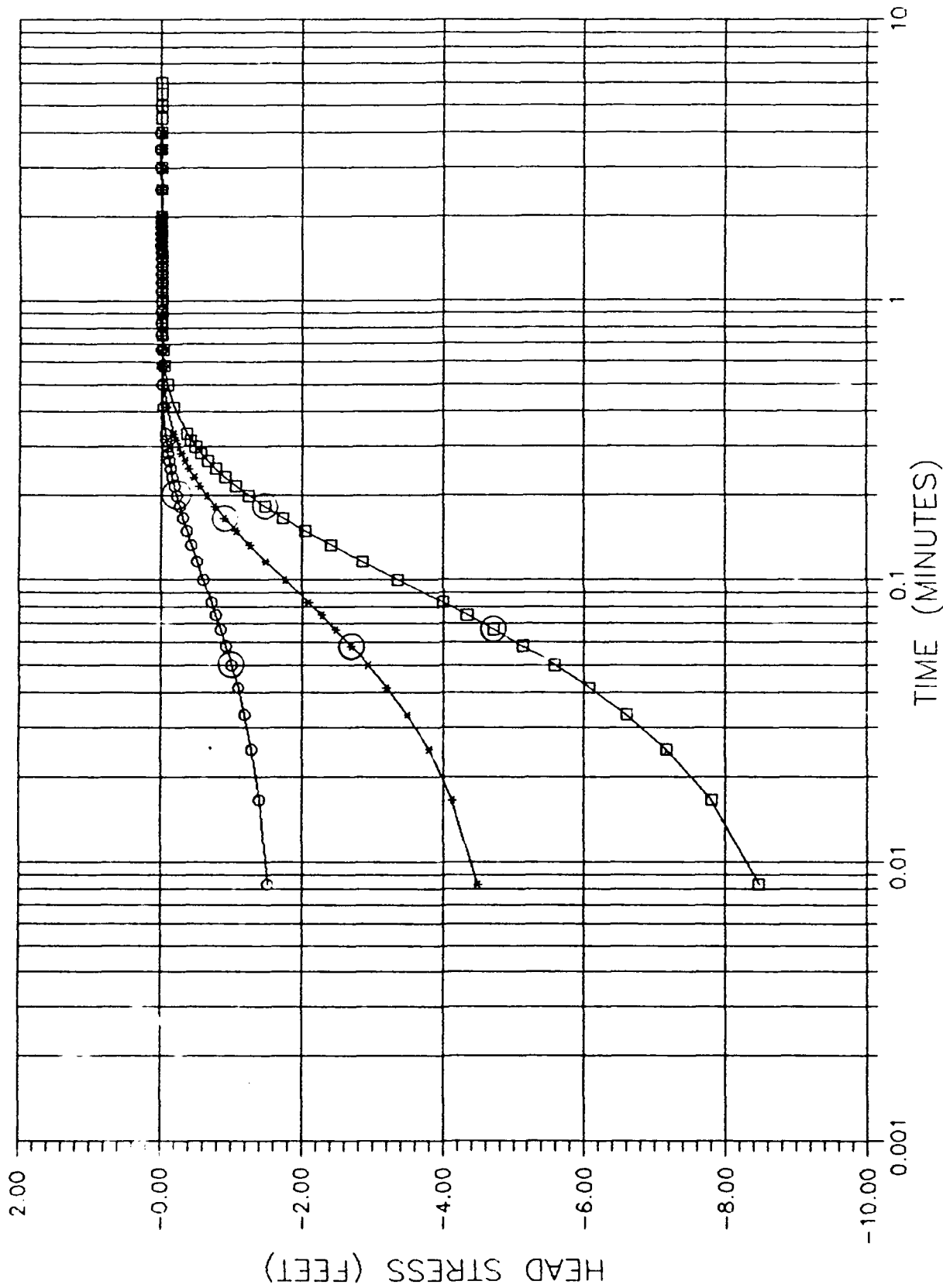
TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.008	-2.857	0.008	-5.947	0.008	-9.549
0.017	-2.617	0.017	-5.398	0.017	-8.445
0.025	-2.251	0.025	-4.642	0.025	-7.171
0.033	-1.816	0.033	-3.872	0.033	-5.979
0.042	-1.475	0.042	-3.166	0.042	-4.925
0.050	-1.179	0.050	-2.560	0.050	-4.023
0.058	-0.939	0.058	-2.049	0.058	-3.273
0.067	-0.731	0.067	-1.627	0.067	-2.655
0.075	-0.561	0.075	-1.286	0.075	-2.150
0.083	-0.428	0.083	-1.021	0.083	-1.747
0.100	-0.258	0.100	-0.655	0.100	-1.166
0.117	-0.163	0.117	-0.441	0.117	-0.813
0.133	-0.113	0.133	-0.321	0.133	-0.592
0.150	-0.088	0.150	-0.252	0.150	-0.466
0.167	-0.075	0.167	-0.214	0.167	-0.384
0.183	-0.069	0.183	-0.189	0.183	-0.340
0.217	-0.063	0.200	-0.176	0.200	-0.315
0.417	-0.056	0.217	-0.170	0.217	-0.296
0.500	-0.050	0.233	-0.163	0.233	-0.283
0.583	-0.044	0.250	-0.157	0.250	-0.271
0.750	-0.037	0.283	-0.151	0.267	-0.264
0.917	-0.031	0.317	-0.145	0.283	-0.258
1.083	-0.025	0.417	-0.138	0.317	-0.252
1.250	-0.018	0.500	-0.126	0.417	-0.233
1.500	-0.012	0.583	-0.113	0.500	-0.214
1.833	-0.006	0.667	-0.107	0.583	-0.195
2.500	0.000	0.750	-0.094	0.667	-0.176
4.000	-0.006	0.833	-0.088	0.750	-0.157
4.500	0.000	0.917	-0.075	0.833	-0.145
		1.000	-0.069	0.917	-0.126
		1.083	-0.063	1.000	-0.113
		1.167	-0.056	1.083	-0.107
		1.250	-0.044	1.167	-0.094
		1.417	-0.037	1.250	-0.081
		1.500	-0.031	1.333	-0.075
		1.583	-0.025	1.417	-0.063
		1.833	-0.018	1.500	-0.056
		2.000	-0.012	1.583	-0.050
		2.500	-0.006	1.667	-0.044
		3.000	0.000	1.750	-0.037
				1.833	-0.031
				2.500	-0.012
				3.000	-0.006
				4.500	0.000
				5.500	-0.006
				6.000	0.000

K=5.2E-2 CM/SEC

K=4.9E-2 CM/SEC

K=4.6E-2 CM/SEC

# SPN-89-04B



oooo TEST NO. 1  
\*\*\*\*\* TEST NO. 2  
ooooo TEST NO. 3

WELL GPN-22-04E

WELL DIAMETER=0.100FT SCREEN LENGTH=11FT. BORING DIAMETER=0.75FT

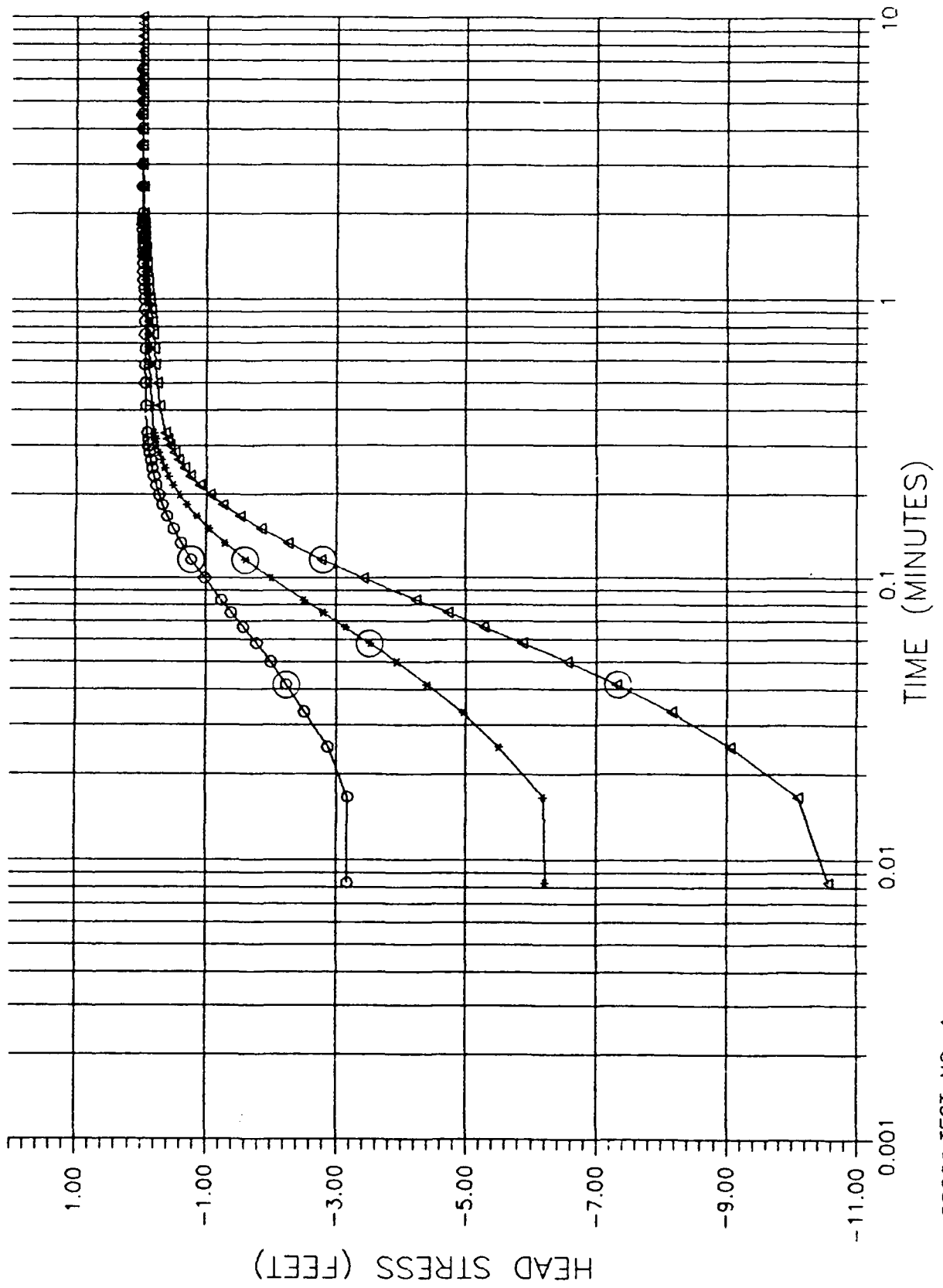
TEST 1		TEST 2		TEST 3	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.006	-1.514	0.008	-4.493	0.006	-8.473
0.017	-1.439	0.017	-4.132	0.017	-7.891
0.025	-1.292	0.025	-3.898	0.025	-7.167
0.033	-1.191	0.033	-3.491	0.033	-6.597
0.042	-1.096	0.042	-3.200	0.042	-6.071
0.050	-1.007	0.050	-2.940	0.050	-5.583
0.058	-0.925	0.058	-2.699	0.058	-5.133
0.067	-0.849	0.067	-2.477	0.067	-4.721
0.075	-0.779	0.075	-2.275	0.075	-4.341
0.083	-0.716	0.083	-2.091	0.083	-3.992
0.100	-0.608	0.100	-1.763	0.100	-3.371
0.117	-0.513	0.117	-1.489	0.117	-2.858
0.133	-0.430	0.133	-1.261	0.133	-2.420
0.150	-0.367	0.150	-1.064	0.150	-2.047
0.167	-0.310	0.167	-0.899	0.167	-1.736
0.183	-0.266	0.183	-0.766	0.183	-1.476
0.200	-0.221	0.200	-0.646	0.200	-1.243
0.217	-0.190	0.217	-0.551	0.217	-1.064
0.233	-0.155	0.233	-0.468	0.233	-0.912
0.250	-0.133	0.250	-0.392	0.250	-0.773
0.267	-0.114	0.267	-0.335	0.267	-0.659
0.283	-0.095	0.283	-0.285	0.283	-0.564
0.300	-0.082	0.300	-0.247	0.300	-0.487
0.317	-0.069	0.317	-0.202	0.317	-0.418
0.333	-0.057	0.333	-0.171	0.333	-0.361
0.417	-0.025	0.417	-0.082	0.417	-0.183
0.500	-0.012	0.500	-0.031	0.500	-0.095
0.583	-0.006	0.583	-0.006	0.583	-0.044
0.667	0.000	0.667	0.000	0.667	-0.025
3.000	0.005	0.750	0.005	0.750	-0.019
		0.917	0.000	0.833	-0.012
		1.667	-0.006	1.000	-0.006
				1.250	-0.012
				1.333	-0.006
				1.500	-0.012
				1.750	-0.006
				1.833	-0.012
				3.000	-0.006
				3.500	-0.012
				4.500	-0.006
				5.000	-0.012
				5.500	-0.006

K=1.9E-2 CM/SEC

K=1.9E-2 CM/SEC

K=1.8E-2 CM/SEC

# SPN-89-04C



○ TEST NO. 1  
△ TEST NO. 2  
□ TEST NO. 3

WELL SPN-89-04C

WELL DIAMETER=0.3125FT, SCREEN LENGTH=11FT, BORING DIAMETER=0.75FT

TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.008	-3.178	0.008	-6.218	0.008	-10.570
0.017	-3.172	0.017	-6.181	0.017	-10.085
0.025	-2.876	0.025	-5.506	0.025	-9.063
0.033	-2.516	0.033	-4.951	0.033	-8.155
0.042	-2.239	0.042	-4.396	0.042	-7.302
0.050	-1.999	0.050	-3.929	0.050	-6.546
0.058	-1.778	0.058	-3.519	0.058	-5.871
0.067	-1.576	0.067	-3.140	0.067	-5.266
0.075	-1.393	0.075	-2.812	0.075	-4.717
0.083	-1.242	0.083	-2.516	0.083	-4.238
0.100	-0.983	0.100	-2.005	0.100	-3.424
0.117	-0.775	0.117	-1.614	0.117	-2.781
0.133	-0.618	0.133	-1.292	0.133	-2.264
0.150	-0.498	0.150	-1.046	0.150	-1.854
0.167	-0.397	0.167	-0.857	0.167	-1.520
0.183	-0.321	0.183	-0.700	0.183	-1.261
0.200	-0.264	0.200	-0.580	0.200	-1.053
0.217	-0.220	0.217	-0.485	0.217	-0.889
0.233	-0.189	0.233	-0.409	0.233	-0.756
0.250	-0.157	0.250	-0.353	0.250	-0.649
0.267	-0.138	0.267	-0.309	0.267	-0.567
0.283	-0.119	0.283	-0.271	0.283	-0.504
0.300	-0.107	0.300	-0.239	0.300	-0.447
0.317	-0.100	0.317	-0.220	0.317	-0.409
0.333	-0.088	0.333	-0.195	0.333	-0.372
0.417	-0.069	0.417	-0.157	0.417	-0.283
0.500	-0.056	0.500	-0.126	0.500	-0.233
0.583	-0.050	0.583	-0.113	0.583	-0.201
0.750	-0.044	0.667	-0.100	0.667	-0.182
0.833	-0.037	0.750	-0.088	0.750	-0.163
1.000	-0.031	0.833	-0.081	0.833	-0.145
1.167	-0.025	0.917	-0.075	0.917	-0.132
1.333	-0.018	1.000	-0.063	1.000	-0.119
1.500	-0.012	1.083	-0.056	1.083	-0.100
1.750	-0.006	1.167	-0.050	1.167	-0.094
2.500	0.000	1.250	-0.044	1.250	-0.081
		1.417	-0.037	1.333	-0.075
		1.500	-0.031	1.417	-0.063
		1.667	-0.025	1.500	-0.056
		1.833	-0.018	1.583	-0.050
		2.000	-0.012	1.667	-0.044
		2.500	-0.006	1.833	-0.037
		3.500	0.000	1.917	-0.031
				2.000	-0.025
				2.500	-0.018
				3.000	-0.012
				3.500	-0.006
				4.000	0.000
				4.500	-0.006
				5.000	0.000

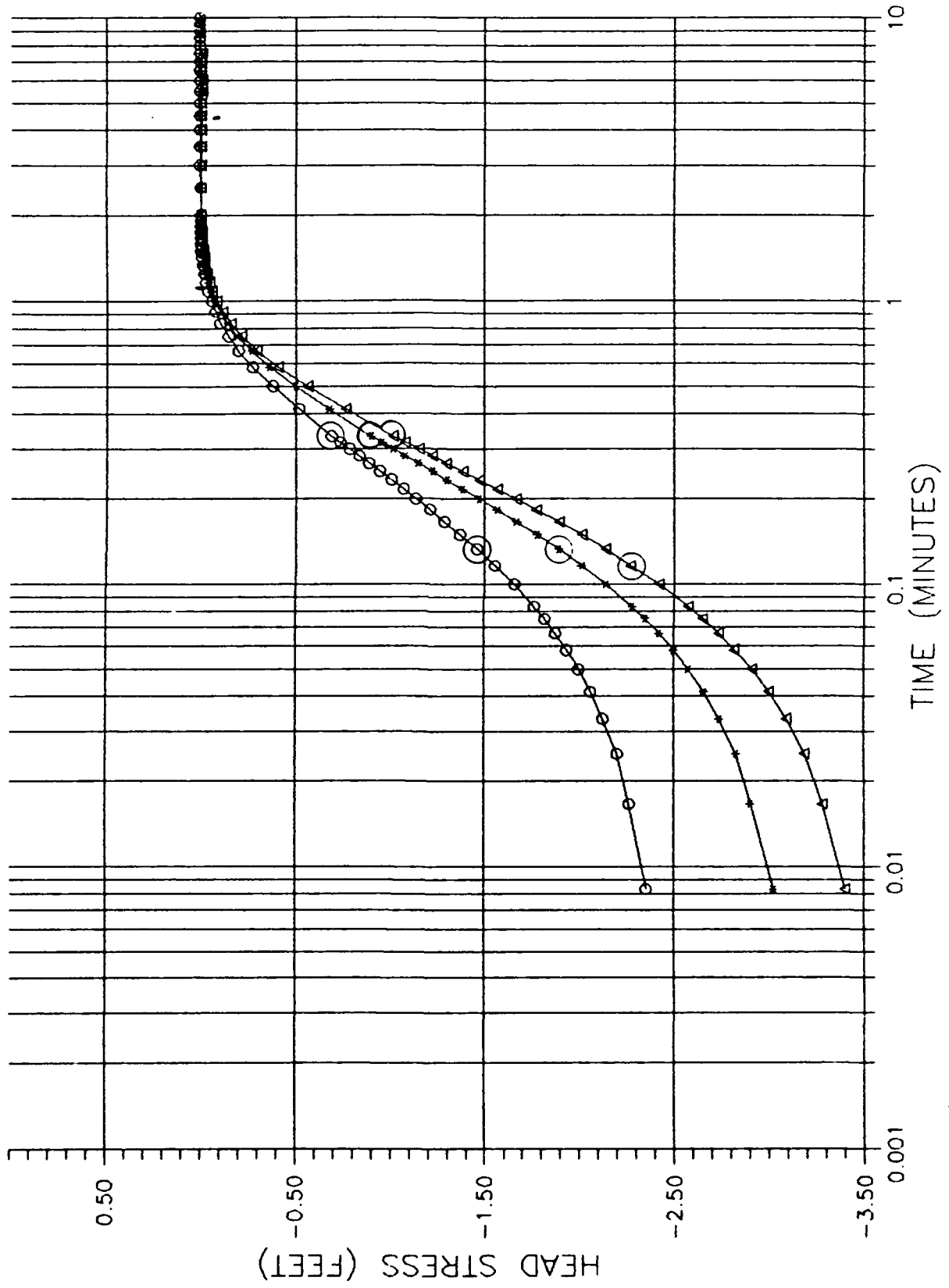
K=2.6E-2 CM/SEC

K=2.5E-2 CM/SEC

K=2.4E-2 CM/SEC



S1103



WELL 91103  
 WELL DIAMETER=0 3106FT. SCREEN LENGTH=10FT. BORING DIAMETER=0 76FT

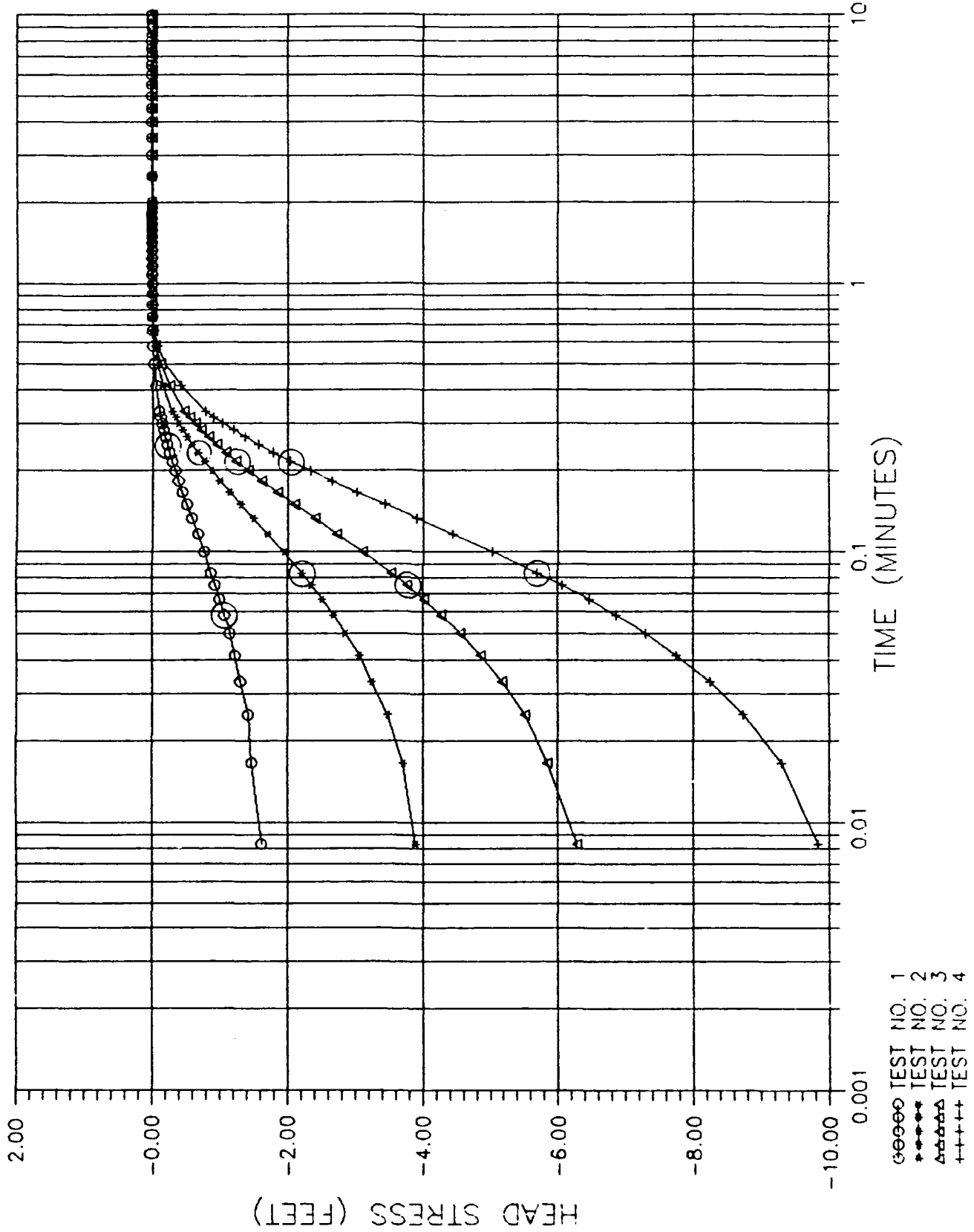
TEST 1		TEST 2		TEST 3	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-2.351	0.008	-3.022	0.008	-3.396
0.017	-2.262	0.017	-2.962	0.017	-2.292
0.025	-2.199	0.025	-2.826	0.025	-3.137
0.033	-2.123	0.033	-2.737	0.033	-3.092
0.042	-2.059	0.042	-2.655	0.042	-2.997
0.050	-1.996	0.050	-2.573	0.050	-2.998
0.058	-1.932	0.058	-2.497	0.058	-2.820
0.067	-1.875	0.067	-2.420	0.067	-2.737
0.075	-1.818	0.075	-2.344	0.075	-2.649
0.083	-1.761	0.083	-2.275	0.083	-2.573
0.100	-1.654	0.100	-2.135	0.100	-2.414
0.117	-1.552	0.117	-2.009	0.117	-2.266
0.133	-1.457	0.133	-1.888	0.133	-2.135
0.150	-1.368	0.150	-1.774	0.150	-2.009
0.167	-1.286	0.167	-1.666	0.167	-1.888
0.183	-1.210	0.183	-1.565	0.183	-1.774
0.200	-1.134	0.200	-1.470	0.200	-1.666
0.217	-1.071	0.217	-1.381	0.217	-1.565
0.233	-1.007	0.233	-1.299	0.233	-1.470
0.250	-0.944	0.250	-1.223	0.250	-1.381
0.267	-0.887	0.267	-1.147	0.267	-1.299
0.283	-0.836	0.283	-1.077	0.283	-1.223
0.300	-0.785	0.300	-1.014	0.300	-1.153
0.317	-0.735	0.317	-0.956	0.317	-1.077
0.333	-0.690	0.333	-0.899	0.333	-1.014
0.417	-0.519	0.417	-0.678	0.417	-0.766
0.500	-0.380	0.500	-0.500	0.500	-0.564
0.583	-0.272	0.583	-0.361	0.583	-0.411
0.667	-0.196	0.667	-0.266	0.667	-0.297
0.750	-0.145	0.750	-0.190	0.750	-0.215
0.833	-0.101	0.833	-0.139	0.833	-0.153
0.917	-0.076	0.917	-0.101	0.917	-0.114
1.000	-0.057	1.000	-0.069	1.000	-0.082
1.083	-0.038	1.083	-0.050	1.083	-0.057
1.167	-0.025	1.167	-0.038	1.167	-0.044
1.250	-0.019	1.250	-0.025	1.250	-0.031
1.333	-0.012	1.333	-0.019	1.333	-0.019
1.417	-0.006	1.417	-0.012	1.500	-0.012
1.500	0.000	1.500	-0.006	1.583	-0.006
1.667	0.006	1.667	0.000	1.833	0.000
		3.000	0.006	5.500	-0.006
		10.000	0.000	6.500	0.000
				7.500	-0.006

K=7.6E-3 CM/SEC

K=7.5E-3 CM/SEC

K=7.5E-3 CM/SEC

S1106



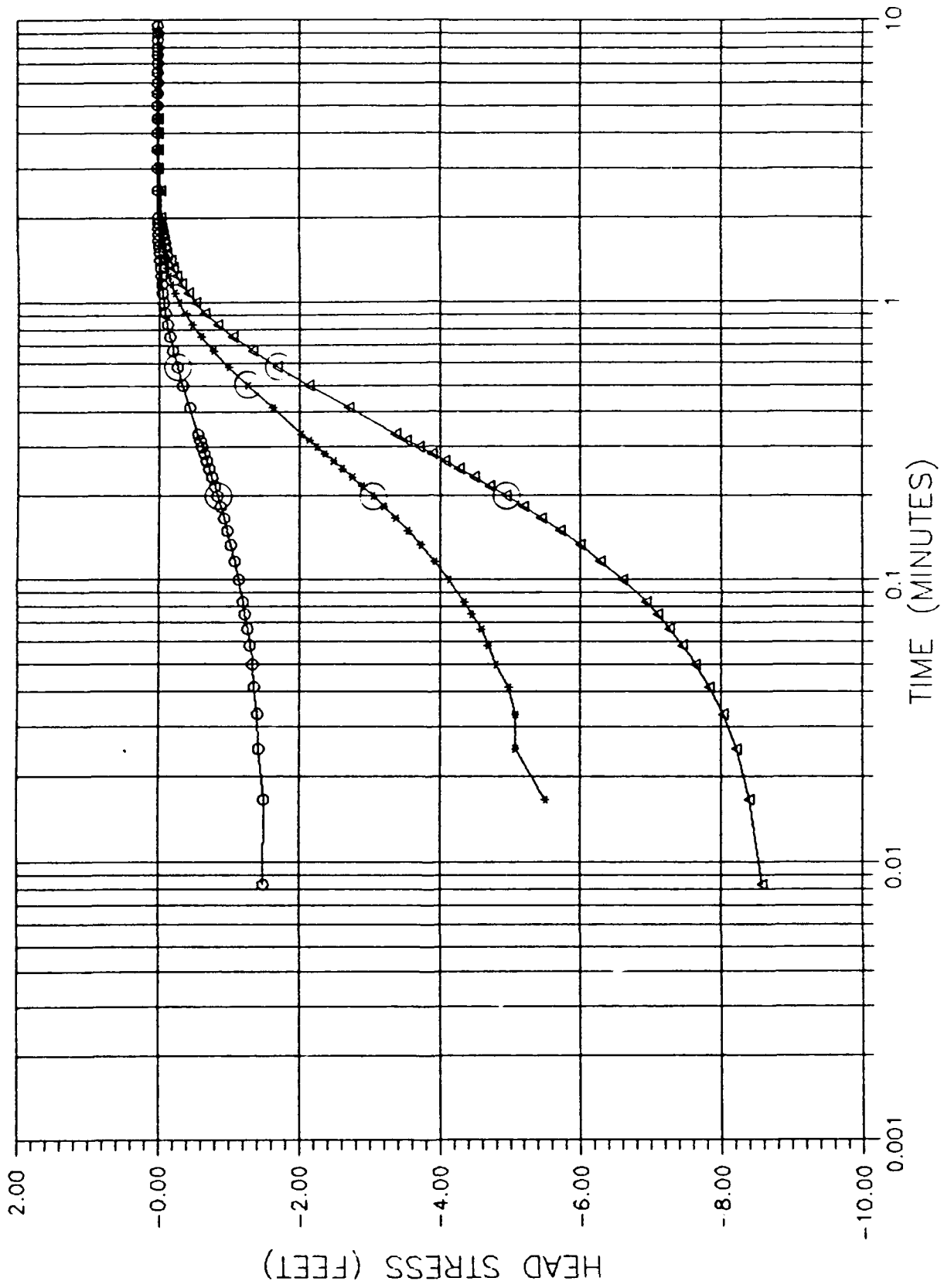
WELL 31106

WELL DIAMETER=0.2125 FT, SCREEN LENGTH=10.5 FT, BOREING DIAMETER=0.745 FT

TEST 1		TEST 2		TEST 3		TEST 4	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-1.616	0.008	-3.891	0.008	-6.274	0.008	-9.829
0.017	-1.476	0.017	-3.713	0.017	-6.836	0.017	-9.393
0.025	-1.419	0.025	-3.479	0.025	-6.513	0.025	-8.732
0.033	-1.305	0.033	-3.244	0.033	-6.171	0.033	-8.238
0.042	-1.223	0.042	-3.067	0.042	-4.854	0.042	-7.744
0.050	-1.153	0.050	-2.858	0.050	-4.563	0.050	-7.294
0.058	-1.071	0.058	-2.637	0.058	-4.277	0.058	-6.857
0.067	-1.001	0.067	-2.516	0.067	-4.018	0.067	-6.451
0.075	-0.937	0.075	-2.357	0.075	-3.770	0.075	-6.065
0.083	-0.874	0.083	-2.218	0.083	-3.536	0.083	-5.697
0.100	-0.766	0.100	-1.945	0.100	-3.111	0.100	-5.032
0.117	-0.671	0.117	-1.704	0.117	-2.731	0.117	-4.436
0.133	-0.583	0.133	-1.495	0.133	-2.401	0.133	-3.910
0.150	-0.507	0.150	-1.311	0.150	-2.110	0.150	-3.441
0.167	-0.443	0.167	-1.147	0.167	-1.850	0.167	-3.023
0.183	-0.386	0.183	-1.001	0.183	-1.622	0.183	-2.655
0.200	-0.335	0.200	-0.890	0.200	-1.419	0.200	-2.332
0.217	-0.291	0.217	-0.773	0.217	-1.242	0.217	-2.047
0.233	-0.253	0.233	-0.671	0.233	-1.083	0.233	-1.793
0.250	-0.215	0.250	-0.589	0.250	-0.950	0.250	-1.571
0.267	-0.190	0.267	-0.513	0.267	-0.830	0.267	-1.375
0.283	-0.164	0.283	-0.449	0.283	-0.722	0.283	-1.197
0.300	-0.139	0.300	-0.386	0.300	-0.633	0.300	-1.045
0.317	-0.120	0.317	-0.342	0.317	-0.551	0.317	-0.912
0.333	-0.101	0.333	-0.291	0.333	-0.475	0.333	-0.792
0.417	-0.050	0.417	-0.152	0.417	-0.247	0.417	-0.418
0.500	-0.012	0.500	-0.069	0.500	-0.114	0.500	-0.190
0.583	0.000	0.583	-0.031	0.583	-0.044	0.583	-0.076
0.667	0.006	0.667	-0.006	0.667	-0.006	0.667	-0.019
0.750	0.012	0.750	0.000	0.750	0.006	0.750	0.013
		0.833	0.006	0.833	0.019	0.833	0.028
K=1.6E-2 CM/SEC		1.000	0.012	1.417	0.012	0.917	0.032
		1.083	0.006	1.933	0.006	1.250	0.028
		1.750	0.000	2.800	0.000	1.500	0.019
		6.000	-0.006			1.917	0.013
		8.000	0.000	K=1.5E-2 CM/SEC		3.800	0.007
		8.500	-0.006				
		10.000	0.000			K=7.4E-3 CM/SEC	

K=1.5E-2 CM/SEC

S1107



○ TEST NO. 1  
\* TEST NO. 2  
△ TEST NO. 3

WELL 31117

WELL DIAMETER: 10.00 FT. SCREEN LENGTH: 0.00 FT. BOPING DIAMETER: 10.00 FT.

TEST 1                      TEST 2                      TEST 3

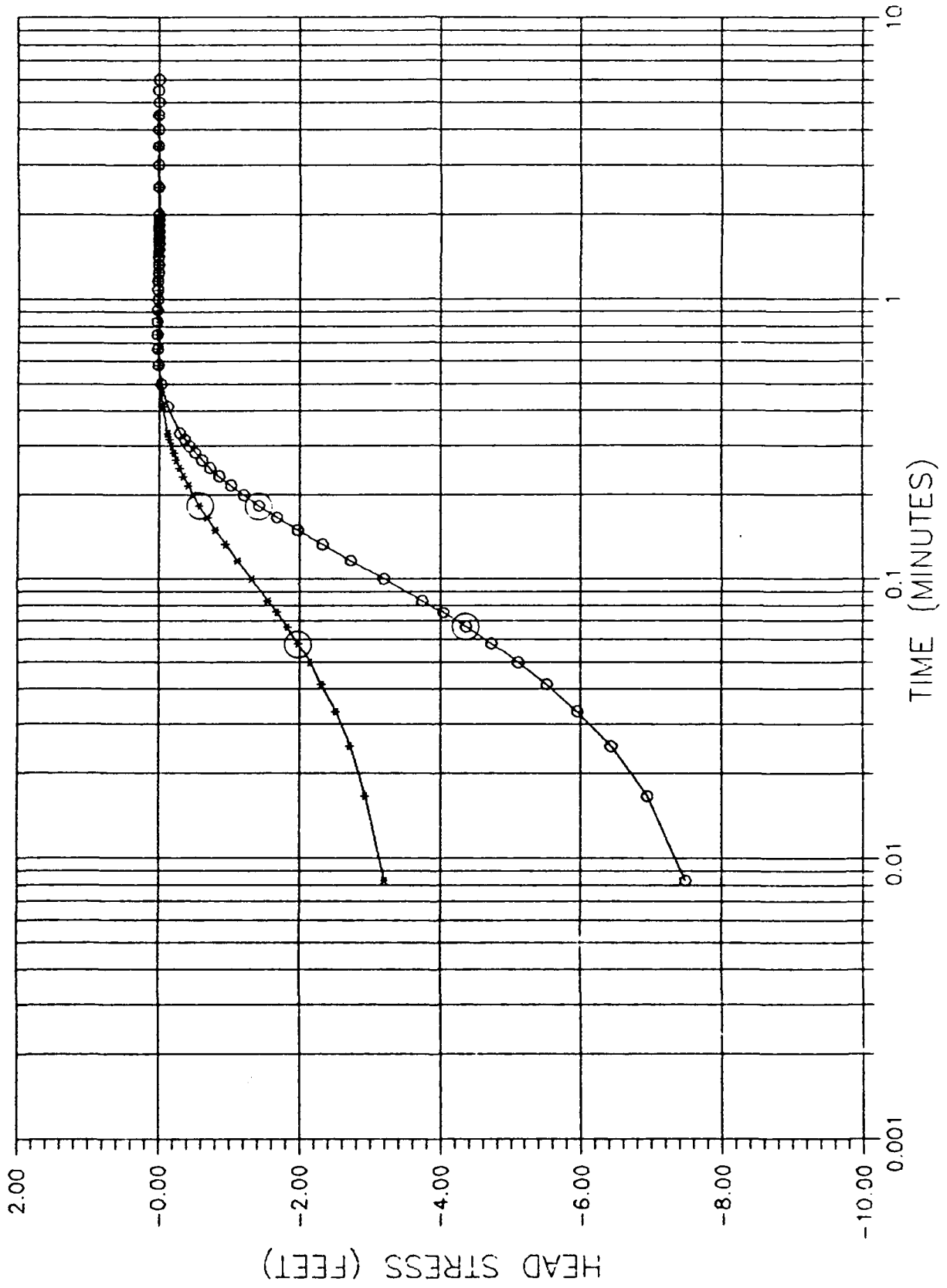
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-1.498	0.017	-5.501	0.008	-6.567
0.017	-1.502	0.026	-5.075	0.017	-8.237
0.025	-1.423	0.040	-4.981	0.025	-8.219
0.033	-1.413	0.050	-4.797	0.033	-9.023
0.042	-1.382	0.059	-4.689	0.042	-7.829
0.050	-1.337	0.067	-4.589	0.050	-7.624
0.058	-1.299	0.075	-4.455	0.058	-7.449
0.067	-1.267	0.083	-4.347	0.067	-7.262
0.075	-1.229	0.100	-4.132	0.075	-7.091
0.083	-1.197	0.117	-3.929	0.083	-6.920
0.100	-1.140	0.133	-3.732	0.100	-6.597
0.117	-1.083	0.150	-2.549	0.117	-6.293
0.133	-1.026	0.167	-3.371	0.133	-5.988
0.150	-0.975	0.183	-3.208	0.150	-5.703
0.167	-0.931	0.200	-3.048	0.167	-5.437
0.183	-0.880	0.217	-2.896	0.183	-5.184
0.200	-0.836	0.233	-2.756	0.200	-4.956
0.217	-0.798	0.250	-2.617	0.217	-4.708
0.233	-0.760	0.267	-2.490	0.233	-4.436
0.250	-0.716	0.283	-2.363	0.250	-4.277
0.267	-0.684	0.300	-2.249	0.267	-4.075
0.283	-0.646	0.317	-2.142	0.283	-3.884
0.300	-0.614	0.333	-2.034	0.300	-3.701
0.317	-0.589	0.417	-1.628	0.317	-3.530
0.333	-0.557	0.500	-1.273	0.333	-3.355
0.417	-0.443	0.583	-0.994	0.417	-2.712
0.500	-0.342	0.667	-0.779	0.500	-2.135
0.583	-0.266	0.750	-0.608	0.583	-1.635
0.667	-0.202	0.833	-0.475	0.667	-1.330
0.750	-0.158	0.917	-0.373	0.750	-1.052
0.833	-0.126	1.000	-0.291	0.833	-0.836
0.917	-0.095	1.083	-0.228	0.917	-0.659
1.000	-0.069	1.167	-0.177	1.000	-0.519
1.083	-0.050	1.250	-0.139	1.083	-0.411
1.167	-0.038	1.333	-0.107	1.167	-0.325
1.250	-0.031	1.417	-0.088	1.250	-0.259
1.333	-0.025	1.500	-0.069	1.333	-0.202
1.417	-0.012	1.583	-0.050	1.417	-0.164
1.583	-0.006	1.667	-0.044	1.500	-0.126
1.667	0.000	1.750	-0.031	1.583	-0.107
2.000	0.006	1.833	-0.025	1.667	-0.092
4.500	0.012	1.917	-0.019	1.750	-0.083
		2.000	-0.012	1.833	-0.050
		3.000	0.000	1.917	-0.044
		6.000	-0.006	2.000	-0.031
		6.500	0.000	3.000	-0.006
		7.000	-0.006		

K=3.6E-3 CM/SEC

K=3.4E-3 CM/SEC

K=3.5E-3 CM/SEC

S1114



\*\*\*\*\* TEST NO. 1  
ooooo TEST NO. 2

WELL 01114  
 WELL DIAMETER=0.3106FT. SCREEN LENGTH=10FT. BORING DIAMETER=0.78FT

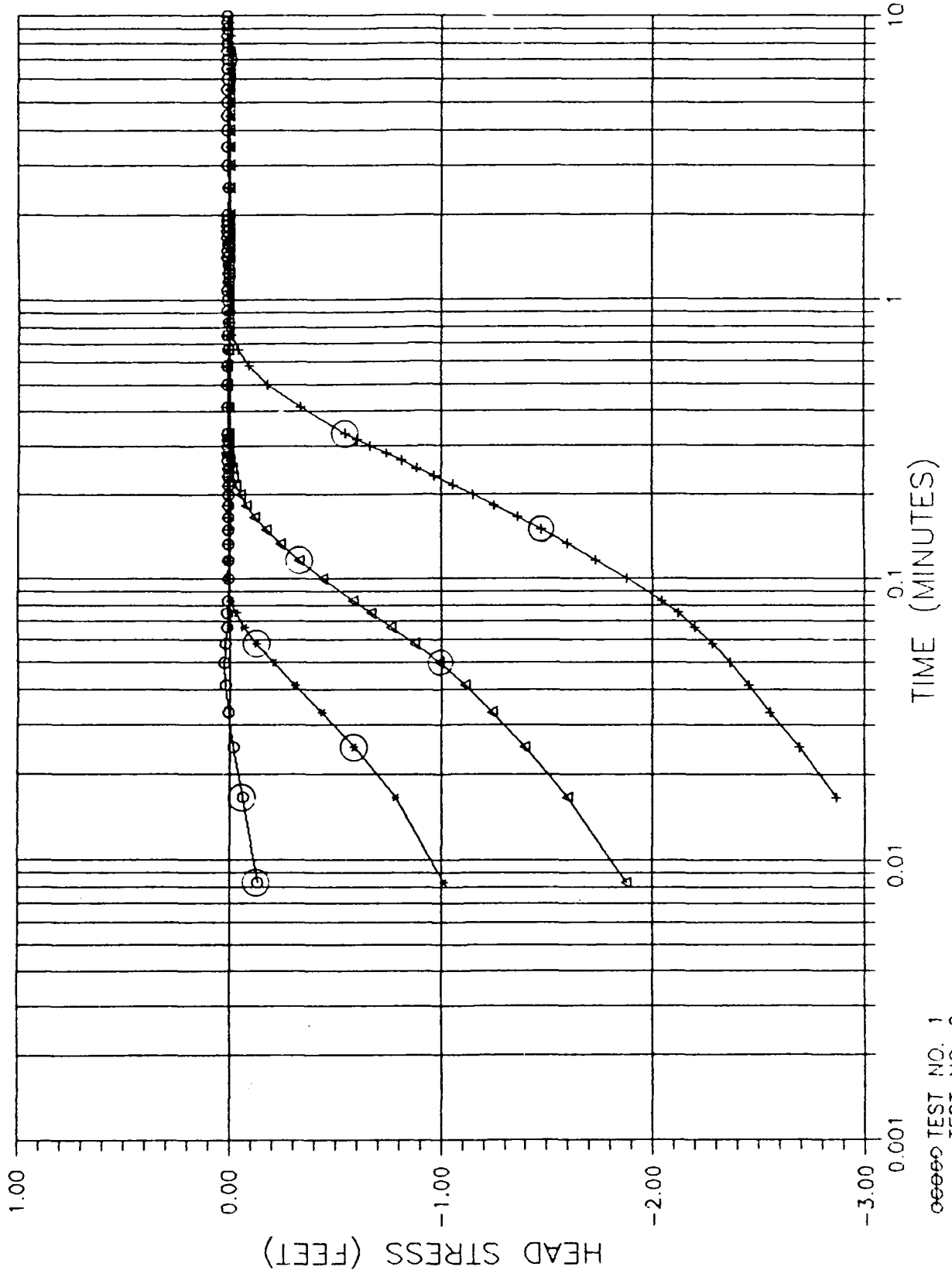
TEST 1		TEST 2	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.009	-2.206	0.008	-7.484
0.017	-2.934	0.017	-6.933
0.025	-2.718	0.025	-6.426
0.033	-2.518	0.033	-5.950
0.042	-2.313	0.042	-5.513
0.050	-2.143	0.050	-5.109
0.058	-1.977	0.058	-4.727
0.067	-1.831	0.067	-4.372
0.075	-1.685	0.075	-4.049
0.083	-1.552	0.083	-3.745
0.100	-1.324	0.100	-3.200
0.117	-1.121	0.117	-2.731
0.133	-0.950	0.133	-2.325
0.150	-0.804	0.150	-1.977
0.167	-0.690	0.167	-1.679
0.183	-0.576	0.183	-1.425
0.200	-0.487	0.200	-1.210
0.217	-0.418	0.217	-1.026
0.233	-0.348	0.233	-0.861
0.250	-0.291	0.250	-0.728
0.267	-0.247	0.267	-0.614
0.283	-0.209	0.283	-0.513
0.300	-0.177	0.300	-0.430
0.317	-0.145	0.317	-0.361
0.333	-0.120	0.333	-0.297
0.417	-0.050	0.417	-0.120
0.500	-0.012	0.500	-0.031
0.583	0.006	0.583	0.006
0.667	0.012	0.667	0.019
1.083	0.006	0.750	0.025
1.167	0.012	1.000	0.019
1.417	0.006	1.250	0.012
1.667	0.000	1.667	0.006
1.750	0.000	3.000	0.000
2.000	0.000	5.000	-0.000
2.500	0.000	5.500	0.000
3.500	0.000		

K=1.9E-2 CM/SEC

K=2.0E-2 CM/SEC



# DBM-82-01



WELL DBM-02-01  
 WELL DIAMETER=0.125FT, SCREEN LENGTH=20FT, BOPING DIAMETER=0.125FT  
 TEST 1 TEST 2 TEST 3 TEST 4

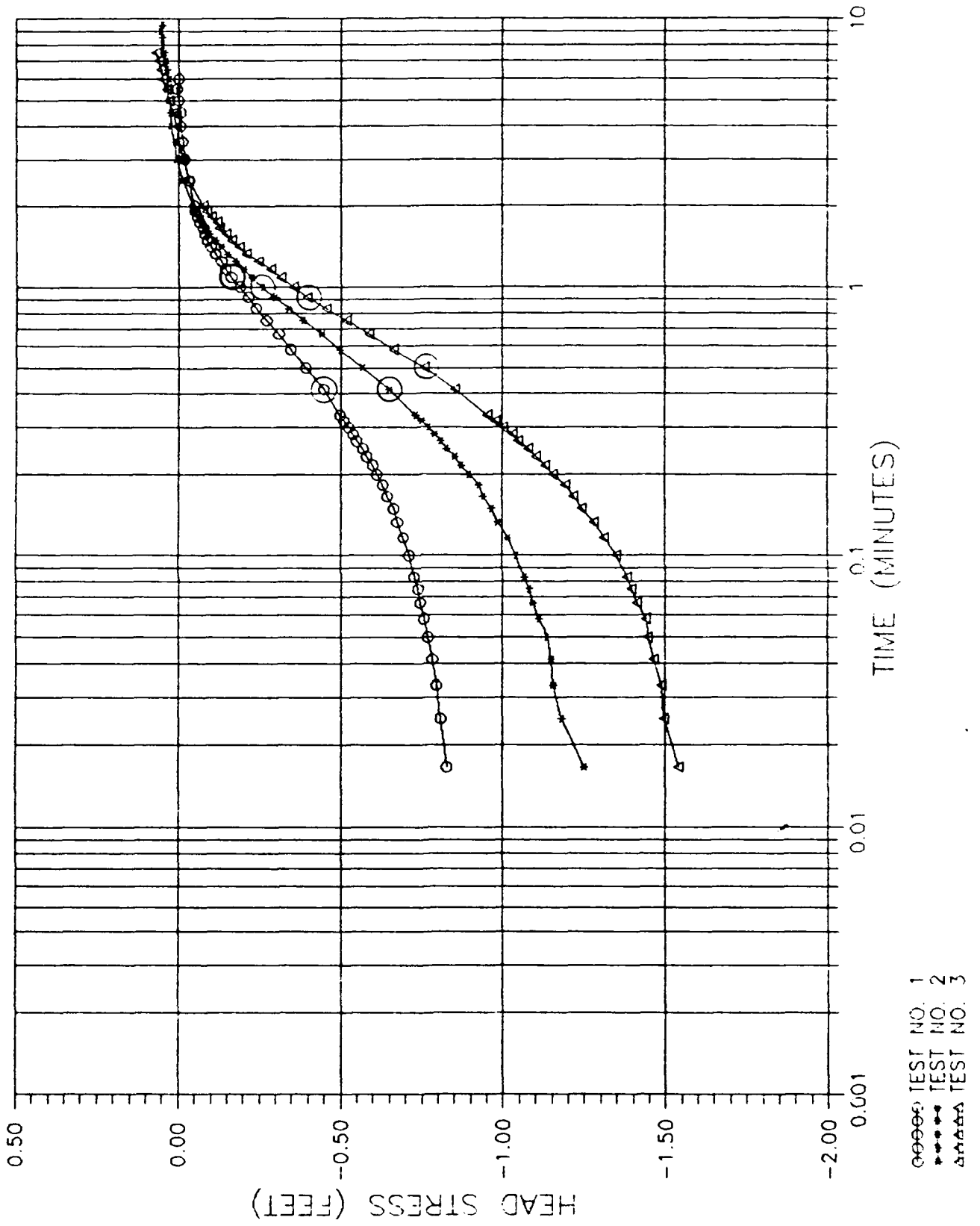
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-0.133	0.008	-1.014	0.008	-1.878	0.017	-0.864
0.017	-0.063	0.017	-0.785	0.017	-1.597	0.026	-0.693
0.026	-0.016	0.026	-0.569	0.026	-1.400	0.033	-0.554
0.033	0.002	0.033	-0.437	0.033	-1.242	0.042	-0.461
0.042	0.019	0.042	-0.313	0.042	-1.115	0.050	-0.363
0.050	0.026	0.050	-0.209	0.050	-0.994	0.053	-0.231
0.059	0.019	0.059	-0.126	0.059	-0.874	0.067	-0.199
0.067	0.012	0.067	-0.069	0.067	-0.766	0.075	-0.123
0.073	0.006	0.075	-0.031	0.075	-0.671	0.083	-0.049
0.267	0.012	0.083	-0.006	0.083	-0.583	0.190	-1.375
0.667	0.006	0.100	0.012	0.100	-0.443	0.117	-1.739
0.750	0.012	0.117	0.006	0.117	-0.329	0.133	-1.597
0.833	0.006	0.133	0.000	0.133	-0.240	0.150	-1.476
0.917	0.012	0.150	0.000	0.150	-0.171	0.167	-1.362
1.167	0.006	0.167	0.000	0.167	-0.120	0.183	-1.254
1.417	0.012	0.183	0.000	0.183	-0.082	0.200	-1.153
1.583	0.006	0.200	0.000	0.200	-0.050	0.217	-1.058
1.667	0.012	1.250	0.000	0.217	-0.031	0.233	-0.969
2.500	0.006	1.333	0.000	0.233	-0.019	0.250	-0.887
3.000	0.012	1.417	0.000	0.250	-0.012	0.267	-0.811
		1.500	0.000	0.267	0.000	0.283	-0.741
K=1.1E-1 CM/SEC		1.583	0.006	0.283	0.006	0.300	-0.665
		1.667	0.000	0.500	0.012	0.317	-0.602
		1.750	0.000	0.667	0.000	0.333	-0.545
		1.833	0.000	1.250	0.000	0.417	-0.335
		1.917	0.500	1.333	0.006	0.500	-0.177
		2.000	0.000	1.417	0.000	0.583	-0.088
		2.500	0.000	1.500	0.000	0.667	-0.038
		3.000	0.000	1.583	0.000	0.750	-0.012
		3.500	0.000	1.667	0.000	0.833	0.000
		4.000	0.000	1.750	0.000	0.917	0.000
		4.500	0.000	1.833	0.000	1.000	0.006
		5.000	0.000	1.917	0.000	1.500	0.000
		5.500	-0.006	2.000	0.000	1.583	0.000
				2.500	0.000	1.667	0.000
				3.000	0.000	1.750	0.000
				3.500	0.000	1.833	0.000
				4.000	0.000	1.917	0.000
				4.500	0.000	2.000	0.000
				5.000	0.000	2.500	0.000
				5.500	0.000	3.000	0.000
				6.000	0.000	3.500	0.000
				6.500	0.000	4.000	0.000
				7.000	-0.000	4.500	0.000
				7.500	0.000	5.000	-0.006
						5.500	0.000
						6.000	0.000
						6.500	0.000
						7.000	0.000

K=5.7E-2 CM/SEC

K=2.0E-2 CM/SEC

K=6.6E-3 CM/SEC

# DBM-89-01



WELL ID: 10M-33-11

WELL DIAMETER: 0.1067 FT. CABLE LENGTH: 157 FT. HOISTING DIAMETER: 7.5 FT

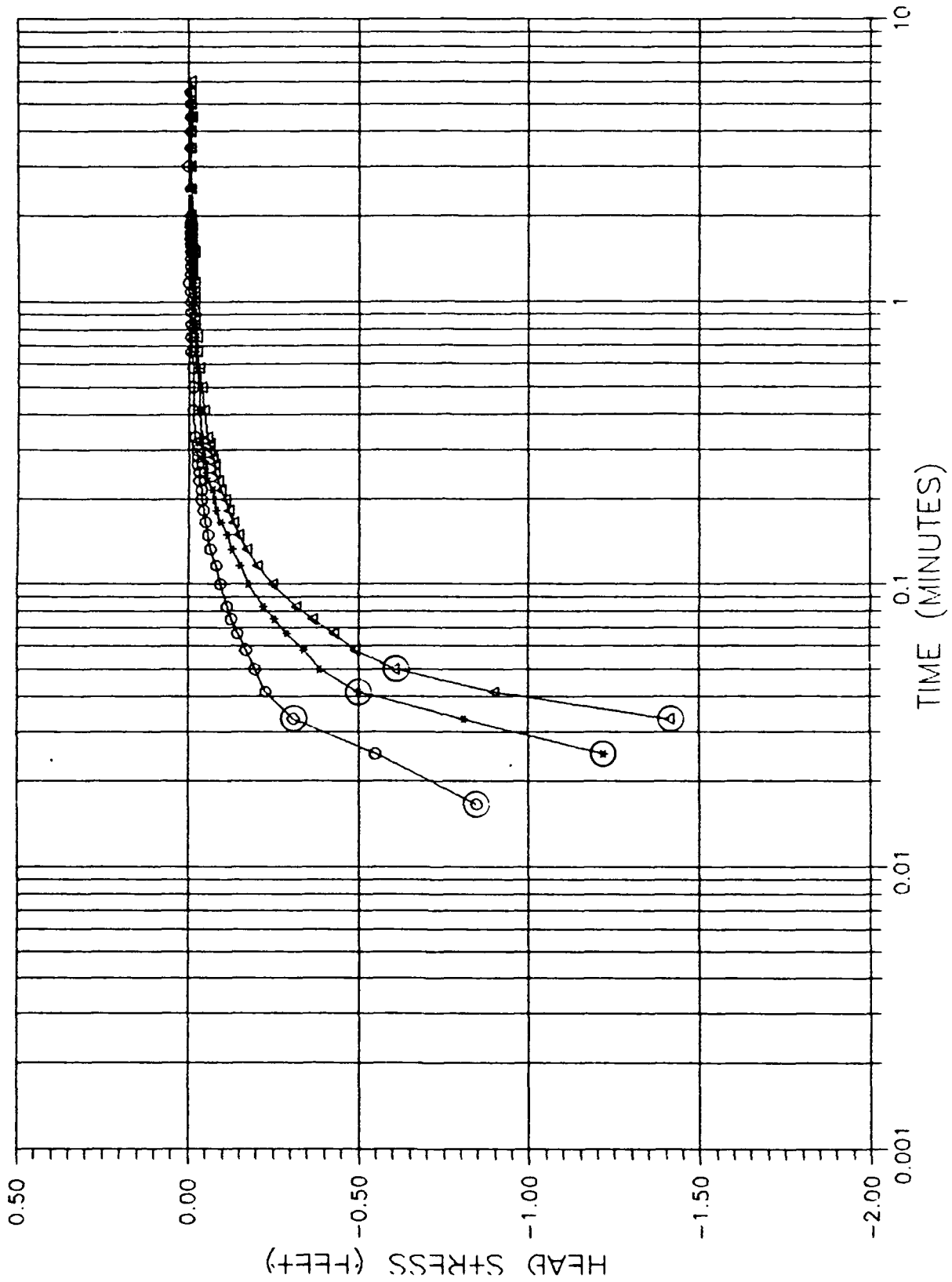
TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.017	-0.807	0.017	-1.249	0.017	-1.539
0.025	-0.808	0.025	-1.183	0.025	-1.495
0.033	-0.795	0.033	-1.155	0.033	-1.489
0.042	-0.783	0.042	-1.148	0.042	-1.464
0.050	-0.776	0.050	-1.136	0.050	-1.445
0.058	-0.757	0.058	-1.111	0.058	-1.439
0.067	-0.745	0.067	-1.092	0.067	-1.413
0.075	-0.738	0.075	-1.079	0.075	-1.394
0.083	-0.726	0.083	-1.066	0.083	-1.382
0.100	-0.713	0.100	-1.041	0.100	-1.359
0.117	-0.694	0.117	-1.016	0.117	-1.312
0.133	-0.675	0.133	-0.934	0.133	-1.281
0.150	-0.653	0.150	-0.965	0.150	-1.249
0.167	-0.644	0.167	-0.940	0.167	-1.218
0.183	-0.631	0.183	-0.928	0.183	-1.193
0.200	-0.612	0.200	-0.896	0.200	-1.155
0.217	-0.606	0.217	-0.871	0.217	-1.139
0.233	-0.581	0.233	-0.852	0.233	-1.104
0.250	-0.568	0.250	-0.827	0.250	-1.079
0.267	-0.549	0.267	-0.806	0.267	-1.047
0.283	-0.537	0.283	-0.799	0.283	-1.029
0.300	-0.524	0.300	-0.773	0.300	-1.003
0.317	-0.511	0.317	-0.751	0.317	-0.978
0.333	-0.499	0.333	-0.732	0.333	-0.953
<u>0.417</u>	<u>-0.449</u>	<u>0.417</u>	<u>-0.650</u>	<u>0.417</u>	<u>-0.852</u>
0.500	-0.392	0.500	-0.568	0.500	-0.757
0.583	-0.347	0.583	-0.499	0.583	-0.663
0.667	-0.310	0.667	-0.442	0.667	-0.587
0.750	-0.272	0.750	-0.385	0.750	-0.518
0.833	-0.243	0.833	-0.341	0.833	-0.455
0.917	-0.215	0.917	-0.297	<u>0.917</u>	<u>-0.398</u>
1.000	-0.190	<u>1.000</u>	<u>-0.259</u>	1.000	-0.354
<u>1.083</u>	<u>-0.164</u>	1.083	-0.228	1.083	-0.316
1.167	-0.146	1.167	-0.202	1.167	-0.284
1.250	-0.133	1.250	-0.177	1.250	-0.246
1.333	-0.114	1.333	-0.152	1.333	-0.209
1.417	-0.101	1.417	-0.133	1.417	-0.190
1.500	-0.089	1.500	-0.114	1.500	-0.164
1.583	-0.082	1.583	-0.095	1.583	-0.146
1.667	-0.076	1.667	-0.082	1.667	-0.127
1.750	-0.064	1.750	-0.070	1.750	-0.120
1.833	-0.057	1.833	-0.064	1.833	-0.101
1.917	-0.051	1.917	-0.051	1.917	-0.089
2.000	-0.032	2.000	-0.045	2.000	-0.076
2.083	-0.019	2.083	-0.039	2.083	-0.061
2.167	-0.011	2.167	-0.032	2.167	-0.049
2.250	-0.007	2.250	-0.025	2.250	-0.037
2.333	0.000	2.333	-0.019	2.333	-0.025
2.417	0.000	2.417	0.000	2.417	0.000
2.500	0.000	2.500	0.000	2.500	0.000
2.583	0.000	2.583	0.000	2.583	0.000
2.667	0.000	2.667	0.000	2.667	0.000
2.750	0.000	2.750	0.000	2.750	0.000
2.833	0.000	2.833	0.000	2.833	0.000
2.917	0.000	2.917	0.000	2.917	0.000
3.000	0.000	3.000	0.000	3.000	0.000
3.083	0.000	3.083	0.000	3.083	0.000
3.167	0.000	3.167	0.000	3.167	0.000
3.250	0.000	3.250	0.000	3.250	0.000
3.333	0.000	3.333	0.000	3.333	0.000
3.417	0.000	3.417	0.000	3.417	0.000
3.500	0.000	3.500	0.000	3.500	0.000
3.583	0.000	3.583	0.000	3.583	0.000
3.667	0.000	3.667	0.000	3.667	0.000
3.750	0.000	3.750	0.000	3.750	0.000
3.833	0.000	3.833	0.000	3.833	0.000
3.917	0.000	3.917	0.000	3.917	0.000
4.000	0.000	4.000	0.000	4.000	0.000
4.083	0.000	4.083	0.000	4.083	0.000
4.167	0.000	4.167	0.000	4.167	0.000
4.250	0.000	4.250	0.000	4.250	0.000
4.333	0.000	4.333	0.000	4.333	0.000
4.417	0.000	4.417	0.000	4.417	0.000
4.500	0.000	4.500	0.000	4.500	0.000
4.583	0.000	4.583	0.000	4.583	0.000
4.667	0.000	4.667	0.000	4.667	0.000
4.750	0.000	4.750	0.000	4.750	0.000
4.833	0.000	4.833	0.000	4.833	0.000
4.917	0.000	4.917	0.000	4.917	0.000
5.000	0.000	5.000	0.000	5.000	0.000
5.083	0.000	5.083	0.000	5.083	0.000
5.167	0.000	5.167	0.000	5.167	0.000
5.250	0.000	5.250	0.000	5.250	0.000
5.333	0.000	5.333	0.000	5.333	0.000
5.417	0.000	5.417	0.000	5.417	0.000
5.500	0.000	5.500	0.000	5.500	0.000

K=0.2E-3 CM/SEC

K=0.3E-3 CM/SEC

K=0.4E-3 CM/SEC

# DBM-89-02A



○ TEST NO. 1  
● TEST NO. 2  
△ TEST NO. 3

WELL IDEN-39-00A  
 WELL DIAMETER=0.0105FT. SCREEN LENGTH=15FT. BOPING DIAMETER=0.75FT

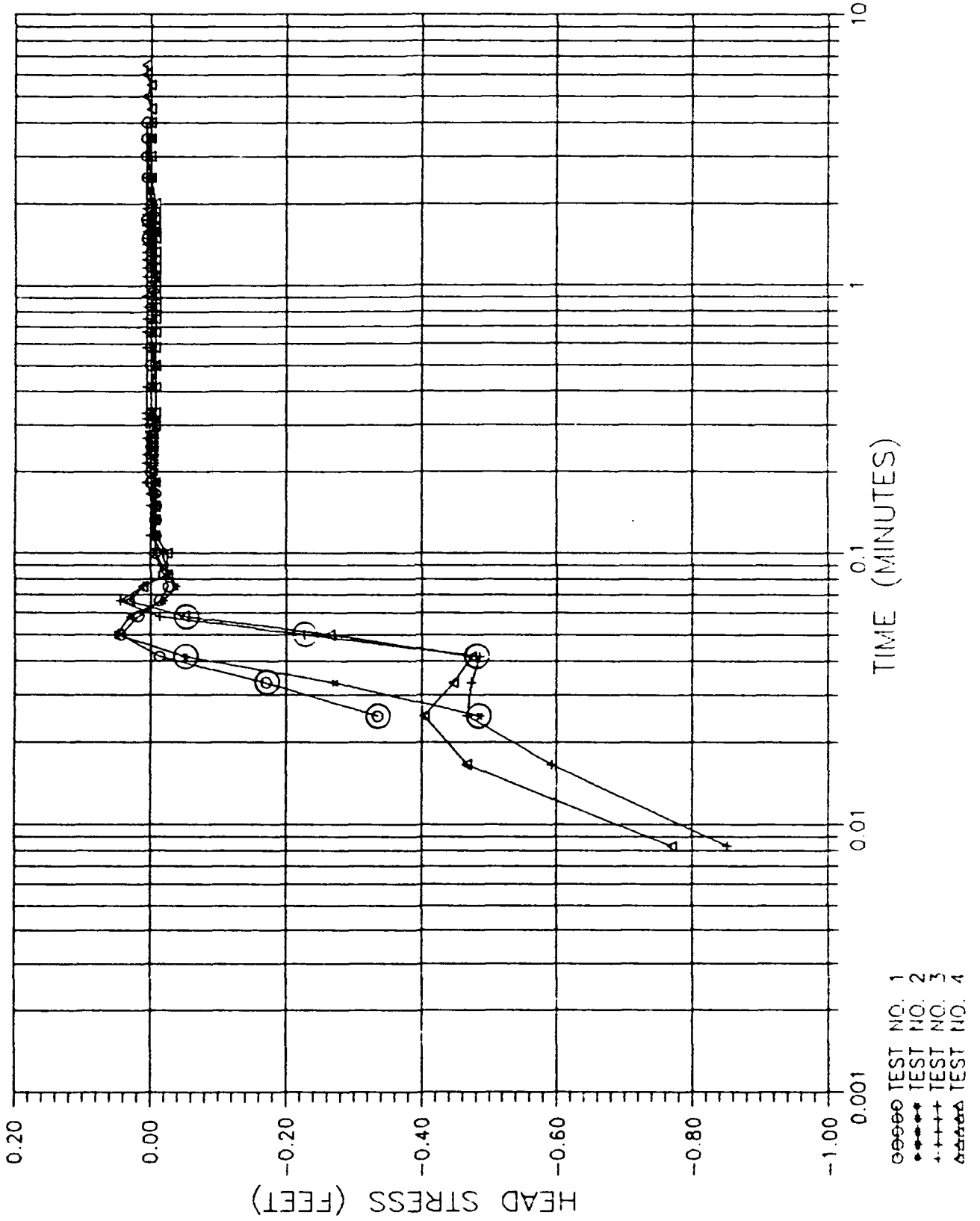
TEST 1		TEST 2		TEST 3	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.017	-0.846	0.025	-1.218	0.033	-1.413
0.025	-0.549	0.033	-0.808	0.042	-0.896
0.033	-0.310	0.040	-0.499	0.050	-0.608
0.042	-0.228	0.050	-0.388	0.058	-0.490
0.050	-0.196	0.058	-0.341	0.067	-0.429
0.058	-0.171	0.067	-0.291	0.075	-0.366
0.067	-0.146	0.075	-0.250	0.083	-0.316
0.075	-0.127	0.083	-0.221	0.100	-0.246
0.083	-0.114	0.100	-0.177	0.117	-0.202
0.100	-0.095	0.117	-0.150	0.133	-0.171
0.117	-0.082	0.133	-0.127	0.150	-0.146
0.133	-0.064	0.150	-0.114	0.167	-0.133
0.150	-0.057	0.167	-0.095	0.183	-0.120
0.167	-0.051	0.183	-0.082	0.200	-0.108
0.183	-0.045	0.200	-0.076	0.217	-0.095
0.200	-0.038	0.217	-0.070	0.233	-0.089
0.233	-0.032	0.233	-0.057	0.250	-0.076
0.267	-0.026	0.250	-0.051	0.263	-0.070
0.333	-0.019	0.283	-0.045	0.300	-0.064
0.417	-0.013	0.317	-0.038	0.333	-0.057
0.667	-0.007	0.417	-0.032	0.417	-0.045
1.167	0.000	0.583	-0.026	0.500	-0.036
1.250	-0.007	0.667	-0.019	0.583	-0.030
3.000	0.000	0.917	-0.013	0.667	-0.026
3.500	-0.007	1.000	-0.019	0.833	-0.019
		1.033	-0.013	1.250	-0.013
		1.500	-0.007	1.500	-0.019
		1.917	-0.013	1.583	-0.013
		2.500	-0.007	1.750	-0.007
				1.833	-0.013
				1.917	-0.007
				4.500	-0.013
				5.000	-0.007

9.1E-1 CM/SEC

K=8.1E-2 CM/SEC

K=7.7E-2 CM/SEC

# DBM-89-03



WOL 72M-24-00

WELL DIAMETER= 0.1567 SCREEN LENGTH=16FT. BOPING DIAMETER=0.1567

TEST 1		TEST 2		TEST 3		TEST 4	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.025	-0.335	0.025	-0.456	0.008	-0.556	0.008	-0.770
0.033	-0.477	0.033	-0.272	0.017	-0.590	0.017	-0.467
0.042	-0.013	0.042	-0.051	0.025	-0.467	0.025	-0.404
0.050	0.044	0.050	0.050	0.033	-0.474	0.033	-0.448
0.058	0.018	0.058	0.031	0.042	-0.486	0.042	-0.474
0.067	-0.013	0.067	-0.019	0.050	-0.228	0.050	-0.265
0.075	-0.026	0.075	-0.038	0.058	-0.013	0.058	-0.051
0.083	-0.019	0.083	-0.026	0.067	0.044	0.067	0.021
0.100	-0.007	0.100	-0.007	0.075	0.012	0.075	0.012
0.183	0.000	0.333	0.060	0.083	-0.026	0.083	-0.026
1.500	0.006	0.500	-0.007	0.100	-0.019	0.117	-0.007
1.583	0.000	0.583	0.060	0.117	0.000	0.167	0.000
1.750	0.006	1.050	-0.007	0.133	-0.007	0.150	-0.007
1.833	0.000	1.167	0.000	0.150	0.000	0.200	0.000
2.500	0.006	1.583	-0.007	0.183	0.006	0.217	0.000
		1.667	0.000	0.200	0.000	0.233	0.000
		3.000	0.006	0.217	0.006	0.250	0.000
		3.500	0.000	0.250	0.000	0.267	0.000
				0.267	0.006	0.283	0.000
				0.283	0.000	0.300	-0.007
				0.300	0.006	0.317	0.000
						0.333	-0.007
						1.417	0.000
						1.500	-0.007
						1.833	0.000
						1.917	-0.007
						2.500	0.000
						3.000	0.000
						3.500	0.000
						4.000	0.000
						4.500	0.000
						5.000	0.006
						5.500	0.000
						6.000	0.006

K=1.0E-1 CM/SEC

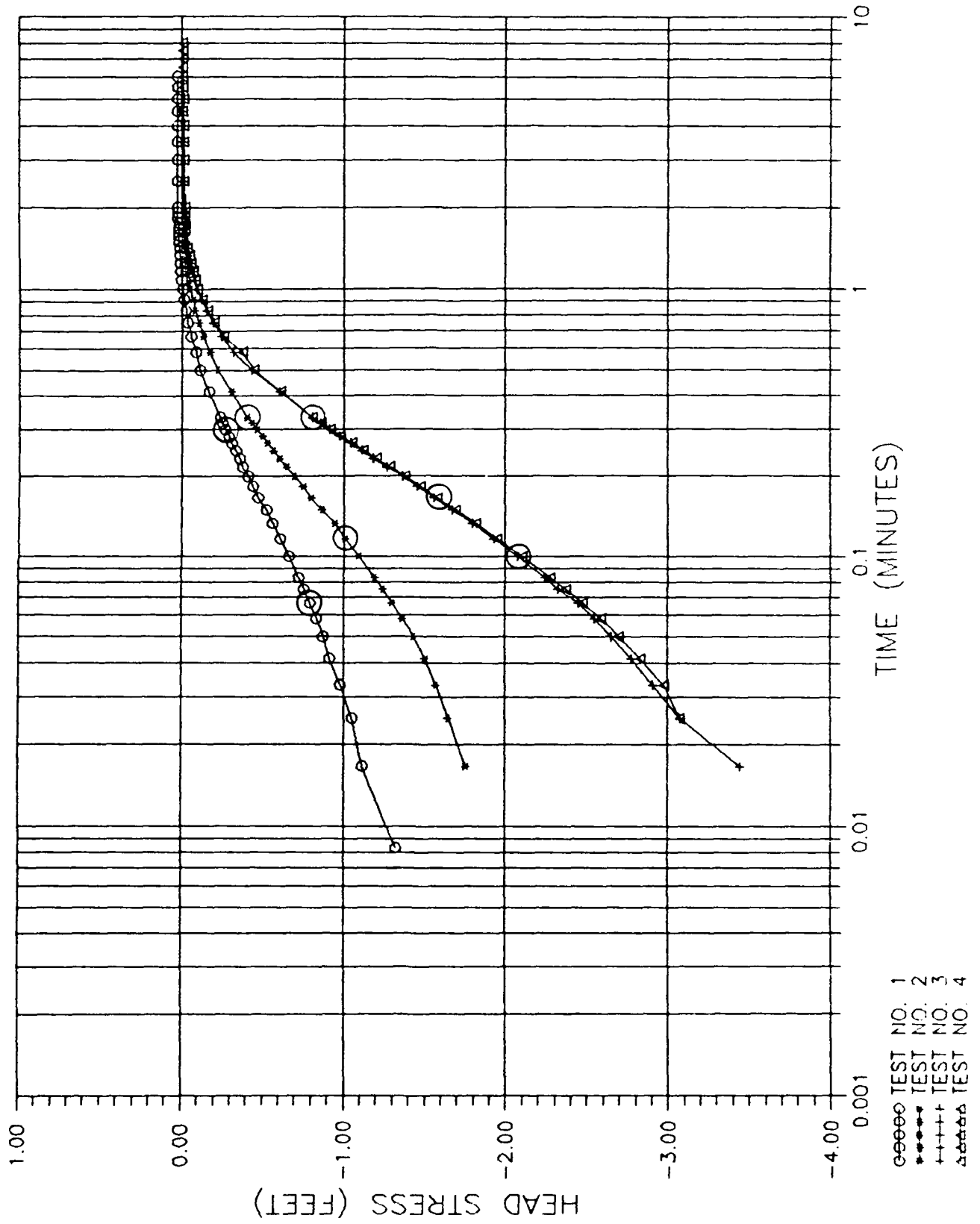
K=2.0E-1 CM/SEC

K=1.3E-1 CM/SEC

K=2.0E-1 CM/SEC



# DBM-89-05



WELL DEM-10-10

WELL DIAMETER IN. SCREEN LENGTH IN. BIPING DIAMETER IN. TEST

TEST 1		TEST 2		TEST 3		TEST 4	
TIME	HEAD	TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET	MIN.	FEET
0.008	-1.305	0.017	-1.754	0.017	-2.444	0.025	-2.070
0.017	-1.117	0.025	-1.647	0.025	-2.072	0.033	-2.577
0.025	-1.054	0.033	-1.571	0.033	-2.908	0.042	-2.830
0.033	-0.978	0.042	-1.500	0.042	-2.776	0.050	-2.766
0.042	-0.915	0.050	-1.432	0.050	-2.650	0.058	-2.586
0.050	-0.877	0.058	-1.363	0.058	-2.549	0.067	-2.479
0.058	-0.833	0.067	-1.300	0.067	-2.448	0.075	-2.370
0.067	-0.795	0.075	-1.243	0.075	-2.320	0.083	-2.267
0.075	-0.757	0.083	-1.190	0.083	-2.240	0.100	-2.121
0.083	-0.726	0.100	-1.092	0.100	-2.075	0.117	-1.949
0.100	-0.662	0.117	-1.010	0.117	-1.930	0.133	-1.817
0.117	-0.612	0.133	-0.947	0.133	-1.798	0.150	-1.691
0.133	-0.562	0.150	-0.885	0.150	-1.670	0.167	-1.577
0.150	-0.524	0.167	-0.802	0.167	-1.553	0.183	-1.476
0.167	-0.474	0.183	-0.751	0.183	-1.457	0.200	-1.375
0.183	-0.442	0.200	-0.694	0.200	-1.363	0.217	-1.287
0.200	-0.410	0.217	-0.650	0.217	-1.268	0.233	-1.205
0.217	-0.375	0.233	-0.606	0.233	-1.186	0.250	-1.123
0.233	-0.350	0.250	-0.569	0.250	-1.111	0.267	-1.054
0.250	-0.335	0.267	-0.530	0.267	-1.041	0.283	-0.984
0.267	-0.310	0.283	-0.499	0.283	-0.972	0.300	-0.921
0.283	-0.291	0.300	-0.467	0.300	-0.915	0.317	-0.865
0.300	-0.272	0.317	-0.436	0.317	-0.858	0.333	-0.808
0.317	-0.253	0.333	-0.404	0.333	-0.802	0.417	-0.612
0.333	-0.240	0.417	-0.310	0.417	-0.696	0.500	-0.442
0.417	-0.171	0.500	-0.221	0.500	-0.436	0.583	-0.379
0.500	-0.114	0.583	-0.177	0.583	-0.322	0.667	-0.259
0.583	-0.089	0.667	-0.133	0.667	-0.246	0.750	-0.202
0.667	-0.057	0.750	-0.108	0.750	-0.196	0.833	-0.158
0.750	-0.038	0.833	-0.082	0.833	-0.152	0.917	-0.127
0.833	-0.026	0.917	-0.070	0.917	-0.120	1.000	-0.101
0.917	-0.013	1.000	-0.051	1.000	-0.095	1.083	-0.082
1.000	-0.007	1.083	-0.045	1.083	-0.070	1.167	-0.070
1.083	0.000	1.167	-0.039	1.167	-0.054	1.250	-0.057
1.167	0.006	1.250	-0.032	1.250	-0.051	1.333	-0.051
1.250	0.012	1.333	-0.026	1.333	-0.038	1.417	-0.038
1.500	0.019	1.500	-0.019	1.500	-0.025	1.500	-0.007
1.833	0.025	1.667	-0.013	1.667	-0.019	1.583	0.000
		2.000	-0.007	1.833	-0.013	1.667	-0.026
		4.500	0.000	2.500	0.000	1.833	-0.019
		5.000	-0.007	3.000	0.000	2.500	-0.013
				3.500	0.000	4.500	-0.007
				4.000	0.000	5.000	0.000
				4.500	0.000	5.500	0.000

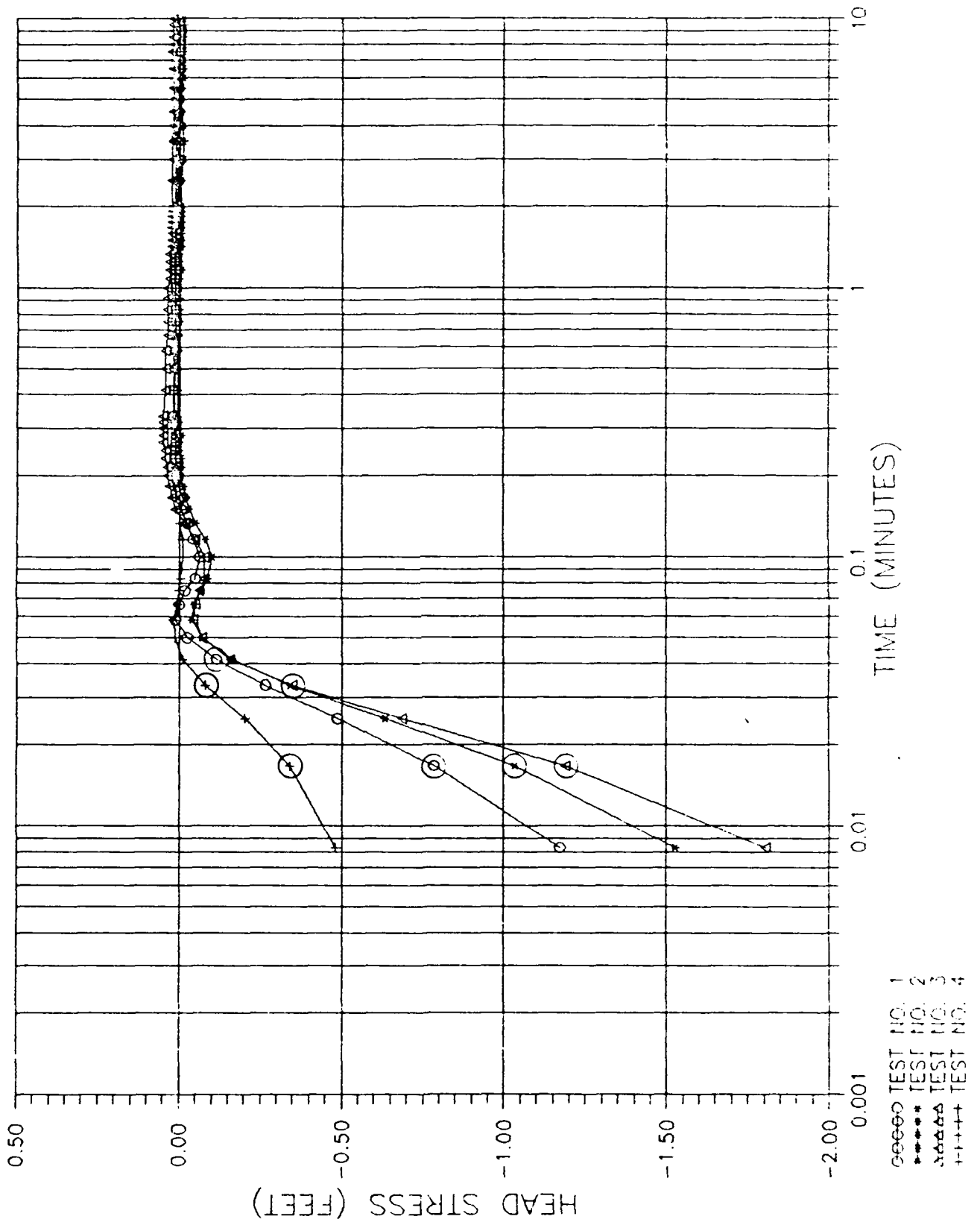
K=7.0E-3 CM/SEC

K=5.4E-3 CM/SEC

K=6.1E-3 CM/SEC

K=8.3E-3 CM/SEC

# DBN-89-02B



WELL DEN-89-025

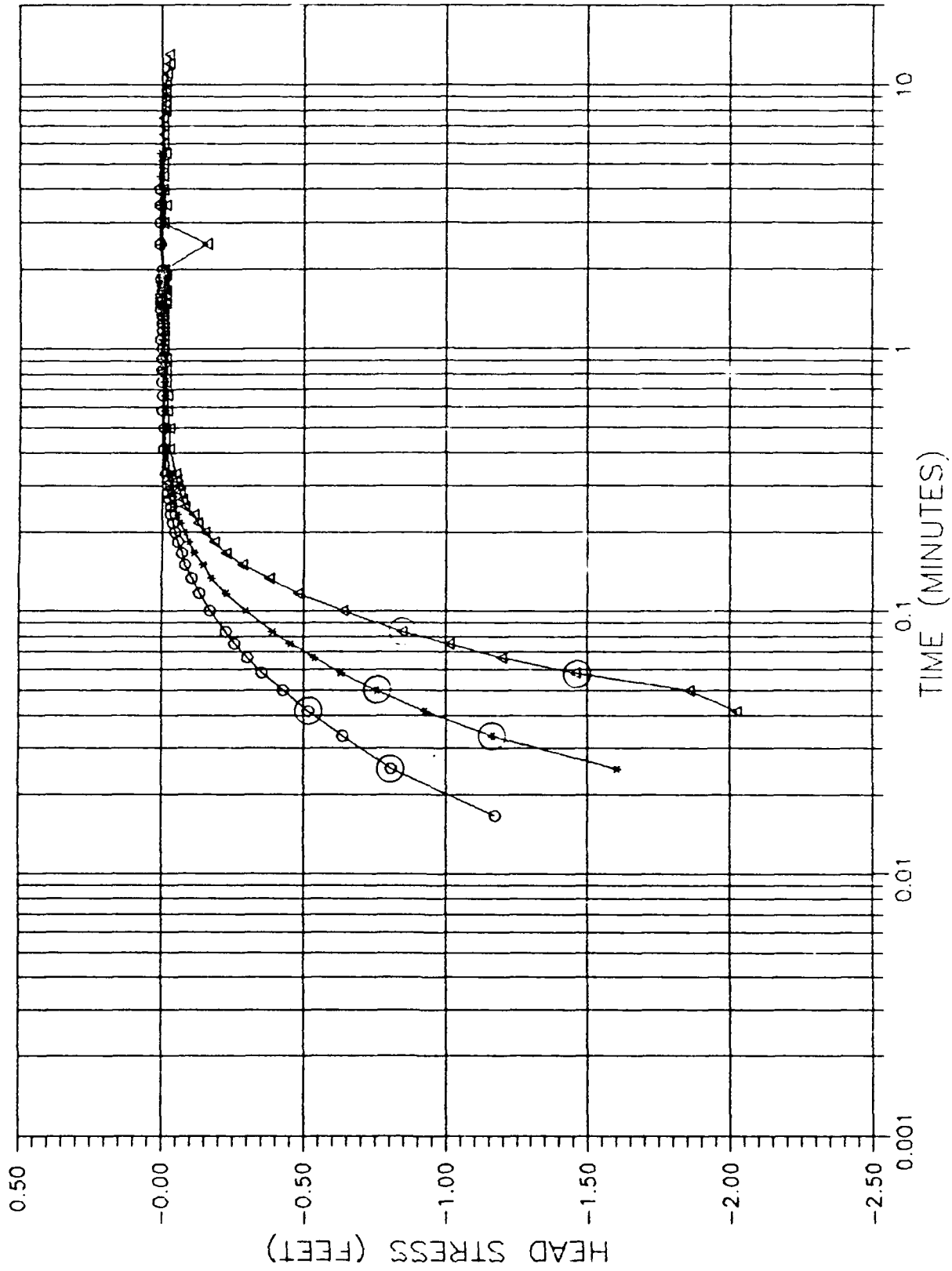
WELL DIAMETER=0.8125 FT. TEST LENGTH=11 FT. BORING DIAMETER=0.75 FT.

TEST 1		TEST 2		TEST 3		TEST 4	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.000	0.000	0.000	-2.059	0.000	-2.465	0.008	-0.431
0.000	-1.584	0.008	-1.527	0.008	-1.806	0.017	-0.342
0.008	-1.172	0.017	-1.033	0.017	-1.191	0.025	-0.302
0.017	-0.785	0.025	-0.633	0.025	-0.684	0.033	-0.082
0.025	-0.487	0.033	-0.342	0.033	-0.348	0.042	-0.012
0.033	-0.266	0.042	-0.164	0.042	-0.156	0.050	0.012
0.042	-0.114	0.050	-0.069	0.050	-0.069	0.058	0.019
0.050	-0.025	0.058	-0.038	0.058	-0.044	0.067	0.006
0.058	0.012	0.067	-0.044	0.067	-0.050	0.075	0.000
0.067	0.000	0.075	-0.069	0.075	-0.063	0.083	-0.006
0.075	-0.019	0.083	-0.088	0.083	-0.076	0.100	-0.012
0.083	-0.050	0.100	-0.101	0.117	-0.059	0.117	-0.012
0.100	-0.063	0.117	-0.082	0.133	-0.019	0.133	0.000
0.117	-0.044	0.133	-0.050	0.150	0.012	0.150	0.000
0.133	-0.025	0.150	-0.031	0.167	0.025	0.167	0.012
0.150	-0.006	0.167	-0.019	0.183	0.031	0.183	0.012
0.167	-0.012	0.183	-0.012	0.200	0.038	0.200	0.012
0.183	0.006	0.200	-0.006	0.233	0.044	0.217	0.012
0.200	0.006	0.250	0.000	0.267	0.050	0.233	0.012
0.217	0.006	0.283	-0.006	0.417	0.044	0.250	0.012
0.233	0.012	0.300	0.006	0.667	0.038	0.257	0.012
0.250	0.012	0.317	0.000	1.083	0.031	0.283	0.012
0.267	0.012	0.333	0.006	1.417	0.025	0.300	0.019
0.283	0.012	0.750	0.000	4.000	0.019	0.317	0.019
0.300	0.012	1.167	-0.006	7.500	0.025	0.333	0.012
0.317	0.012	1.250	0.000	8.000	0.019	0.417	0.019
0.333	0.019	1.417	-0.006			0.500	0.019
0.417	0.019	3.000	-0.012	K=1.4E-1 CM/SEC		0.583	0.019
0.500	0.012	4.500	-0.006			0.667	0.019
0.583	0.012	6.000	-0.012			0.750	0.019
0.667	0.012					0.833	0.012
0.750	0.012	K=1.2E-1 CM/SEC				0.917	0.012
0.833	0.012					1.000	0.012
0.917	0.019					1.083	0.012
1.000	0.012					1.167	0.012
1.083	0.012					1.250	0.012
1.167	0.012					1.333	0.012
1.250	0.012					1.417	0.012
1.333	0.012					1.500	0.012
1.417	0.006					1.583	0.012
1.500	0.006					1.667	0.012
1.583	0.012					1.750	0.012
1.667	0.006					1.833	0.012
1.750	0.006					1.917	0.012
1.833	0.006					2.000	0.012
1.917	0.006					2.500	0.012
2.000	0.006					3.000	0.012
2.500	0.006					3.500	0.012
3.000	0.006					4.000	0.012
3.500	0.006					4.500	0.012
4.000	0.006					5.000	0.012
4.500	0.006					5.500	0.012
5.000	0.006					6.000	0.012

K=1.0E-1 CM/SEC

K=1.6E-1 CM/SEC

DBN-89-04A



OOOOO TEST NO. 1  
\*\*\*\*\* TEST NO. 2  
ΔΔΔΔΔ TEST NO. 3

WELL DRN-59-04A  
 WELL DIAMETER=3 3/8FT, SCREEN LENGTH=16FT, BORING DIAMETER=3 7/8FT

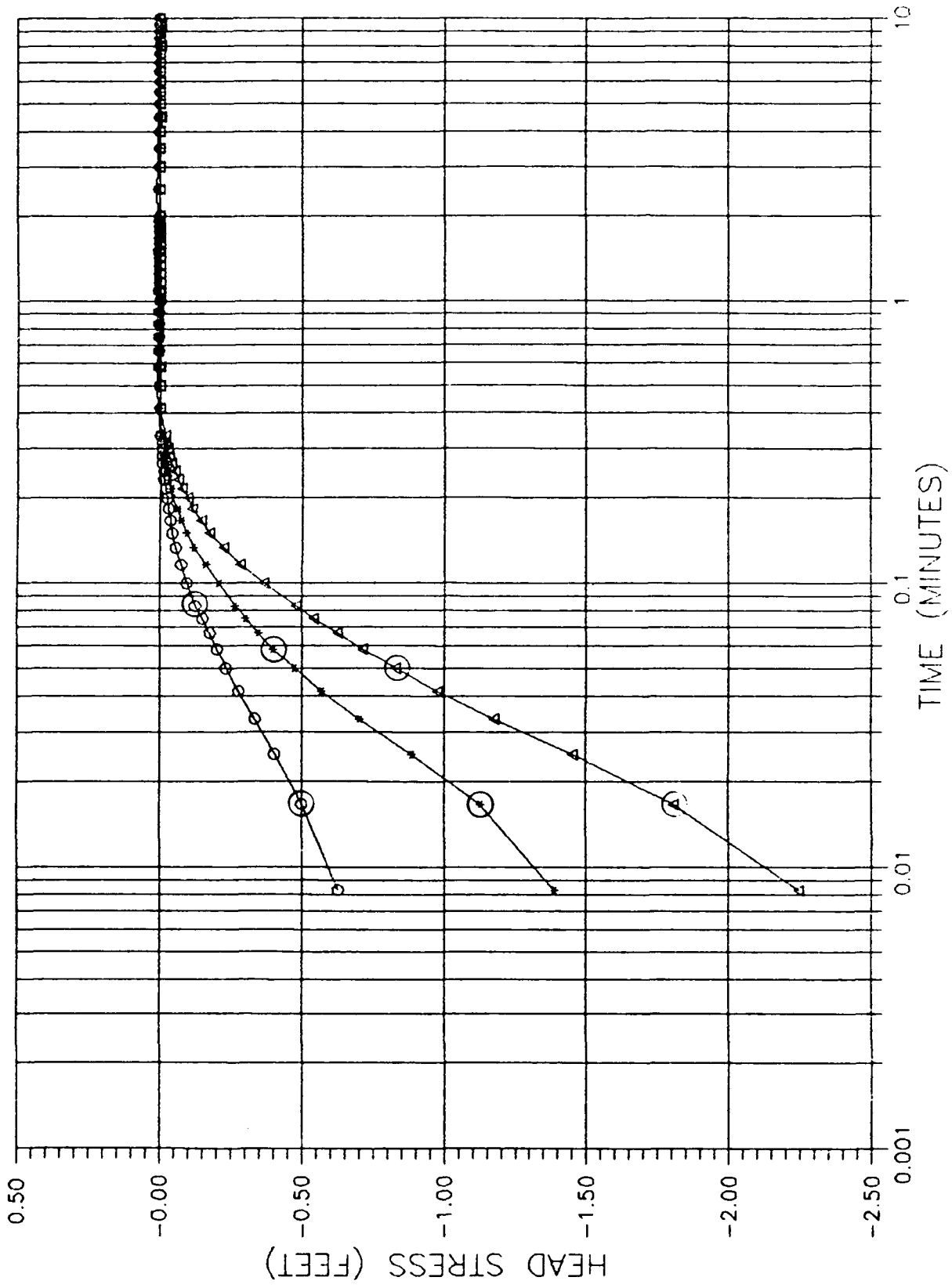
TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.017	-1.174	0.025	-1.693	0.042	-0.826
0.025	-0.909	0.033	-1.167	0.050	-1.855
0.033	-0.635	0.042	-0.928	0.058	-1.457
0.042	-0.518	0.050	-0.757	0.067	-1.199
0.050	-0.429	0.058	-0.631	0.075	-1.016
0.058	-0.354	0.067	-0.537	0.083	-0.845
0.067	-0.303	0.075	-0.455	0.100	-0.638
0.075	-0.259	0.083	-0.392	0.117	-0.460
0.083	-0.228	0.100	-0.297	0.133	-0.379
0.100	-0.171	0.117	-0.229	0.150	-0.284
0.117	-0.133	0.133	-0.177	0.167	-0.228
0.133	-0.108	0.150	-0.146	0.183	-0.183
0.150	-0.082	0.167	-0.114	0.200	-0.152
0.167	-0.070	0.183	-0.095	0.217	-0.127
0.183	-0.057	0.200	-0.082	0.233	-0.114
0.200	-0.045	0.217	-0.064	0.250	-0.092
0.217	-0.038	0.233	-0.057	0.267	-0.070
0.233	-0.032	0.250	-0.045	0.283	-0.064
0.267	-0.026	0.283	-0.038	0.300	-0.057
0.283	-0.019	0.300	-0.032	0.317	-0.051
0.333	-0.013	0.317	-0.026	0.333	-0.045
0.417	-0.007	0.417	-0.013	0.417	-0.026
0.583	0.000	0.500	-0.007	0.583	-0.019
1.083	0.006	0.833	0.000	0.750	-0.013
1.167	0.000	3.000	0.006	1.000	-0.007
1.417	0.006			1.500	-0.013
1.667	0.000			1.750	-0.007
1.833	0.006			1.917	-0.013
1.917	0.000			2.000	-0.007
2.500	0.005			2.500	-0.158
				3.000	-0.007
				3.500	-0.013
				4.000	-0.007
				5.500	-0.013
				6.000	-0.007
				8.000	-0.013
				11.000	-0.019
				12.000	-0.026

K=4.0E-2 CM/SEC

3.9E-2 CM/SEC

K=0.3E-2 CM/SEC

# DBN-89-04B



o o o o o TEST NO. 1  
● ● ● ● ● TEST NO. 2  
Δ Δ Δ Δ Δ TEST NO. 3

WELL D9N-02-04B  
 WELL DIAMETER= 8.125 FT, SCREEN LENGTH=10 FT, BORE DIAMETER= 7 FT

TEST 1		TEST 2		TEST 3	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-0.627	0.008	-1.387	0.008	-2.243
0.017	-0.500	0.017	-1.128	0.017	-1.896
0.025	-0.405	0.025	-0.887	0.025	-1.451
0.033	-0.335	0.033	-0.703	0.033	-1.178
0.042	-0.278	0.042	-0.576	0.042	-0.975
0.050	-0.234	0.050	-0.475	0.050	-0.830
0.058	-0.202	0.058	-0.399	0.058	-0.716
0.067	-0.177	0.067	-0.343	0.067	-0.627
0.075	-0.152	0.075	-0.304	0.075	-0.545
0.083	-0.126	0.083	-0.266	0.083	-0.481
0.100	-0.095	0.100	-0.209	0.100	-0.367
0.117	-0.076	0.117	-0.164	0.117	-0.285
0.133	-0.057	0.133	-0.120	0.133	-0.228
0.150	-0.044	0.150	-0.095	0.150	-0.177
0.167	-0.038	0.167	-0.076	0.167	-0.145
0.183	-0.031	0.183	-0.063	0.183	-0.114
0.200	-0.025	0.200	-0.044	0.200	-0.095
0.217	-0.019	0.217	-0.038	0.217	-0.076
0.233	-0.012	0.233	-0.031	0.233	-0.063
0.257	-0.006	0.250	-0.025	0.250	-0.050
0.333	0.000	0.267	-0.012	0.267	-0.038
0.583	0.006	0.300	-0.006	0.283	-0.031
1.000	0.000	0.317	-0.012	0.300	-0.025
1.083	0.006	0.333	0.000	0.317	-0.019
1.167	0.000	0.417	0.006	0.417	0.000
1.500	0.006	0.500	0.012	0.657	0.006
1.583	0.000	1.750	0.006	1.083	0.000
		1.833	0.012	4.500	-0.006
		2.000	0.006	5.000	0.000
		2.500	0.012	8.000	-0.006
		3.000	0.006	8.500	0.000
				9.500	-0.006
				10.000	0.000

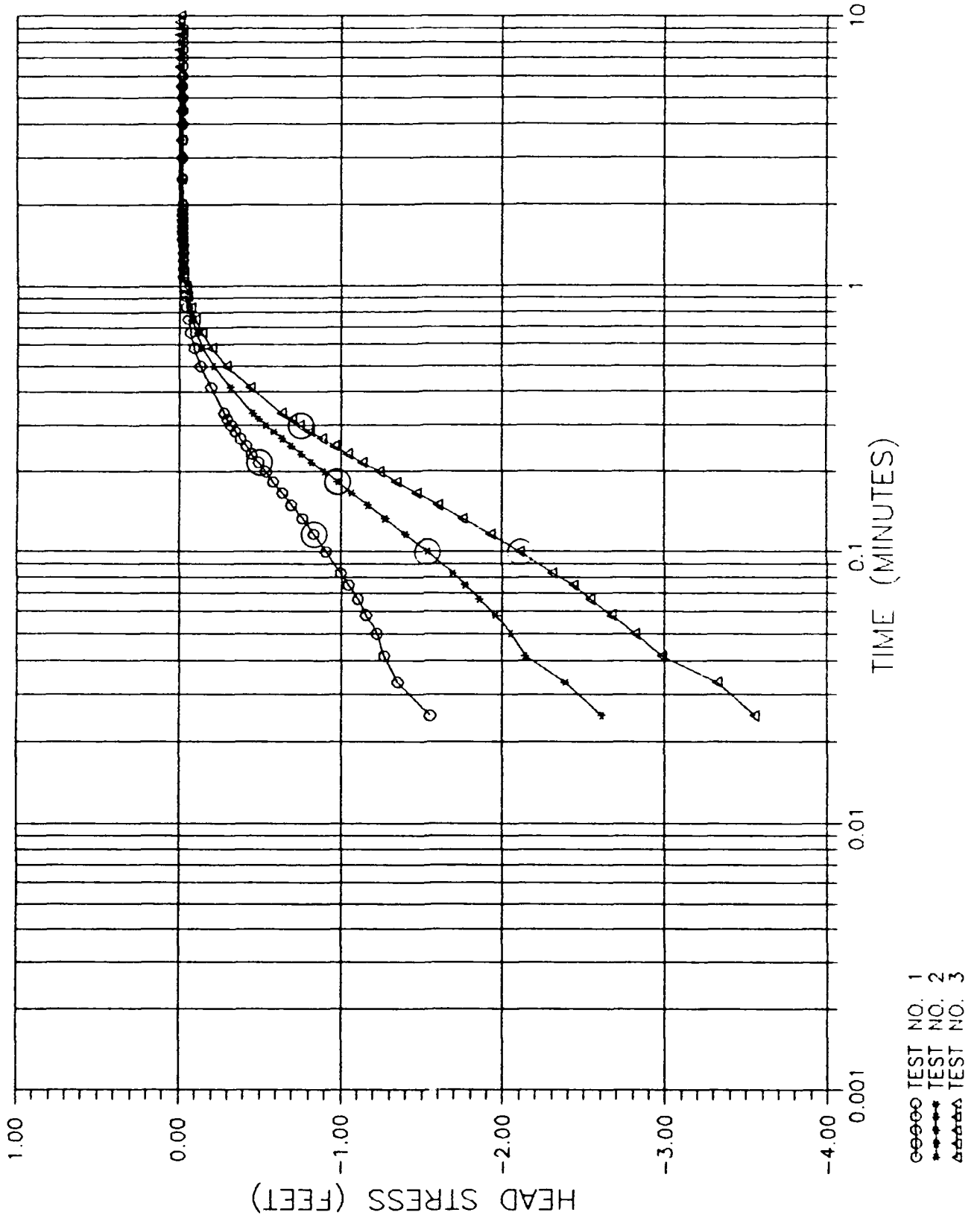
K=4.2E-2 CM/SEC

K=5.0E-2 CM/SEC

K=5.1E-2 CM/SEC



# ELM-89-01



WELL ELM-89-01

WELL DIAMETER=0.3125FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.75FT

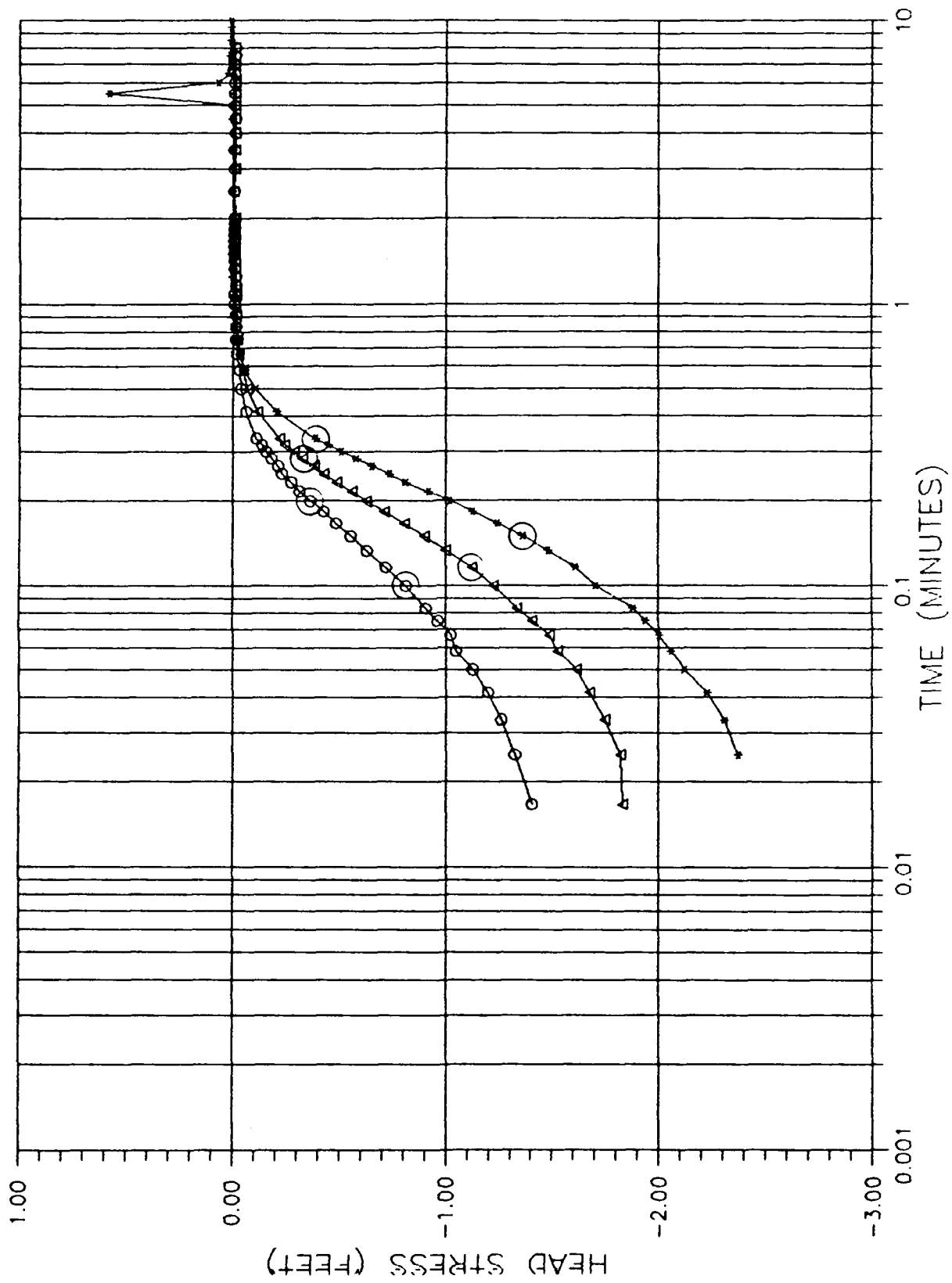
TEST 1		TEST 2		TEST 3	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.025	-1.552	0.025	-2.612	0.025	-3.558
0.033	-1.350	0.033	-2.385	0.033	-3.331
0.042	-1.268	0.042	-2.139	0.042	-2.990
0.050	-1.224	0.050	-2.050	0.050	-2.826
0.058	-1.155	0.058	-1.956	0.058	-2.681
0.067	-1.104	0.067	-1.855	0.067	-2.549
0.075	-1.047	0.075	-1.767	0.075	-2.442
0.083	-0.997	0.083	-1.691	0.083	-2.309
0.100	-0.959	0.100	-1.639	0.100	-2.174
0.117	-0.933	0.117	-1.401	0.117	-1.981
0.133	-0.764	0.133	-1.275	0.133	-1.761
0.150	-0.694	0.150	-1.167	0.150	-1.609
0.167	-0.638	0.167	-1.066	0.167	-1.477
0.183	-0.581	0.183	-0.978	0.183	-1.351
0.200	-0.537	0.200	-0.896	0.200	-1.243
0.217	-0.492	0.217	-0.820	0.217	-1.142
0.233	-0.449	0.233	-0.757	0.233	-1.049
0.250	-0.417	0.250	-0.694	0.250	-0.966
0.267	-0.379	0.267	-0.639	0.267	-0.890
0.283	-0.347	0.283	-0.587	0.283	-0.814
0.300	-0.322	0.300	-0.537	0.300	-0.751
0.317	-0.297	0.317	-0.492	0.317	-0.701
0.333	-0.278	0.333	-0.455	0.333	-0.638
0.417	-0.196	0.417	-0.316	0.417	-0.449
0.500	-0.133	0.500	-0.215	0.500	-0.304
0.583	-0.095	0.583	-0.146	0.583	-0.209
0.667	-0.070	0.667	-0.108	0.667	-0.146
0.750	-0.057	0.750	-0.076	0.750	-0.108
0.833	-0.045	0.833	-0.057	0.833	-0.077
0.917	-0.038	0.917	-0.045	0.917	-0.058
1.000	-0.032	1.000	-0.036	1.000	-0.051
1.083	-0.026	1.083	-0.026	1.083	-0.039
1.500	-0.019	1.333	-0.019	1.167	-0.032
		1.583	-0.013	1.333	-0.026
		3.500	-0.007	1.667	-0.020
		6.000	-0.013	1.750	-0.026
		6.500	-0.007	1.917	-0.020
		7.000	-0.013	3.000	-0.013
		7.500	-0.007	3.500	-0.020
		8.000	-0.013	4.000	-0.013
		9.000	-0.007	6.500	-0.007
				10.000	-0.013
				11.000	-0.007

K=8.0E-3 CM/SEC

K=8.3E-3 CM/SEC

K=8.2E-3 CM/SEC

ELM-89-05



o-o-o-o-o TEST NO. 1  
- - - - - TEST NO. 2  
^ - ^ - ^ TEST NO. 3

WELL BLM-89-05  
 WELL DIAMETER=0.3125FT, SCREEN LENGTH=151FT, BORING DIAMETER=0.75FT

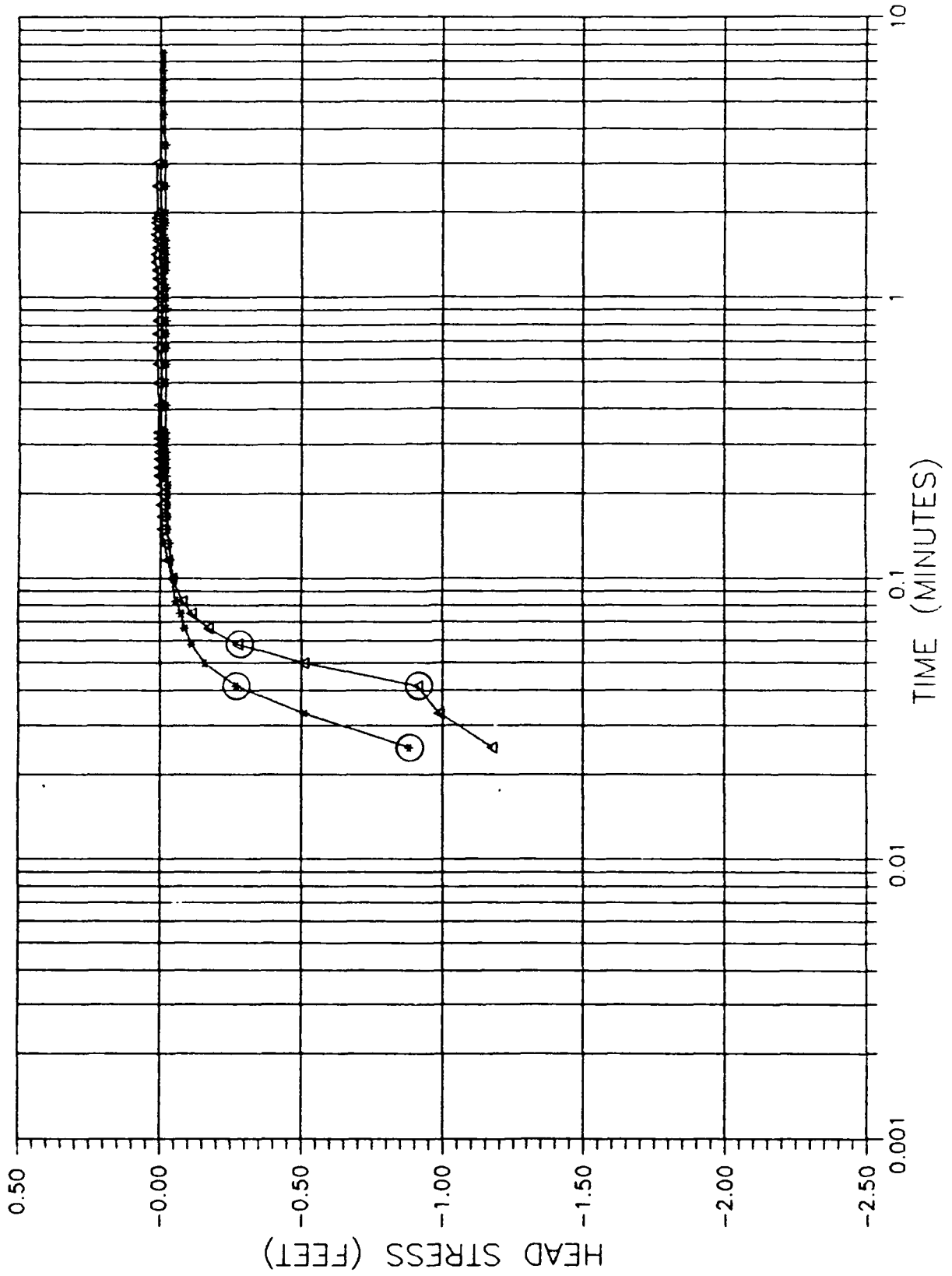
TEST 1		TEST 2		TEST 3	
TIME MIN	HEAD FEET	TIME MIN	HEAD FEET	TIME MIN	HEAD FEET
0.017	-1.407	0.025	-2.372	0.017	-1.830
0.025	-1.325	0.033	-2.309	0.025	-1.823
0.033	-1.262	0.042	-2.227	0.033	-1.743
0.042	-1.199	0.050	-2.120	0.042	-1.679
0.050	-1.129	0.058	-2.057	0.050	-1.615
0.058	-1.047	0.067	-2.000	0.058	-1.527
0.067	-1.022	0.075	-1.937	0.067	-1.489
0.075	-0.965	0.083	-1.880	0.075	-1.497
0.083	-0.909	0.100	-1.703	0.083	-1.338
0.100	-0.814	0.117	-1.609	0.100	-1.224
0.117	-0.720	0.133	-1.483	0.117	-1.123
0.133	-0.631	0.150	-1.353	0.133	-1.003
0.150	-0.556	0.167	-1.243	0.150	-0.902
0.167	-0.486	0.183	-1.129	0.167	-0.809
0.183	-0.429	0.200	-1.022	0.183	-0.713
0.200	-0.366	0.217	-0.921	0.200	-0.631
0.217	-0.316	0.233	-0.814	0.217	-0.562
0.233	-0.278	0.250	-0.739	0.233	-0.492
0.250	-0.234	0.267	-0.656	0.250	-0.429
0.267	-0.215	0.283	-0.581	0.267	-0.385
0.283	-0.183	0.300	-0.511	0.283	-0.323
0.300	-0.152	0.317	-0.448	0.300	-0.291
0.317	-0.139	0.333	-0.392	0.317	-0.245
0.333	-0.114	0.417	-0.209	0.333	-0.221
0.417	-0.064	0.500	-0.108	0.417	-0.120
0.500	-0.038	0.583	-0.057	0.500	-0.070
0.583	-0.032	0.667	-0.032	0.583	-0.051
0.667	-0.019	0.750	-0.019	0.667	-0.032
0.750	-0.013	0.833	-0.013	0.750	-0.026
1.000	-0.007	0.917	-0.007	0.833	-0.013
1.167	-0.013	1.250	0.000	0.917	-0.019
1.333	-0.007	3.000	-0.007	1.000	-0.013
4.000	-0.013	3.500	0.000	1.083	-0.019
5.000	-0.007	5.500	0.580	1.167	-0.013
7.500	-0.013	6.000	0.069	1.500	-0.007
		6.500	0.018	1.583	-0.013
		7.000	0.012	1.667	-0.007
		8.000	0.006	1.750	-0.013
				1.833	-0.007
				1.917	-0.013
				2.500	-0.007
				3.000	-0.013

K=1.2E-2 CM/SEC

K=1.0E-2 CM/SEC

K=1.1E-2 CM/SEC

ELM-89-07



\*\*\*\*\* TEST NO. 1  
▲▲▲▲▲ TEST NO. 2

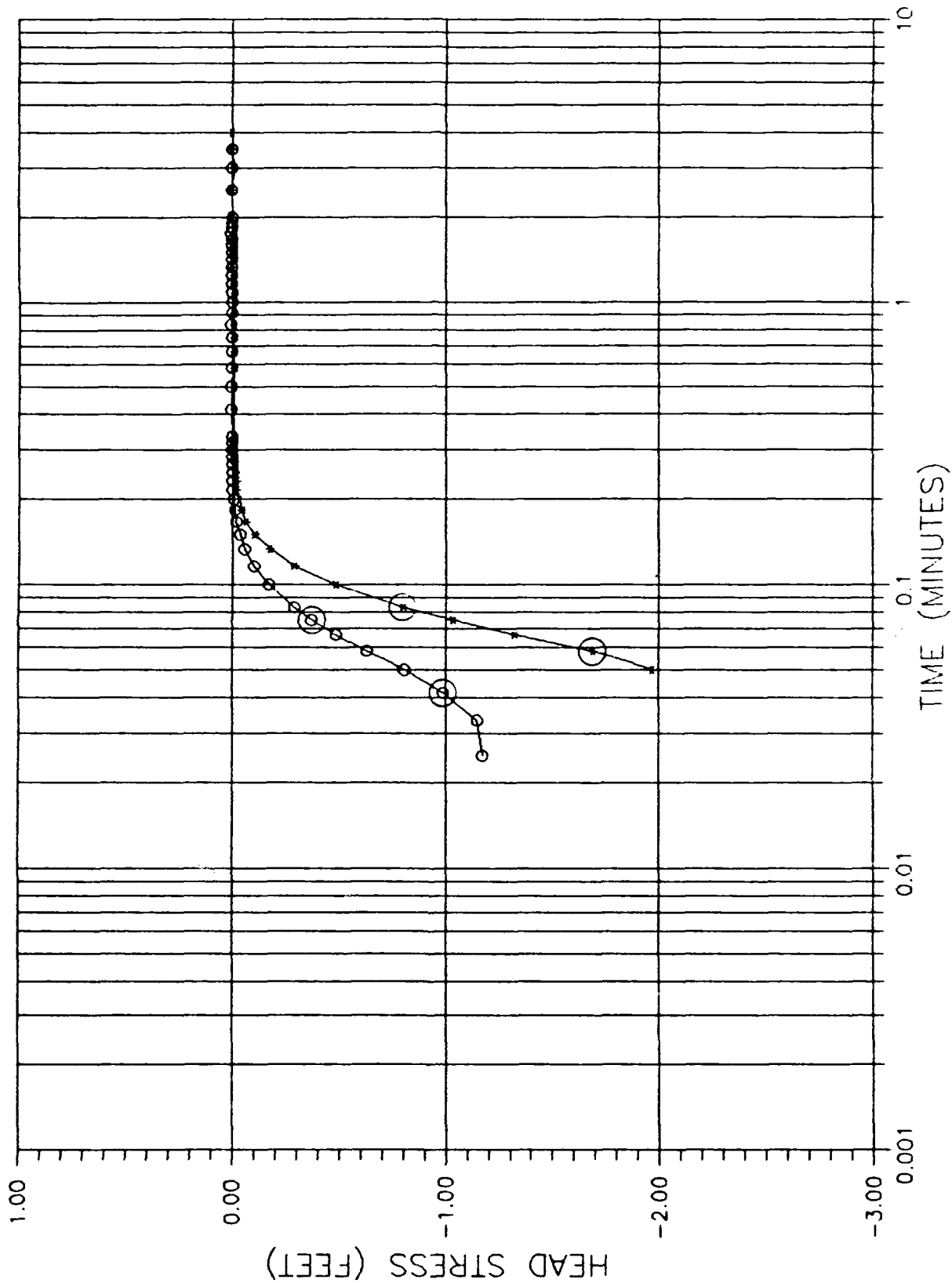
WELL ELM-89-07  
 WELL DIAMETER=0.3125FT, SCREEN LENGTH=10FT, BOPING DIAMETER=0.75FT

TEST 1		TEST 2	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.025	-0.883	0.025	-1.179
0.033	-0.810	0.033	-0.990
0.042	-0.821	0.042	-0.914
0.050	-0.157	0.050	-0.810
0.058	-0.113	0.058	-0.827
0.067	-0.088	0.067	-0.170
0.075	-0.075	0.075	-0.113
0.083	-0.056	0.083	-0.081
0.100	-0.044	0.100	-0.044
0.117	-0.037	0.117	-0.025
0.133	-0.031	0.133	-0.012
0.150	-0.025	0.150	-0.006
0.233	-0.018	0.183	0.000
1.167	-0.012	0.233	0.006
1.250	-0.010	0.500	0.012
1.667	-0.012	1.333	0.018
1.833	-0.016	1.500	0.012
1.917	-0.012	1.667	0.018
2.000	-0.018	1.750	0.012
4.000	-0.012	1.833	0.018
		2.000	0.012

K=1.0E-1 CM/SEC

K=1.0E-1 CM/SEC

ELM-89-08



ooooo TEST NO. 1  
----- TEST NO. 2

WELL ELM-89-08

WELL DIAMETER=0.3105FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.76FT

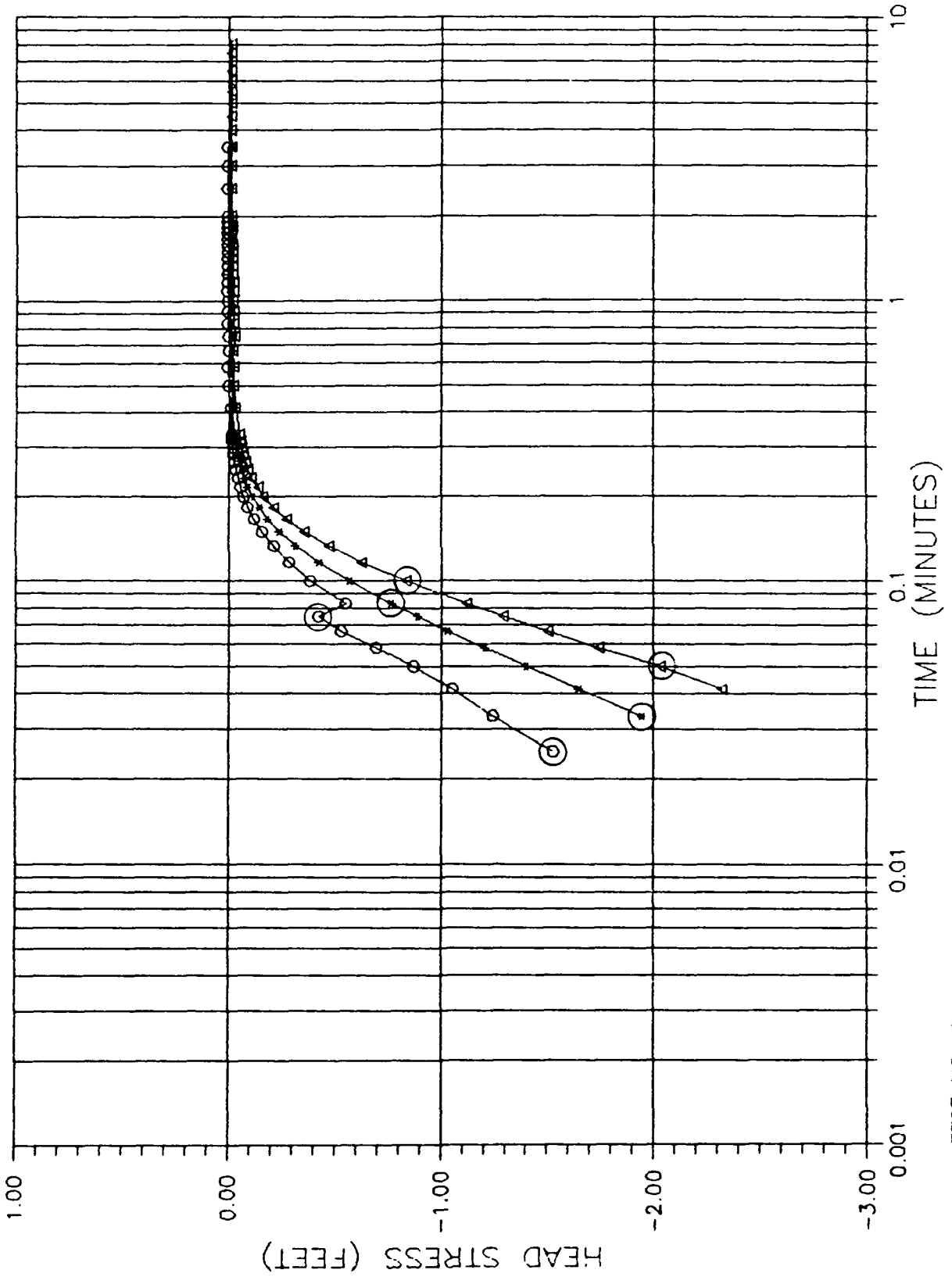
TEST 1		TEST 2	
TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN	FEET
0.025	-1.174	0.050	-1.968
0.033	-1.148	0.053	-1.691
0.042	-0.991	0.067	-1.325
0.051	-0.838	0.075	-1.035
0.058	-0.631	0.083	-0.802
0.067	-0.486	0.100	-0.486
0.075	-0.373	0.117	-0.291
0.083	-0.291	0.133	-0.177
0.100	-0.171	0.150	-0.108
0.117	-0.101	0.167	-0.064
0.133	-0.057	0.183	-0.045
0.150	-0.038	0.200	-0.032
0.167	-0.019	0.217	-0.019
0.183	-0.013	0.250	-0.013
0.200	-0.007	0.267	-0.007
0.217	0.000	1.333	0.000
0.417	0.006	1.417	-0.007
0.583	0.000	2.000	0.000
0.833	0.006	3.000	-0.007
0.917	0.000	3.500	0.000
1.750	0.006		
1.833	0.000		

$K=4.1E-2$  CM/SEC

$K=4.4E-2$  CM/SEC



# ELM-89-09



○ ○ ○ ○ ○ TEST NO. 1  
\* \* \* \* \* TEST NO. 2  
△ △ △ △ △ TEST NO. 3

WELL ELM-89-03

WELL DIAMETER=0.3165FT, SCREEN LENGTH=15FT, BOREHOLE DIAMETER=0.765FT

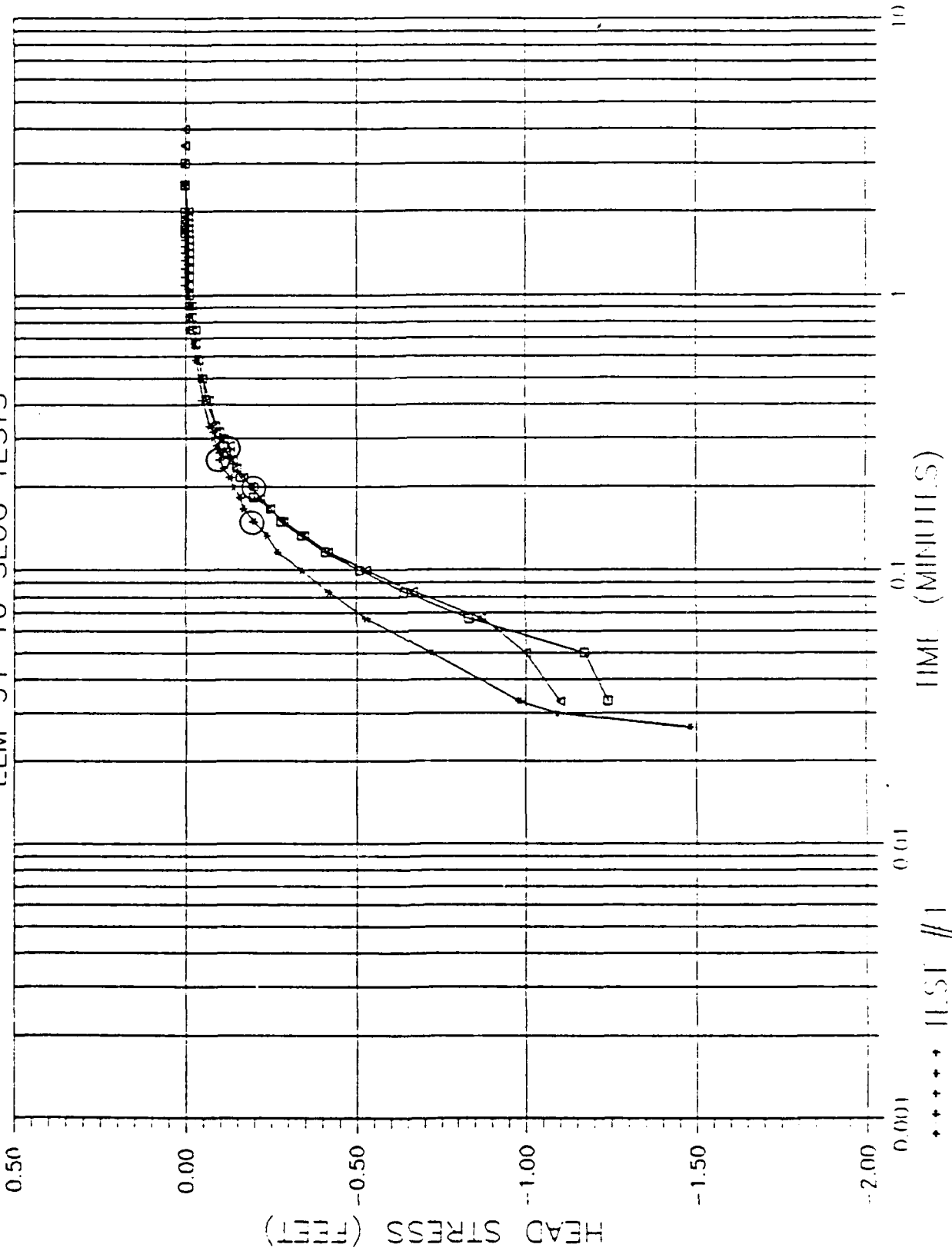
TEST 1		TEST 2		TEST 3	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.025	-1.527	0.033	-1.943	0.042	-0.322
0.033	-1.243	0.042	-1.647	0.050	-0.031
0.040	-1.054	0.050	-1.401	0.058	-1.741
0.050	-0.871	0.058	-1.205	0.067	-1.502
0.058	-0.694	0.067	-1.023	0.075	-1.293
0.067	-0.530	0.075	-0.890	0.083	-1.117
0.075	-0.403	0.083	-0.764	0.100	-0.833
0.083	-0.549	0.100	-0.568	0.117	-0.625
0.100	-0.385	0.117	-0.423	0.133	-0.474
0.117	-0.284	0.133	-0.316	0.150	-0.360
0.133	-0.215	0.150	-0.240	0.167	-0.272
0.150	-0.158	0.167	-0.183	0.183	-0.215
0.167	-0.120	0.183	-0.146	0.200	-0.164
0.183	-0.089	0.200	-0.114	0.217	-0.139
0.200	-0.070	0.217	-0.089	0.233	-0.103
0.217	-0.057	0.233	-0.076	0.250	-0.089
0.233	-0.045	0.250	-0.064	0.267	-0.082
0.250	-0.032	0.267	-0.051	0.283	-0.070
0.267	-0.026	0.283	-0.045	0.300	-0.064
0.283	-0.019	0.300	-0.038	0.317	-0.057
0.317	-0.013	0.317	-0.032	0.333	-0.051
0.417	-0.007	0.333	-0.026	0.417	-0.032
0.500	0.000	0.417	-0.019	0.500	-0.026
0.583	0.006	0.583	-0.013	0.667	-0.019
0.667	0.000	0.833	-0.007	0.750	-0.032
0.750	0.000	1.250	0.000	0.833	-0.026
0.833	0.006	1.333	-0.007	1.000	-0.019
		3.500	-0.013	1.083	-0.026
				1.250	-0.019
				1.667	-0.013
				1.833	-0.019
				1.917	-0.013

K=3.9E-2 CM/SEC

K=2.8E-2 CM/SEC

K=2.6E-2 CM/SEC

# ELM-91-10 SLUG TESTS



+ + + + + TEST #1  
 o o o o o TEST #2  
 Δ Δ Δ Δ Δ TEST #3

WELL ELM-91-10  
 WELL DIAMETER=0.3125FT. SCREEN LENG. =20FT. BORING DIAMETER=0.75FT

TEST 1		TEST 2		TEST 3	
MINUTES	FEET	MINUTES	FEET	MINUTES	FEET
0.0033	0.01	0.0033	0.01	0.0033	0
0.0066	0	0.0066	0.01	0.0066	-0.08
0.0099	-0.31	0.0099	-0.46	0.0099	-0.73
0.0133	-0.69	0.0133	-0.91	0.0133	-0.97
0.0166	-0.67	0.0166	-0.8	0.0166	-0.74
0.02	-0.67	0.02	-0.86	0.02	-0.59
0.0233	-0.76	0.0233	-0.23	0.0233	-0.02
0.0266	-1.48	0.0266	-0.08	0.0266	-0.15
0.03	-1.09	0.03	-0.77	0.03	-0.75
0.0333	-0.98	0.0333	-1.24	0.0333	-1.1
0.05	-0.72	0.05	-1.17	0.05	-1
0.0666	-0.53	0.0666	-0.83	0.0666	-0.87
0.0833	-0.42	0.0833	-0.64	0.0833	-0.87
0.1	-0.34	0.1	-0.51	0.1	-0.53
0.1166	-0.27	0.1166	-0.41	0.1166	-0.42
0.1333	-0.24	0.1333	-0.34	0.1333	-0.35
0.15	-0.2	0.15	-0.28	0.15	-0.29
0.1666	-0.17	0.1666	-0.25	0.1666	-0.25
0.1833	-0.16	0.1833	-0.2	0.1833	-0.22
0.2	-0.14	0.2	-0.2	0.2	-0.19
0.2166	-0.13	0.2166	-0.16	0.2166	-0.17
0.2333	-0.11	0.2333	-0.15	0.2333	-0.15
0.25	-0.1	0.25	-0.14	0.25	-0.14
0.2666	-0.1	0.2666	-0.12	0.2666	-0.13
0.2833	-0.09	0.2833	-0.11	0.2833	-0.13
0.3	-0.08	0.3	-0.11	0.3	-0.1
0.3166	-0.08	0.3166	-0.1	0.3166	-0.1
0.3333	-0.07	0.3333	-0.09	0.3333	-0.09
0.4167	-0.05	0.4167	-0.08	0.4167	-0.07
0.5	-0.04	0.5	-0.05	0.5	-0.05
0.5833	-0.03	0.5833	-0.04	0.5833	-0.04
0.6667	-0.02	0.6667	-0.03	0.6667	-0.03
0.75	-0.01	0.75	-0.02	0.75	-0.03
0.8333	-0.01	0.8333	-0.02	0.8333	-0.02
0.9167	-0.01	0.9167	-0.01	0.9167	-0.02
1	-0.01	1	-0.01	1	-0.01
1.0833	0	1.0833	-0.01	1.0833	-0.01
1.1667	0	1.1667	-0.01	1.1667	-0.01
1.25	0	1.25	-0.01	1.25	-0.01
1.3333	0	1.3333	-0.01	1.3333	-0.01
1.4166	0	1.4166	-0.01	1.4166	-0.01
1.5	0	1.5	-0.01	1.5	-0.01
1.5833	0	1.5833	-0.01	1.5833	-0.01
1.6667	0	1.6667	0	1.6667	-0.01
1.75	0	1.75	0	1.75	-0.01
1.8333	0	1.8333	0	1.8333	-0.01
1.9167	0	1.9167	0	1.9167	-0.01
2	0	2	0	2	-0.01
2.5	0	2.5	0	2.5	0
		3	0	3	0
				3.5	0
				4	0

Hvorslev:

K = 0.002 CM/SEC

Bouwer and Rice:

K = 0.011 CM/SEC

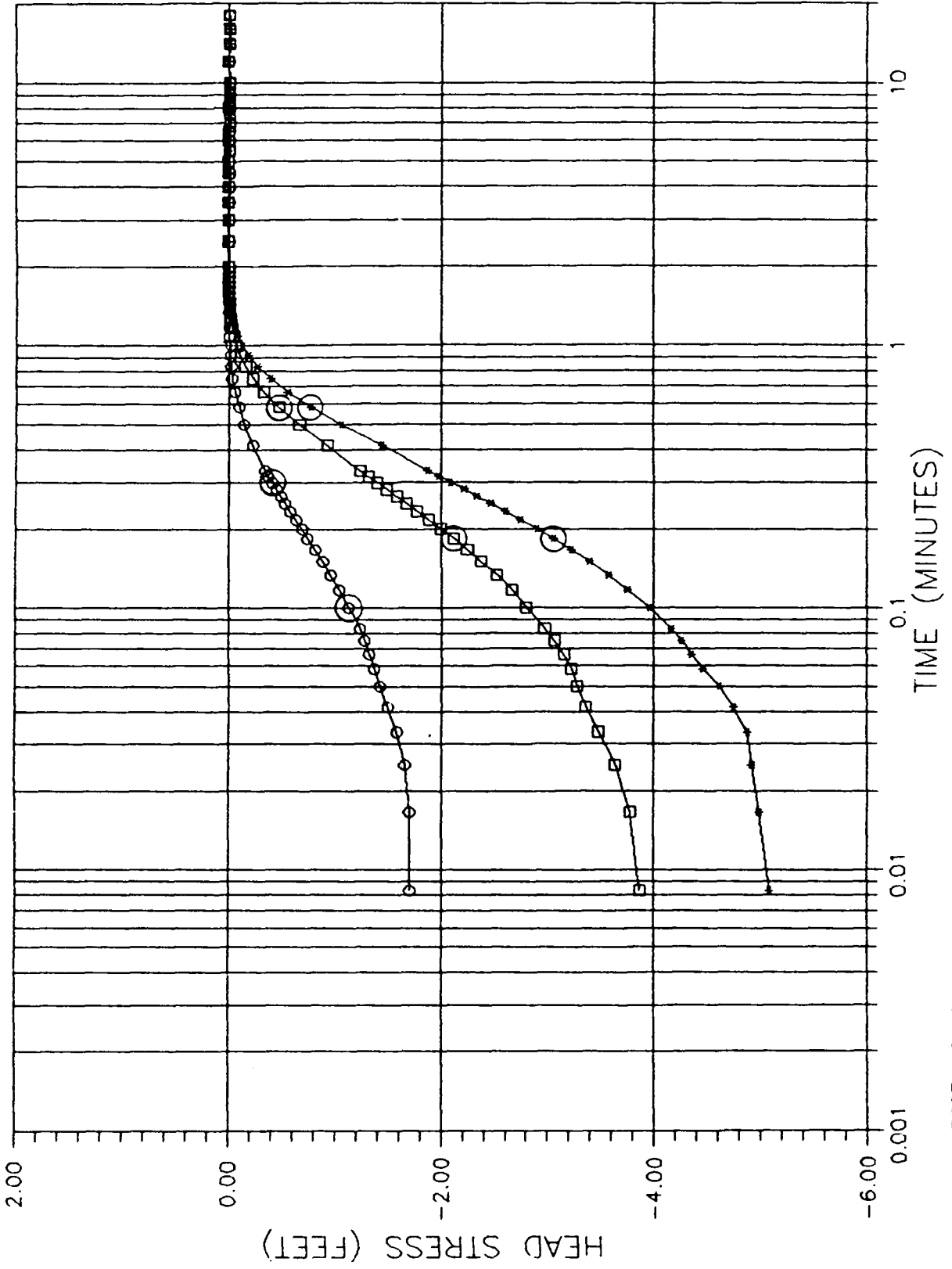
K = 0.002 CM/SEC

K = 0.013 CM/SEC

K = 0.002 CM/SEC

K = 0.011 CM/SEC

ELN-82-03C



oooo TEST NO. 1  
\*-\*-\* TEST NO. 2  
oooo TEST NO. 3

ELN-82-030

WELL DIAMETER=10.00FT. SCREEN LENGTH=12FT. BOPING DIAMETER=10.00FT

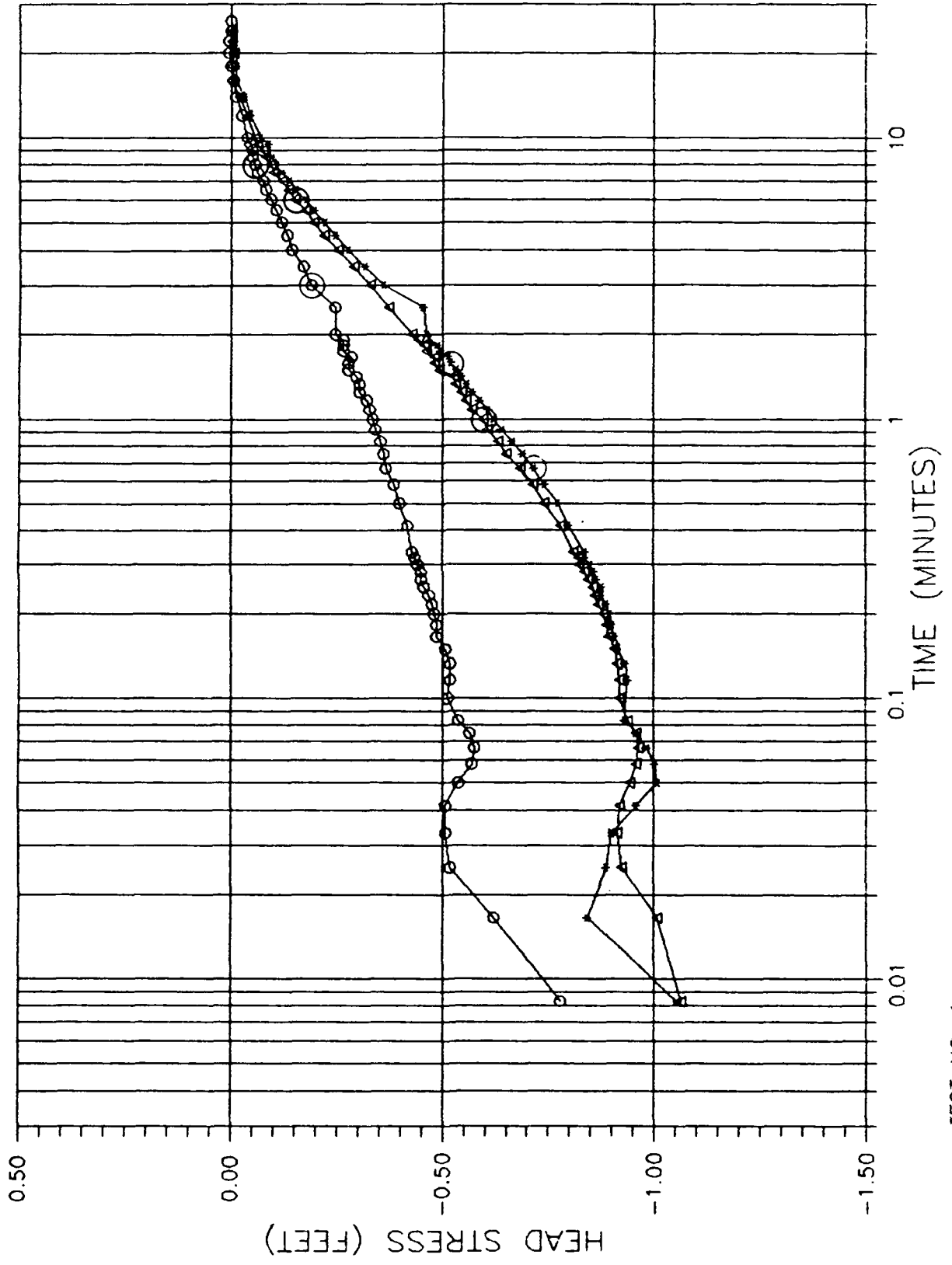
TEST 1		TEST 2		TEST 3	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.000	-1.704	0.000	-5.092	0.000	-3.866
0.025	-1.660	0.017	-4.997	0.017	-3.777
0.033	-1.584	0.025	-4.917	0.025	-3.637
0.042	-1.496	0.033	-4.879	0.033	-3.479
0.050	-1.425	0.040	-4.746	0.042	-3.259
0.058	-1.363	0.050	-4.612	0.050	-3.282
0.067	-1.324	0.058	-4.461	0.058	-3.225
0.075	-1.280	0.067	-4.353	0.067	-3.156
0.083	-1.235	0.075	-4.258	0.075	-3.087
0.100	-1.134	0.083	-4.163	0.083	-2.972
0.117	-1.045	0.100	-3.960	0.100	-2.891
0.133	-0.963	0.117	-3.751	0.117	-2.666
0.150	-0.892	0.133	-3.574	0.133	-2.522
0.167	-0.817	0.150	-3.396	0.150	-2.376
0.183	-0.747	0.167	-3.215	0.167	-2.249
0.200	-0.697	0.183	-3.054	0.183	-2.123
0.217	-0.640	0.200	-2.932	0.200	-2.002
0.233	-0.583	0.217	-2.750	0.217	-1.885
0.250	-0.532	0.233	-2.611	0.233	-1.760
0.267	-0.494	0.250	-2.471	0.250	-1.679
0.283	-0.449	0.267	-2.338	0.267	-1.534
0.300	-0.411	0.283	-2.212	0.283	-1.489
0.317	-0.373	0.300	-2.091	0.300	-1.400
0.333	-0.343	0.317	-1.977	0.317	-1.313
0.417	-0.228	0.333	-1.875	0.333	-1.242
0.500	-0.145	0.417	-1.444	0.417	-0.931
0.583	-0.101	0.500	-1.064	0.500	-0.671
0.667	-0.057	0.583	-0.779	0.583	-0.475
0.750	-0.031	0.667	-0.557	0.667	-0.329
0.833	-0.025	0.750	-0.399	0.750	-0.234
0.917	-0.019	0.833	-0.272	0.833	-0.158
1.000	-0.006	0.917	-0.190	0.917	-0.107
1.333	0.000	1.000	-0.125	1.000	-0.069
1.417	-0.006	1.083	-0.092	1.083	-0.050
1.600	-0.012	1.167	-0.050	1.167	-0.031
1.750	-0.006	1.250	-0.021	1.250	-0.019
1.900	-0.012	1.333	-0.012	1.333	-0.006
2.000	-0.006	1.417	-0.006	1.500	0.000
2.500	-0.012	1.500	0.000	5.500	-0.006
3.000	-0.006	1.583	0.006	6.000	0.000
3.500	-0.012	1.917	0.012	7.000	-0.006
4.000	0.000	3.000	0.006	8.000	0.000
4.500	0.006	4.000	0.000	8.500	-0.006
5.000	0.006	5.000	0.006	12.000	0.000
5.500	0.006	6.000	0.006	14.000	-0.006
6.000	0.006	6.500	0.000		
6.500	0.006	7.500	0.006		
7.500	0.000	9.000	0.000		
8.000	-0.006	14.000	-0.006		

K=9.0E-3 CM/SEC

K=6.7E-3 CM/SEC

K=6.1E-3 CM/SEC

ELN-82-04A



o-o-o-o-o TEST NO. 1  
\*-\*-\*-\*-\* TEST NO. 2  
Δ-Δ-Δ-Δ-Δ TEST NO. 3

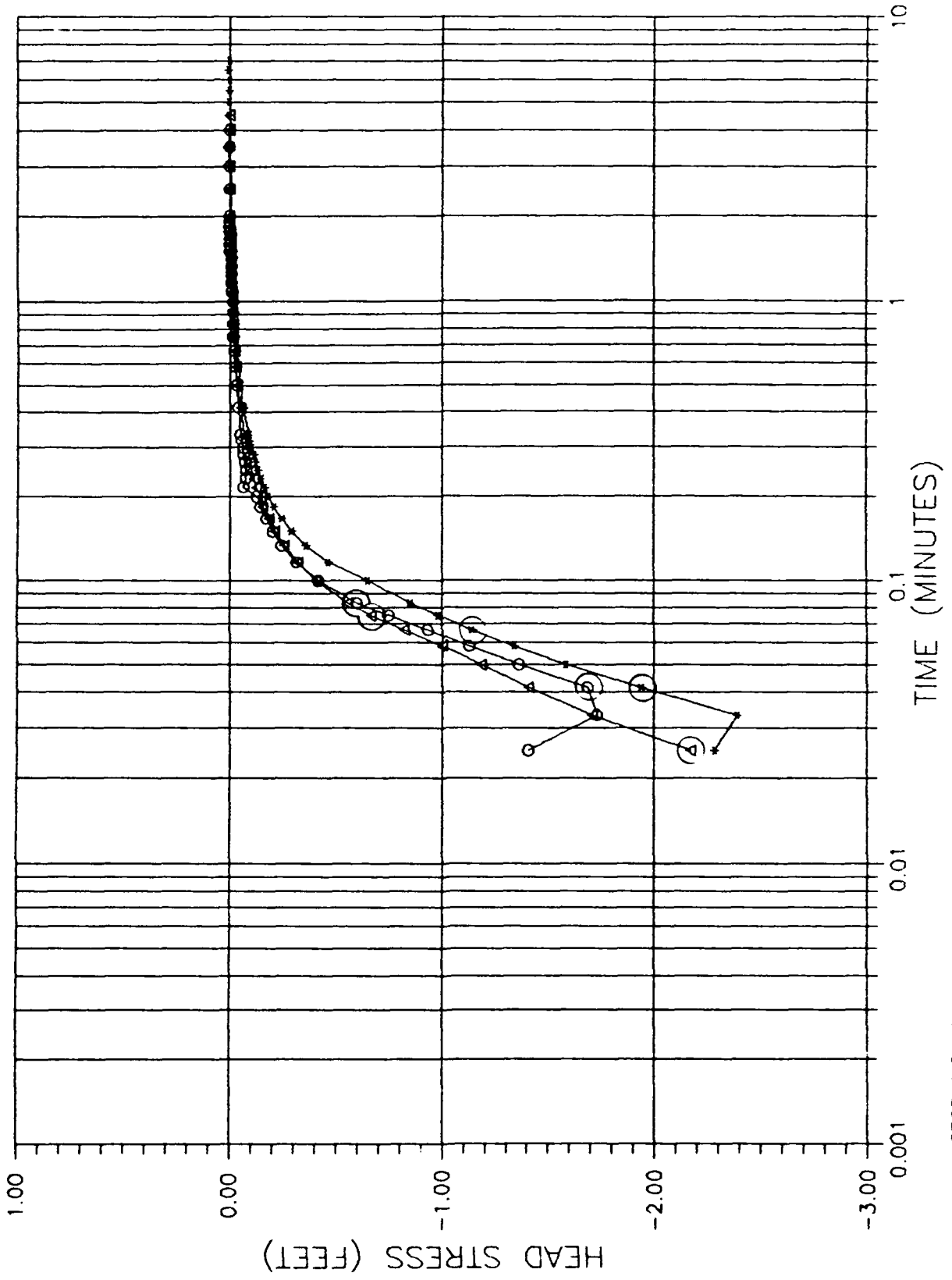
WELD RUN-8-48

-SOL DIAMETERS- DISTANCE		SCREEN LENGTH-DIST		SCREEN DIAMETERS		TEST	
TEST 1	TEST 2	TEST 1	TEST 2	TEST 1	TEST 2	TEST 1	TEST 2
TIME	HEAD	TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN	FEET	MIN	FEET	MIN	FEET	MIN	FEET
0.008	-0.779	0.008	-0.802	0.500	-0.198	0.008	-1.064
0.017	-0.801	0.017	-0.841	0.600	-0.177	0.017	-1.007
0.025	-0.519	0.025	-0.887	0.500	-0.152	0.025	-0.908
0.033	-0.507	0.033	-0.933	0.000	-0.139	0.033	-0.910
0.050	-0.535	0.040	-0.956	0.500	-0.120	0.040	-0.917
0.058	-0.570	0.050	-1.007	0.000	-0.107	0.050	-0.944
0.067	-0.576	0.058	-1.001	0.500	-0.095	0.058	-0.956
0.075	-0.554	0.067	-0.992	0.000	-0.088	0.067	-0.968
0.093	-0.538	0.075	-0.956	10.000	-0.069	0.075	-0.969
0.100	-0.513	0.083	-0.931	12.000	-0.044	0.083	-0.907
0.117	-0.519	0.117	-0.937	14.000	-0.031	0.100	-0.913
0.150	-0.507	0.133	-0.931	16.000	-0.012	0.133	-0.910
0.167	-0.497	0.150	-0.912	20.000	-0.005	0.150	-0.905
0.200	-0.481	0.167	-0.908			0.167	-0.893
0.217	-0.475	0.183	-0.899	K=4.3E-4 CM/SEC		0.183	-0.887
0.233	-0.468	0.200	-0.893			0.200	-0.890
0.250	-0.456	0.217	-0.887			0.217	-0.868
0.267	-0.449	0.233	-0.874			0.233	-0.861
0.300	-0.443	0.267	-0.861			0.350	-0.855
0.317	-0.437	0.283	-0.855			0.267	-0.842
0.333	-0.430	0.300	-0.849			0.293	-0.836
0.417	-0.416	0.317	-0.836			0.360	-0.823
0.500	-0.399	0.417	-0.799			0.333	-0.811
0.583	-0.366	0.500	-0.773			0.417	-0.779
0.667	-0.367	0.583	-0.741			0.500	-0.741
0.750	-0.361	0.667	-0.716			0.583	-0.716
0.833	-0.354	0.750	-0.690			0.667	-0.694
0.917	-0.340	0.833	-0.665			0.750	-0.652
1.000	-0.325	0.917	-0.640			0.833	-0.633
1.083	-0.329	1.000	-0.621			0.917	-0.608
1.167	-0.323	1.083	-0.608			1.000	-0.595
1.250	-0.304	1.167	-0.599			1.083	-0.570
1.417	-0.297	1.250	-0.570			1.167	-0.557
1.500	-0.278	1.333	-0.557			1.250	-0.545
1.667	-0.283	1.417	-0.545			1.333	-0.532
1.750	-0.266	1.500	-0.532			1.417	-0.526
2.000	-0.247	1.583	-0.519			1.500	-0.494
3.000	-0.192	1.667	-0.513			1.583	-0.481
3.500	-0.171	1.750	-0.494			1.750	-0.462
4.000	-0.145	1.833	-0.487			1.833	-0.456
4.500	-0.133	1.917	-0.468			1.917	-0.443
5.000	-0.100	2.000	-0.460			2.000	-0.433
5.500	-0.107	2.500	-0.456			2.500	-0.372
6.000	-0.095	3.000	-0.361			3.000	-0.329
6.500	-0.090	3.500	-0.316			3.500	-0.291
7.000	-0.076	4.000	-0.276			4.000	-0.259
7.500	-0.068	4.500	-0.247			4.500	-0.221
8.000	-0.057	5.000	-0.221			5.000	-0.196
8.500	-0.050						
9.500	-0.044						
10.000	-0.039						
12.000	-0.025						
14.000	-0.010						
16.000	-0.005						
18.000	0.000						

K=0.6E-4 CM/SEC



# ELN-89-04A



oooo TEST NO. 1  
\* \* \* \* \* TEST NO. 2  
△△△△△ TEST NO. 3

WELL EDN-89-04A

WELL DIAMETER=0.3125FT, SCREEN LENGTH=16FT, BORING DIAMETER=0.75FT

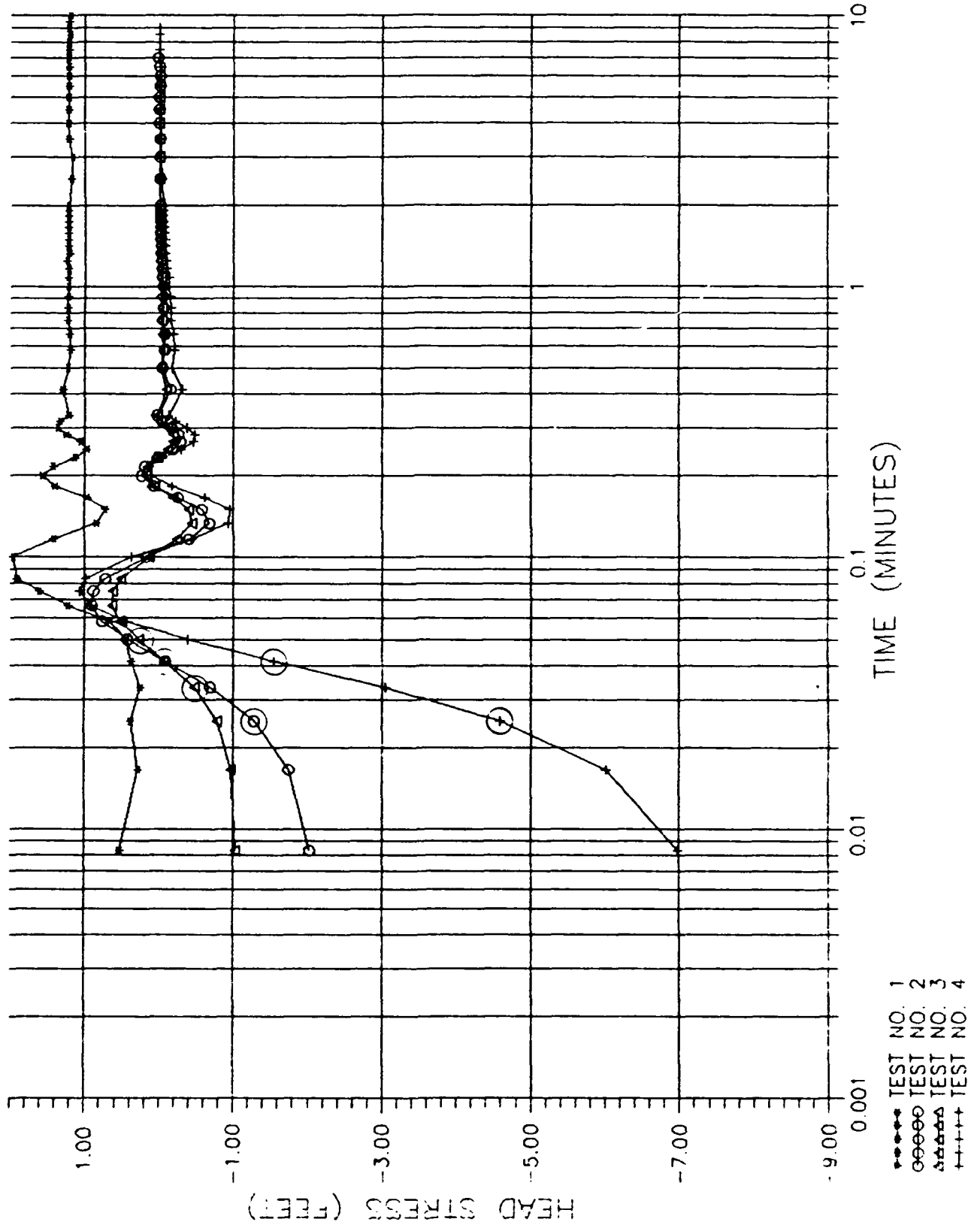
TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.025	-1.407	0.025	-2.284	0.025	-2.169
0.033	-1.729	0.033	-2.391	0.033	-1.709
0.042	-1.695	0.042	-1.937	0.042	-1.405
0.050	-1.363	0.050	-1.584	0.050	-1.185
0.058	-1.129	0.058	-1.339	0.058	-1.002
0.067	-0.934	0.067	-1.142	0.067	-0.826
0.075	-0.751	0.075	-0.954	0.075	-0.668
0.083	-0.600	0.083	-0.850	0.083	-0.555
0.100	-0.417	0.100	-0.650	0.100	-0.410
0.117	-0.316	0.117	-0.467	0.117	-0.321
0.133	-0.246	0.133	-0.360	0.133	-0.258
0.150	-0.202	0.150	-0.291	0.150	-0.214
0.167	-0.171	0.167	-0.246	0.167	-0.183
0.183	-0.146	0.183	-0.209	0.183	-0.157
0.200	-0.127	0.200	-0.183	0.200	-0.145
0.217	-0.064	0.217	-0.164	0.217	-0.125
0.233	-0.076	0.233	-0.146	0.233	-0.113
0.267	-0.070	0.250	-0.133	0.250	-0.101
0.283	-0.064	0.267	-0.120	0.267	-0.094
0.317	-0.057	0.283	-0.114	0.283	-0.088
0.333	-0.051	0.300	-0.101	0.300	-0.082
0.417	-0.038	0.317	-0.095	0.317	-0.075
0.500	-0.032	0.333	-0.089	0.333	-0.069
0.583	-0.026	0.417	-0.064	0.417	-0.050
0.667	-0.019	0.500	-0.051	0.500	-0.037
0.750	-0.013	0.583	-0.038	0.583	-0.031
1.083	-0.007	0.667	-0.032	0.667	-0.025
		0.833	-0.026	0.750	-0.019
		0.917	-0.019	0.917	-0.012
		1.167	-0.013	1.167	-0.006
		1.583	-0.007	1.833	0.000
		3.500	0.012	3.500	0.007
		4.900	-0.007	4.600	0.050
		4.500	0.000		
		6.500	0.006		

K=3.7E-2 CM/SEC

K=3.6E-2 CM/SEC

K=3.5E-2 CM/SEC

# ELN-89-04B



WELL SN-88-046

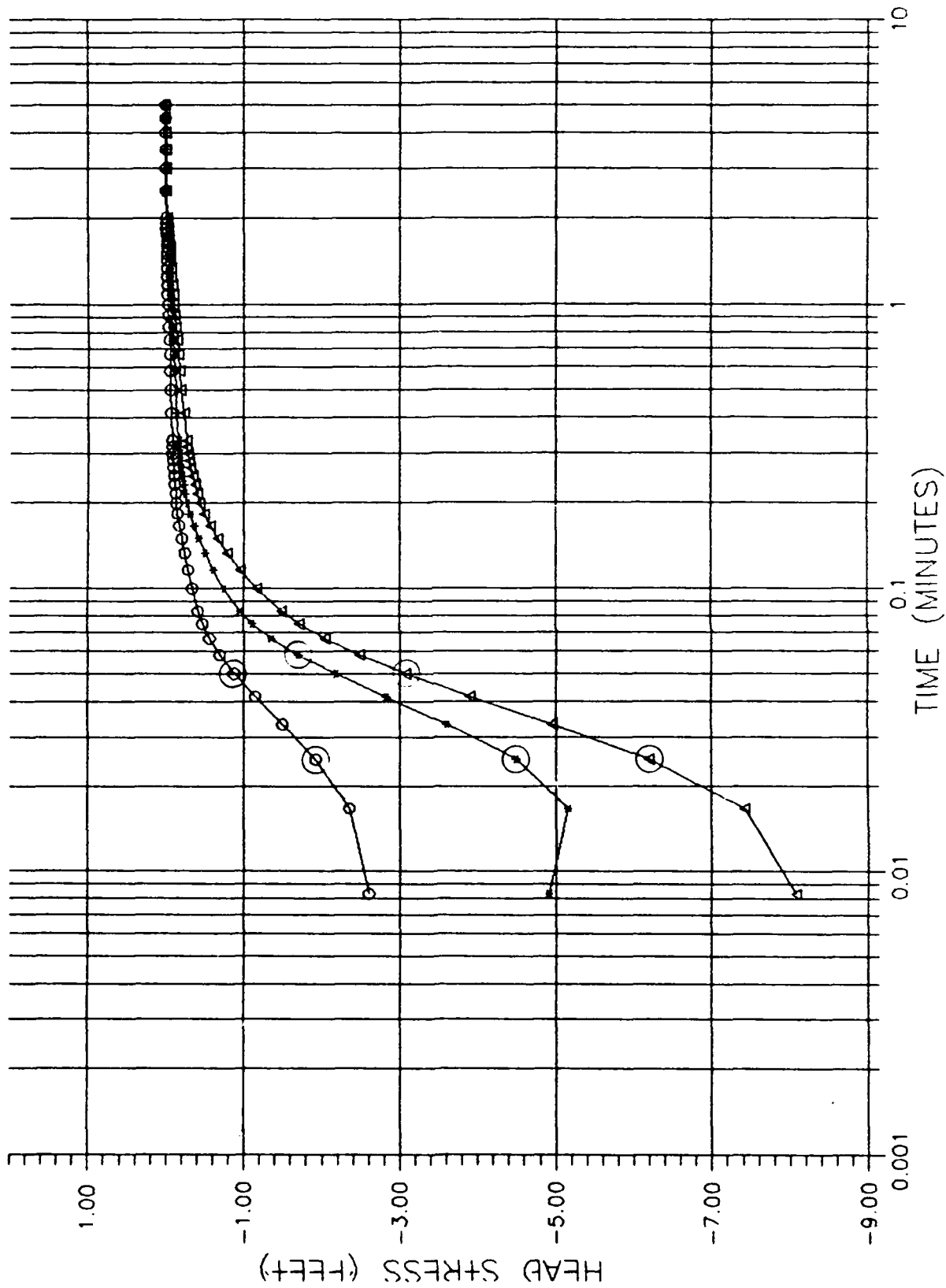
WELL DIAMETER=0.3105FT, SCREEN LENGTH=12FT, BORING DIAMETER=1.75FT

TEST 1		TEST 2		TEST 3		TEST 4	
TIME MIN	HEAD FEET	TIME MIN	HEAD FEET	TIME MIN	HEAD FEET	TIME MIN	HEAD FEET
0.008	0.529	0.008	-0.030	0.008	-1.034	0.008	-6.975
0.017	0.283	0.017	-1.747	0.017	-0.971	0.017	-6.017
0.025	0.378	0.025	-1.286	0.025	-0.782	0.025	-4.555
0.033	0.252	0.033	-0.687	0.033	-0.472	0.033	-0.052
0.042	0.372	0.042	-0.088	0.042	-0.069	0.042	-1.545
0.050	0.447	0.050	0.428	0.050	0.277	0.050	-0.384
0.058	0.666	0.058	0.769	0.058	0.558	0.058	0.435
0.067	1.223	0.067	0.908	0.067	0.642	0.067	0.927
0.075	1.608	0.075	0.883	0.075	0.624	0.075	1.072
0.083	1.911	0.083	0.725	0.083	0.510	0.083	0.996
0.100	1.961	0.100	0.170	0.100	0.138	0.100	0.384
0.117	1.410	0.117	-0.397	0.117	-0.239	0.117	-0.435
0.133	0.838	0.133	-0.681	0.133	-0.447	0.133	-0.939
0.150	0.719	0.150	-0.580	0.150	-0.403	0.150	-0.959
0.167	0.971	0.167	-0.252	0.167	-0.182	0.167	-0.611
0.183	1.400	0.183	0.075	0.183	0.050	0.183	-0.176
0.200	1.570	0.200	0.239	0.200	0.176	0.200	0.107
0.217	1.425	0.217	0.135	0.217	0.157	0.217	0.126
0.233	1.135	0.233	0.018	0.233	0.027	0.233	-0.050
0.250	0.977	0.250	-0.180	0.250	-0.107	0.250	-0.290
0.267	1.059	0.267	-0.283	0.267	-0.139	0.267	-0.460
0.283	1.248	0.283	-0.258	0.283	-0.182	0.283	-0.473
0.300	1.368	0.300	-0.157	0.300	-0.107	0.300	-0.372
0.317	1.337	0.317	-0.031	0.317	-0.018	0.317	-0.220
0.333	1.217	0.333	0.031	0.333	0.031	0.333	-0.119
0.417	1.232	0.417	-0.151	0.417	-0.100	0.417	-0.309
0.500	1.223	0.500	-0.037	0.500	-0.018	0.500	-0.170
0.583	1.198	0.583	-0.069	0.583	-0.044	0.583	-0.208
0.667	1.210	0.750	-0.050	0.667	-0.037	0.667	-0.192
0.750	1.223	0.833	-0.056	0.750	-0.031	0.750	-0.157
0.833	1.229	0.917	-0.050	0.917	-0.025	0.833	-0.151
1.000	1.223	1.000	-0.044	1.167	-0.018	0.917	-0.138
1.250	1.242	1.083	-0.037	1.250	-0.025	1.000	-0.126
1.333	1.217	1.167	-0.031	1.333	-0.012	1.083	-0.119
1.417	1.223	1.333	-0.025	1.917	-0.006	1.167	-0.100
1.500	1.229	1.500	-0.018			1.250	-0.094
1.583	1.223	1.833	-0.012	K=0.88-2 CM/SEC		1.333	-0.088
1.917	1.229	2.500	-0.006			1.417	-0.075
2.000	1.223	4.000	0.000			1.583	-0.059
2.500	1.179	5.500	-0.006			1.667	-0.063
3.000	1.166	6.500	0.000			1.750	-0.056
3.500	1.217	7.000	0.012			1.833	-0.050
4.500	1.204					2.000	-0.044
5.000	1.203	K=0.88-1 CM/SEC				2.500	-0.031
5.500	1.210					3.000	-0.025
6.000	1.199					3.500	-0.018
6.000	1.210					4.000	-0.025
						4.500	-0.013
						7.000	-0.010

K-4.6E-2

K=1.1E-1 CM/SEC

# ELN-89-06B



oooo TEST NO. 1  
- - - - TEST NO. 2  
△△△△ TEST NO. 3

WELL 51A-99-098

WELL DIAMETER=0.315FT. SCREEN LENGTH=10FT. BOFIND DIAMETER=0.75FT

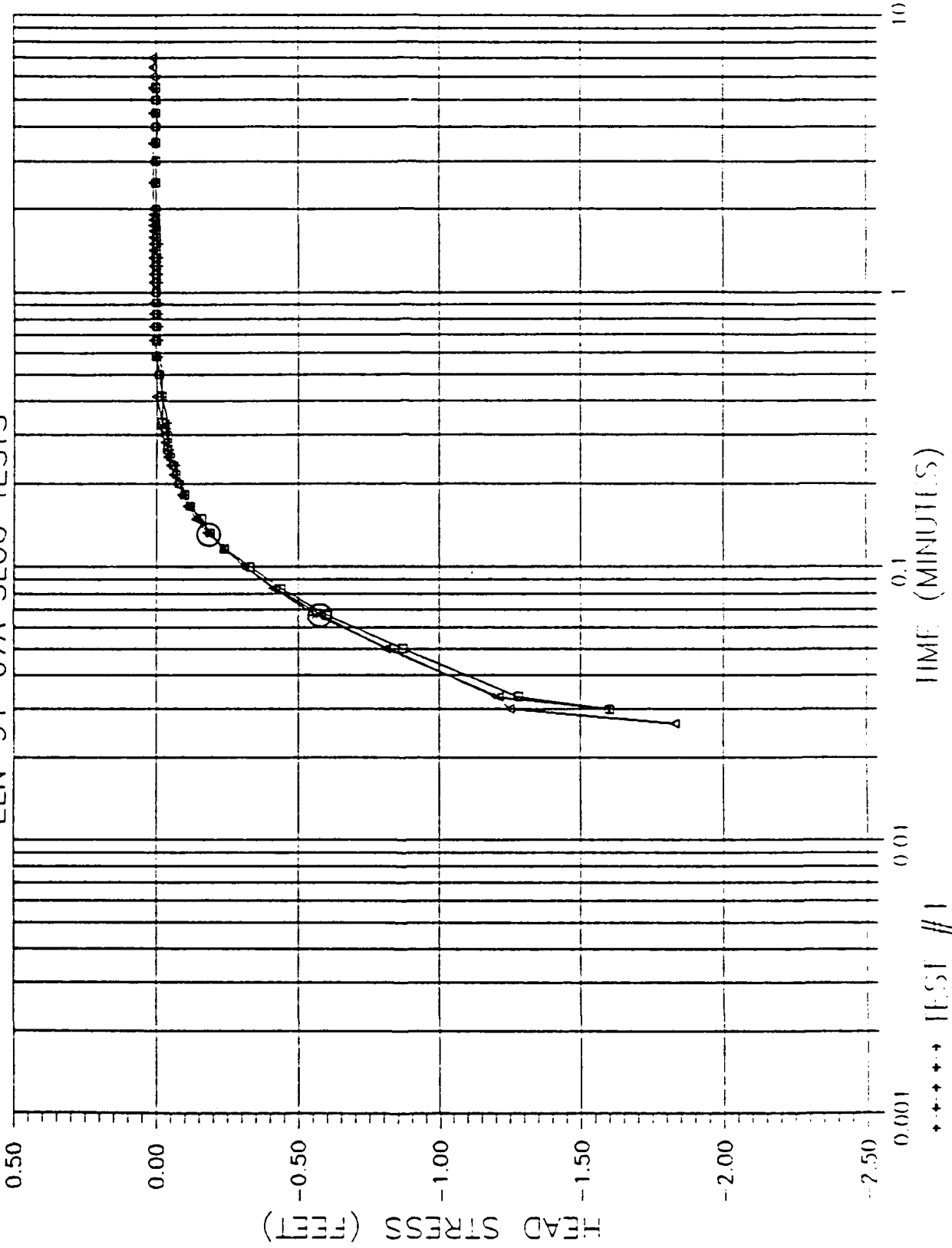
TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.008	-2.604	0.008	-4.913	0.008	-6.085
0.017	-2.352	0.017	-5.169	0.017	-7.409
0.025	-1.923	0.025	-4.497	0.025	-6.123
0.033	-1.501	0.033	-3.637	0.033	-4.957
0.042	-1.147	0.042	-2.825	0.042	-3.897
0.050	-0.875	0.050	-2.182	0.050	-2.977
0.058	-0.627	0.058	-1.698	0.058	-2.478
0.067	-0.555	0.067	-1.349	0.067	-2.042
0.075	-0.473	0.075	-1.110	0.075	-1.721
0.083	-0.416	0.083	-0.950	0.083	-1.488
0.100	-0.340	0.100	-0.744	0.100	-1.166
0.117	-0.283	0.117	-0.605	0.117	-0.950
0.133	-0.239	0.133	-0.504	0.133	-0.782
0.150	-0.201	0.150	-0.416	0.150	-0.662
0.167	-0.170	0.167	-0.359	0.167	-0.567
0.183	-0.145	0.183	-0.309	0.183	-0.491
0.200	-0.132	0.200	-0.271	0.200	-0.441
0.217	-0.119	0.217	-0.245	0.217	-0.397
0.233	-0.107	0.233	-0.227	0.233	-0.365
0.250	-0.100	0.250	-0.208	0.250	-0.340
0.267	-0.094	0.267	-0.195	0.267	-0.315
0.283	-0.088	0.283	-0.182	0.283	-0.296
0.300	-0.081	0.300	-0.170	0.300	-0.283
0.317	-0.075	0.317	-0.163	0.317	-0.271
0.417	-0.063	0.333	-0.157	0.333	-0.258
0.500	-0.056	0.417	-0.132	0.417	-0.227
0.583	-0.044	0.500	-0.119	0.500	-0.195
0.750	-0.037	0.583	-0.107	0.583	-0.176
0.833	-0.031	0.667	-0.094	0.667	-0.157
0.917	-0.025	0.750	-0.081	0.750	-0.145
1.000	-0.019	0.833	-0.075	0.833	-0.126
1.083	-0.012	0.917	-0.069	0.917	-0.110
1.417	-0.006	1.000	-0.063	1.000	-0.100
1.750	0.000	1.083	-0.056	1.083	-0.094
2.500	0.006	1.250	-0.044	1.167	-0.081
		1.333	-0.037	1.250	-0.069
		1.500	-0.031	1.333	-0.063
		1.583	-0.025	1.417	-0.056
		1.750	-0.019	1.500	-0.050
		2.000	-0.012	1.583	-0.044
		2.500	-0.006	1.667	-0.037
		3.500	0.000	1.750	-0.031
				1.917	-0.025
				2.100	-0.008
				3.000	0.000
				4.500	0.006

K=5.6E-2 CM/SEC

K=6.2E-2 CM/SEC

K=5.0E-2 CM/SEC

ELN-91-07A SLUG TESTS



+ + + + + TEST #1  
o o o o o TEST #2  
^ ^ ^ ^ ^ TEST #3

WELL ELN-91-37A  
 WELL DIAMETER=0.3125FT. SCREEN LENGTH=15FT. BORING DIAMETER=0.75FT

TEST 1		TEST 2		TEST 3	
MINUTES	FEET	MINUTES	FEET	MINUTES	FEET
0.0033	-0.02	0.0033	-0.01	0.0033	0
0.0066	-0.02	0.0066	-0.01	0.0066	-0.22
0.0099	-0.05	0.0099	-0.29	0.0099	-1.28
0.0133	-0.12	0.0133	-1.45	0.0133	-1.43
0.0166	-0.96	0.0166	-1.74	0.0166	-1.2
0.02	-1.21	0.02	-0.42	0.02	-0.41
0.0233	-0.86	0.0233	-0.27	0.0233	-0.29
0.0266	-0.96	0.0266	-1.28	0.0266	-1.63
0.03	-1.6	0.03	-1.6	0.03	-1.25
0.0333	-1.2	0.0333	-1.28	0.0333	-1.21
0.05	-0.82	0.05	-0.87	0.05	-0.81
0.0666	-0.56	0.0666	-0.6	0.0666	-0.56
0.0833	-0.41	0.0833	-0.44	0.0833	-0.42
0.1	-0.31	0.1	-0.33	0.1	-0.31
0.1166	-0.24	0.1166	-0.24	0.1166	-0.24
0.1333	-0.19	0.1333	-0.19	0.1333	-0.18
0.15	-0.15	0.15	-0.16	0.15	-0.14
0.1666	-0.12	0.1666	-0.12	0.1666	-0.11
0.1833	-0.1	0.1833	-0.1	0.1833	-0.09
0.2	-0.09	0.2	-0.08	0.2	-0.07
0.2166	-0.07	0.2166	-0.07	0.2166	-0.06
0.2333	-0.07	0.2333	-0.06	0.2333	-0.05
0.25	-0.05	0.25	-0.05	0.25	-0.04
0.2666	-0.05	0.2666	-0.04	0.2666	-0.04
0.2833	-0.04	0.2833	-0.04	0.2833	-0.03
0.3	-0.04	0.3	-0.04	0.3	-0.02
0.3166	-0.04	0.3166	-0.03	0.3166	-0.02
0.3333	-0.04	0.3333	-0.02	0.3333	-0.02
0.4167	-0.02	0.4167	-0.02	0.4167	0
0.5	-0.02	0.5	-0.01	0.5	0
0.5833	-0.01	0.5833	0	0.5833	0
0.6667	-0.01	0.6667	0	0.6667	0.01
0.75	-0.01	0.75	0	0.75	0.01
0.8333	-0.01	0.8333	0	0.8333	0.01
0.9167	-0.01	0.9167	0	0.9167	0.01
1	-0.01	1	0	1	0.01
1.0833	-0.01	1.0833	0	1.0833	0.01
1.1667	-0.01	1.1667	0	1.1667	0.01
1.25	-0.01	1.25	0	1.25	0.01
1.3333	-0.01	1.3333	0	1.3333	0.01
1.4166	0	1.4166	0	1.4166	0.01
1.5	-0.01	1.5	0	1.5	0.01
1.5833	0	1.5833	0	1.5833	0.01
1.6667	0	1.6667	0	1.6667	0.01
1.75	0	1.75	0	1.75	0.01
1.8333	0	1.8333	0	1.8333	0.01
1.9167	0	1.9167	0	1.9167	0.01
2	0	2	0	2	0.01
2.5	0	2.5	0	2.5	0.01
3	0	3	0	3	0.01
3.5	0	3.5	0	3.5	0.01
4	-0.01	4	0	4	0.01
4.5	0	4.5	0	4.5	0.01
5	-0.01	5	0	5	0.01
5.5	0	5.5	0	5.5	0.01
6	-0.01			6	0.01
				6.5	0.01
				7	0.01

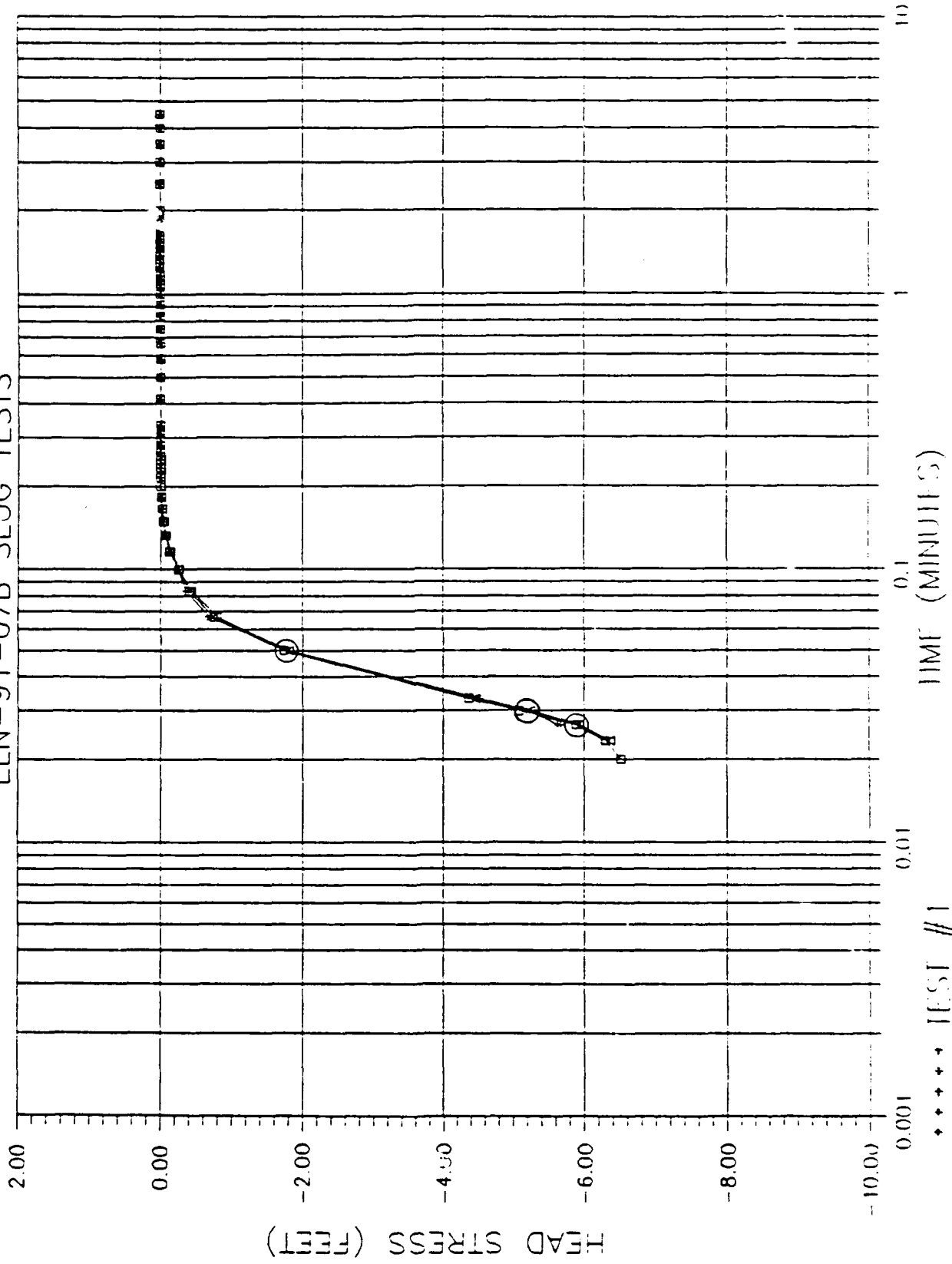
HVORSLEV  
 K = 0.005 CM/SEC  
 BOUWER AND RICE  
 K = 0.027 CM/SEC

K = 0.005 CM/SEC  
 K = 0.021 CM/SEC

K = 0.005 CM/SEC  
 K = 0.024 CM/SEC



ELN-91-07B SLUG TESTS



WELL ELN-01-078  
 WELL DIAMETER=0.3125FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.75FT

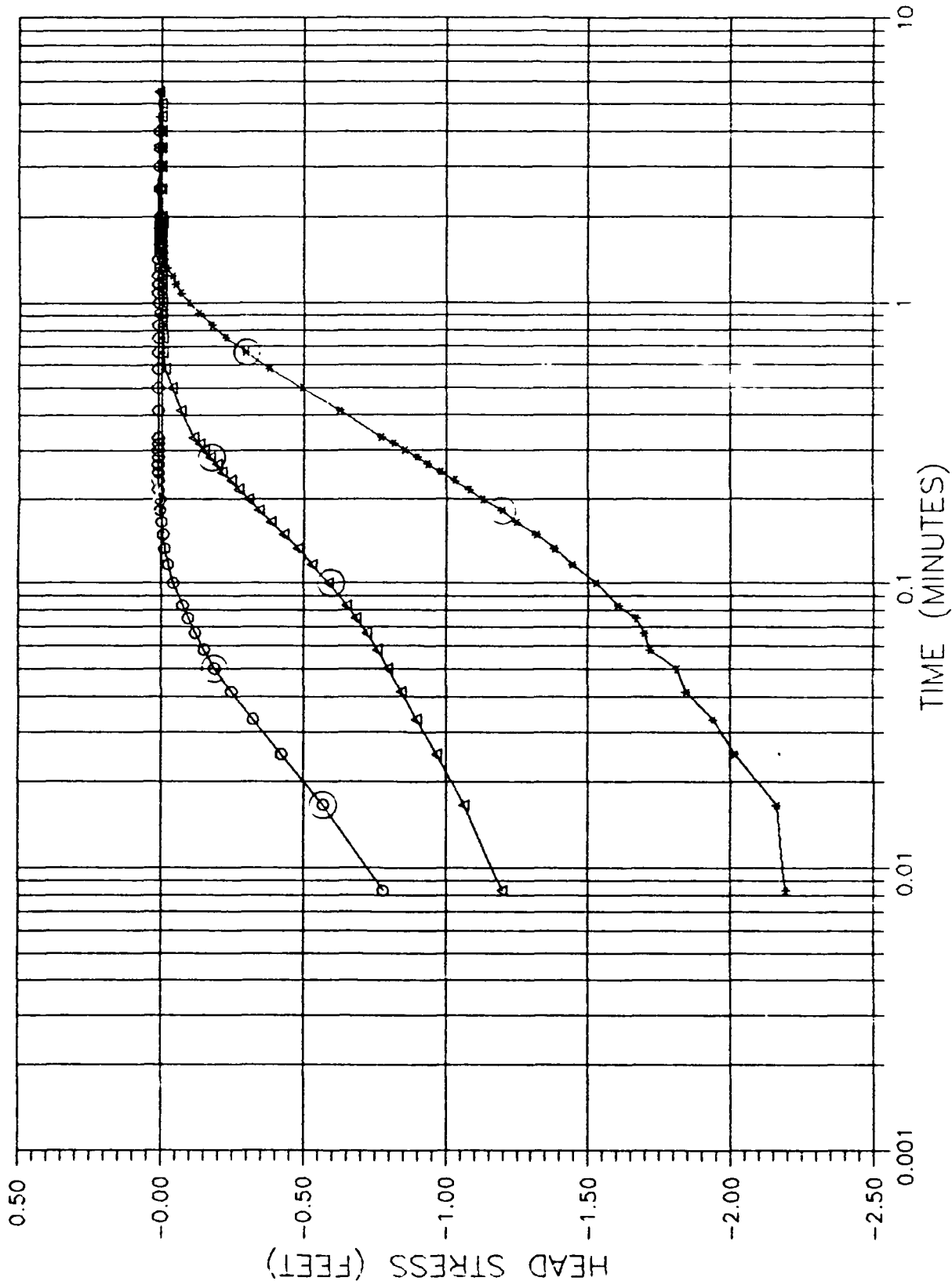
TEST 1		TEST 2		TEST 3	
MINUTES	FEET	MINUTES	FEET	MINUTES	FEET
0.0033	0.01	0.0033	0.02	0.0033	0.02
0.0066	0.01	0.0066	0.02	0.0066	0.02
0.0099	0.01	0.0099	-1.18	0.0099	-1.02
0.0133	-0.84	0.0133	-3.34	0.0133	-3.17
0.0166	-2.84	0.0166	-6.59	0.0166	-6.19
0.02	-4.94	0.02	-8.51	0.02	-8.38
0.0233	-6.53	0.0233	-8.29	0.0233	-8.38
0.0266	-6.84	0.0266	-6.88	0.0266	-6.93
0.03	-5.2	0.03	-6.07	0.03	-6.24
0.0333	-4.51	0.0333	-4.38	0.0333	-4.46
0.05	-1.79	0.05	-1.74	0.05	-1.82
0.0666	-0.69	0.0666	-0.75	0.0666	-0.8
0.0833	-0.37	0.0833	-0.41	0.0833	-0.44
0.1	-0.23	0.1	-0.25	0.1	-0.28
0.1166	-0.13	0.1166	-0.13	0.1166	-0.15
0.1333	-0.07	0.1333	-0.07	0.1333	-0.08
0.15	-0.03	0.15	-0.03	0.15	-0.05
0.1666	-0.02	0.1666	-0.02	0.1666	-0.03
0.1833	-0.01	0.1833	-0.01	0.1833	-0.01
0.2	0	0.2	0	0.2	-0.01
0.2166	0	0.2166	0	0.2166	-0.01
0.2333	0	0.2333	0	0.2333	-0.01
0.25	0	0.25	0	0.25	-0.01
0.2666	0	0.2666	0	0.2666	0
0.2833	0	0.2833	0	0.2833	0
0.3	0	0.3	0	0.3	0
0.3166	0	0.3166	0	0.3166	0
0.3333	0	0.3333	0	0.3333	0
0.4167	0	0.4167	0	0.4167	0
0.5	0	0.5	0	0.5	0
0.5833	0	0.5833	0	0.5833	0
0.6667	0	0.6667	0	0.6667	0
0.75	0	0.75	0	0.75	0
0.8333	0	0.8333	0	0.8333	0
0.9167	0	0.9167	0	0.9167	0
1	0	1	0	1	0
1.0833	0	1.0833	0	1.0833	0
1.1667	0	1.1667	0	1.1667	0
1.25	0	1.25	0.01	1.25	0
1.3333	0	1.3333	0.01	1.3333	0
1.4166	0	1.4166	0	1.4166	0
1.5	0	1.5	0	1.5	0
1.5833	0	1.5833	0	1.5833	0
1.6667	0	1.6667	0	1.6667	0
1.75	0	1.75	0	1.75	0
1.8333	0	1.8333	0	1.8333	0
1.9167	0	1.9167	0	1.9167	0
2	0	2	0	2	0
2.5	0	2.5	0	2.5	0
3	0	3	0	3	0
3.5	0	3.5	0	3.5	0
4	0	4	0	4	0
4.5	0	4.5	0		

Hvorslev:  
 K = 0.015 CM/SEC  
 Bouwer and Rice:  
 K = 0.056 CM/SEC

K = 0.015 CM/SEC  
 K = 0.052 CM/SEC

K = 0.014 CM/SEC  
 K = 0.053 CM/SEC

S1153



o o o o o TEST NO. 1  
\* \* \* \* \* TEST NO. 2  
Δ Δ Δ Δ Δ TEST NO. 3

WELL 31187

WELL DIAMETER=0.3105FT. SCREEN LENGTH=10FT. BOSING DIAMETER=0.76FT

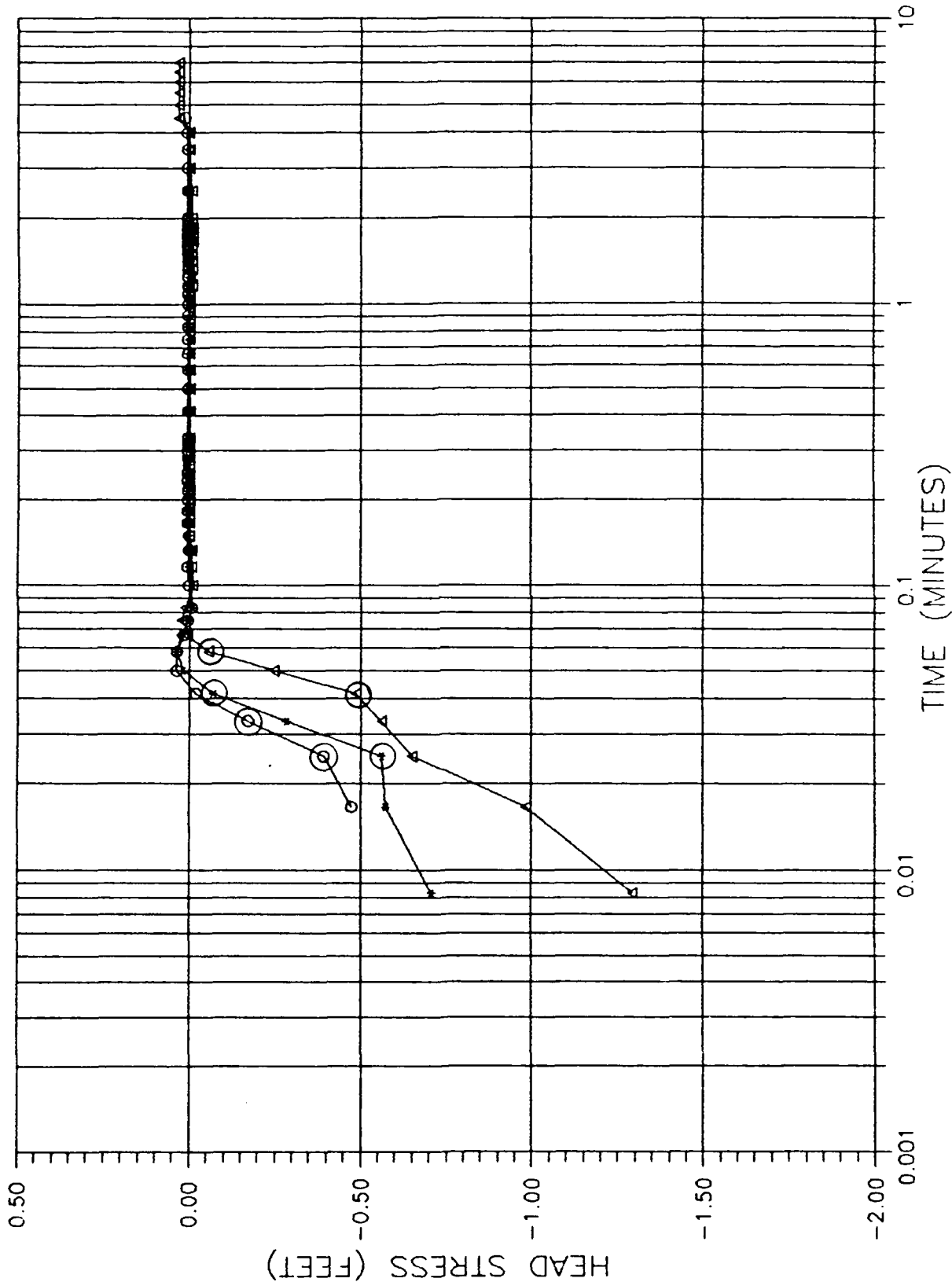
TEST 1		TEST 2		TEST 3	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-0.779	0.008	-2.192	0.008	-1.197
0.017	-0.570	0.017	-2.161	0.017	-1.054
0.025	-0.424	0.025	-2.015	0.025	-0.969
0.033	-0.223	0.033	-1.939	0.033	-0.899
0.042	-0.247	0.042	-1.844	0.042	-0.842
0.050	-0.190	0.050	-1.812	0.050	-0.798
0.058	-0.152	0.058	-1.717	0.058	-0.760
0.067	-0.120	0.067	-1.698	0.067	-0.702
0.075	-0.095	0.075	-1.666	0.075	-0.684
0.083	-0.076	0.083	-1.607	0.083	-0.652
0.100	-0.044	0.100	-1.527	0.100	-0.539
0.117	-0.025	0.117	-1.444	0.117	-0.532
0.133	-0.012	0.133	-1.381	0.133	-0.481
0.150	-0.006	0.150	-1.318	0.150	-0.430
0.167	0.000	0.167	-1.248	0.167	-0.386
0.183	0.006	0.183	-1.197	0.183	-0.342
0.217	0.012	0.200	-1.128	0.200	-0.304
0.317	0.006	0.217	-1.083	0.217	-0.272
1.000	0.012	0.233	-1.033	0.233	-0.247
1.333	0.006	0.250	-0.982	0.250	-0.215
1.417	0.012	0.267	-0.937	0.267	-0.196
1.500	0.006	0.283	-0.899	0.283	-0.171
		0.300	-0.855	0.300	-0.152
		0.317	-0.817	0.317	-0.133
		0.333	-0.772	0.333	-0.114
		0.417	-0.627	0.417	-0.069
		0.500	-0.494	0.500	-0.038
		0.583	-0.380	0.583	-0.012
		0.667	-0.297	0.667	-0.006
		0.750	-0.228	0.633	0.000
		0.833	-0.177	0.917	0.000
		0.917	-0.133	1.000	0.000
		1.000	-0.095	1.083	0.000
		1.083	-0.069	1.167	0.000
		1.167	-0.050	1.250	0.000
		1.250	-0.038	1.333	0.000
		1.333	-0.019	1.417	0.000
		1.417	-0.012	1.500	0.000
		1.500	-0.006	1.583	0.000
		1.667	0.000	1.667	0.000
		1.750	0.000	1.750	0.000
		1.833	0.006	1.833	0.000
		2.000	0.012	1.917	-0.006
		3.000	0.036	2.000	0.000
				2.500	0.000
				3.000	0.000
				3.500	0.000
				4.000	0.000
				4.500	0.000
				5.000	0.000
				5.500	0.006

K=5.9E-2 CM/SEC

K=5.1E-3 CM/SEC

K=1.2E-2 CM/SEC

RPM-89--01



o-o-o-o-o TEST NO. 1  
- - - - - TEST NO. 2  
- - - - - TEST NO. 3

WELL RPM-89-01

WELL DIAMETER=0.2125FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.75FT

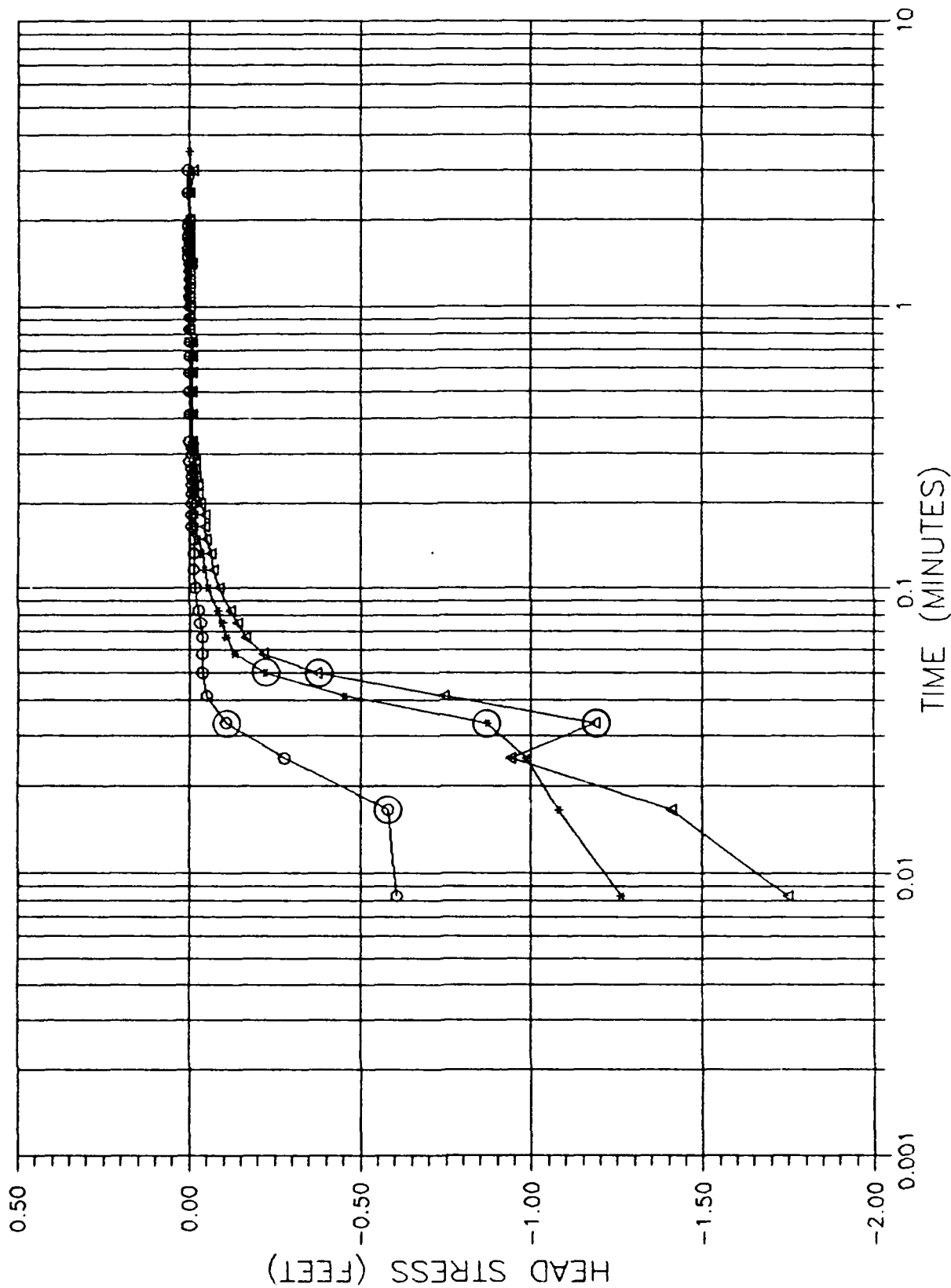
TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.017	-0.474	0.008	-0.707	0.008	-1.293
<u>0.025</u>	<u>-0.392</u>	0.017	-0.574	0.017	-0.984
<u>0.033</u>	<u>-0.171</u>	<u>0.025</u>	<u>-0.562</u>	0.025	-0.650
0.041	-0.019	0.033	-0.284	0.033	-0.562
0.050	0.037	<u>0.041</u>	<u>-0.070</u>	<u>0.041</u>	<u>-0.486</u>
0.067	0.018	0.050	0.018	0.050	-0.246
0.075	0.006	0.058	0.037	<u>0.058</u>	<u>-0.057</u>
0.083	-0.007	0.067	0.025	0.067	0.006
0.100	0.000	0.075	0.006	0.075	0.025
0.117	0.006	0.083	-0.007	0.083	0.012
0.133	0.000	0.117	0.000	0.100	-0.013
0.150	0.000	0.133	0.006	0.117	-0.007
0.167	0.006	0.667	0.000	0.150	0.000
0.267	0.000	0.750	0.000	0.167	0.000
0.283	0.006	0.833	0.006	0.183	0.000
4.500	0.012	0.917	0.000	0.200	0.000
		1.000	0.006	0.217	0.000
		1.250	0.000	0.233	0.000
		1.333	0.006	0.250	0.000
		1.667	0.000	0.267	0.000
		1.750	0.006	0.283	0.000
		1.833	0.000	0.300	0.000
		1.917	0.006	0.317	0.000
		3.000	0.000	0.333	0.000
				0.417	0.000
				0.500	0.000
				0.583	0.000
				0.667	0.000
				0.750	0.000
				0.833	0.000
				0.917	0.000
				1.000	0.000
				1.083	0.000
				1.167	-0.007
				1.250	0.000
				1.333	-0.007
				1.667	-0.013
				1.917	-0.007
				3.000	0.000
				3.500	0.000
				4.000	0.000
				4.500	0.031

K=1.5E-1 CM/SEC

K=1.9E-1 CM/SEC

K=1.9E-1 CM/SEC

RPM-89-02



○ TEST NO. 1  
■ TEST NO. 2  
▲ TEST NO. 3

WELL RPM-89-02

WELL DIAMETER=0.3125FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.75FT

TEST 1		TEST 2		TEST 3	
TIME	HEAD	TIME	HEAD	TIME	HEAD
MIN.	FEET	MIN.	FEET	MIN.	FEET
0.008	-0.606	0.008	-1.262	0.008	-1.748
<u>0.017</u>	<u>-0.581</u>	0.017	-1.079	0.017	-1.407
0.025	-0.278	0.025	-0.984	0.025	-0.940
<u>0.033</u>	<u>-0.108</u>	<u>0.033</u>	<u>-0.871</u>	<u>0.033</u>	<u>-1.186</u>
0.042	-0.051	0.042	-0.455	0.042	-0.745
0.050	-0.038	<u>0.050</u>	<u>-0.221</u>	<u>0.050</u>	<u>-0.373</u>
0.075	-0.032	0.058	-0.133	0.058	-0.215
0.083	-0.026	0.067	-0.108	0.067	-0.164
0.100	-0.019	0.075	-0.095	0.075	-0.139
0.117	-0.013	0.083	-0.082	0.083	-0.120
0.167	-0.007	0.100	-0.057	0.100	-0.089
0.283	0.000	0.117	-0.045	0.117	-0.070
0.300	-0.007	0.133	-0.038	0.133	-0.064
0.333	0.000	0.150	-0.026	0.150	-0.051
0.417	0.000	0.167	-0.019	0.167	-0.045
0.500	0.000	0.217	-0.013	0.200	-0.032
0.583	0.000	0.283	-0.007	0.217	-0.026
0.667	0.000	0.417	0.000	0.250	-0.019
0.750	0.000	0.500	0.000	0.300	-0.013
0.833	0.000	0.583	0.000	0.333	-0.007
0.917	0.000	0.667	0.000	0.833	0.000
1.000	0.000	0.750	0.000	0.917	0.000
1.083	0.000	0.833	0.000	1.000	0.000
1.167	0.000	0.917	0.000	1.083	0.000
1.250	0.000	1.000	0.000	1.167	0.000
1.333	0.000	1.083	0.000	1.250	0.000
1.417	0.000	1.167	0.000	1.333	0.000
1.500	0.000	1.250	0.000	1.417	-0.007
1.667	0.000	1.333	0.006	1.500	0.000
1.750	0.000	1.417	0.000	1.583	0.000
1.833	0.000	1.500	0.000	1.667	0.000
1.917	0.006	1.583	0.006	1.750	0.000
2.000	0.000	1.667	0.000	1.833	0.000
2.500	0.006	1.750	0.000	1.917	0.000
		1.833	0.000	2.000	0.000
		1.917	0.000	2.500	0.000
		2.000	0.000		
		2.500	0.000		
		3.000	0.000		
		3.500	0.000		

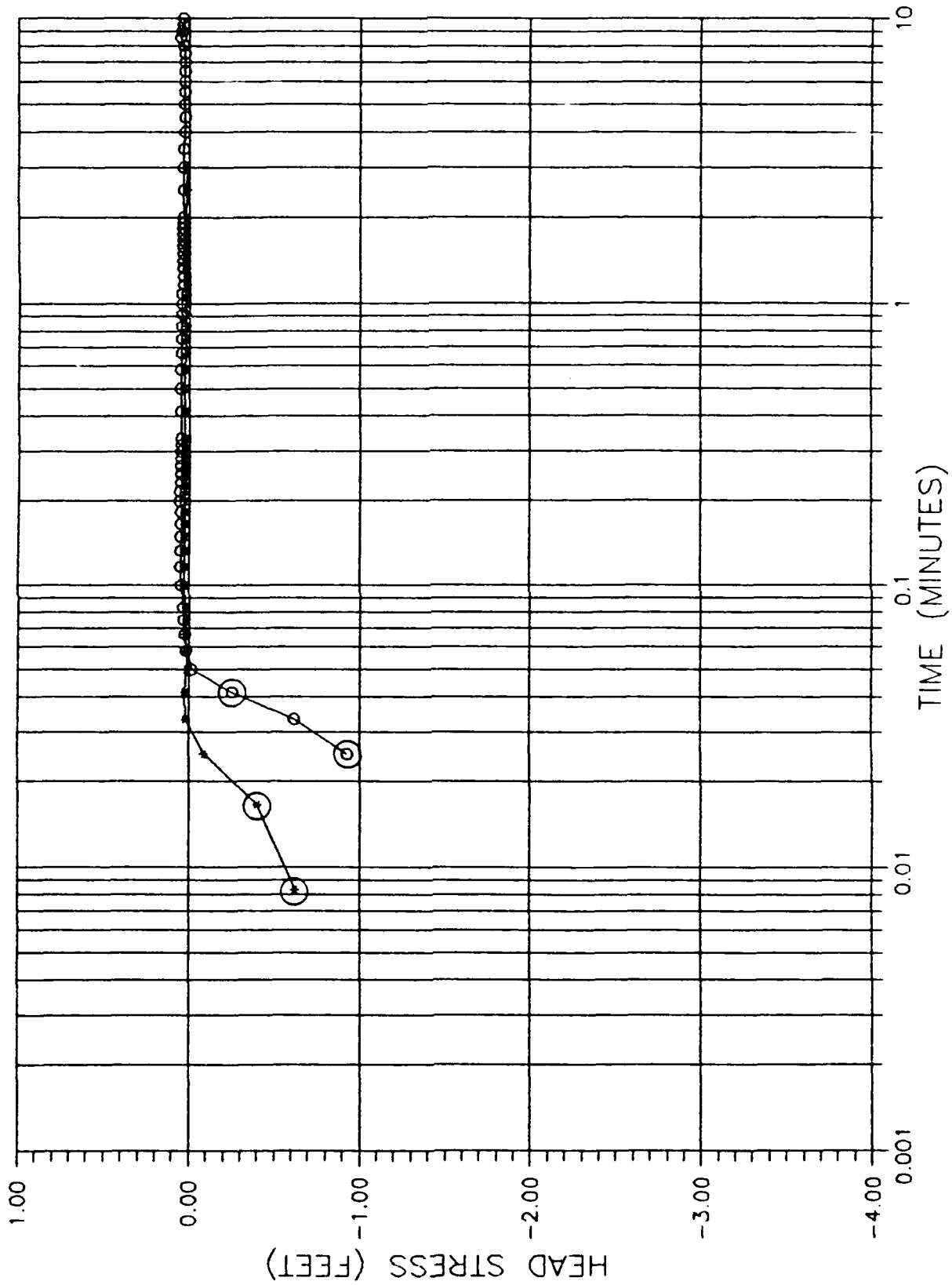
K=1.5E-1 CM/SEC

K=1.0E-1 CM/SEC

K=1.2E-1 CM/SEC



OPM-89-03



\*\*\*\*\* TEST NO. 1  
ooooo TEST NO. 2

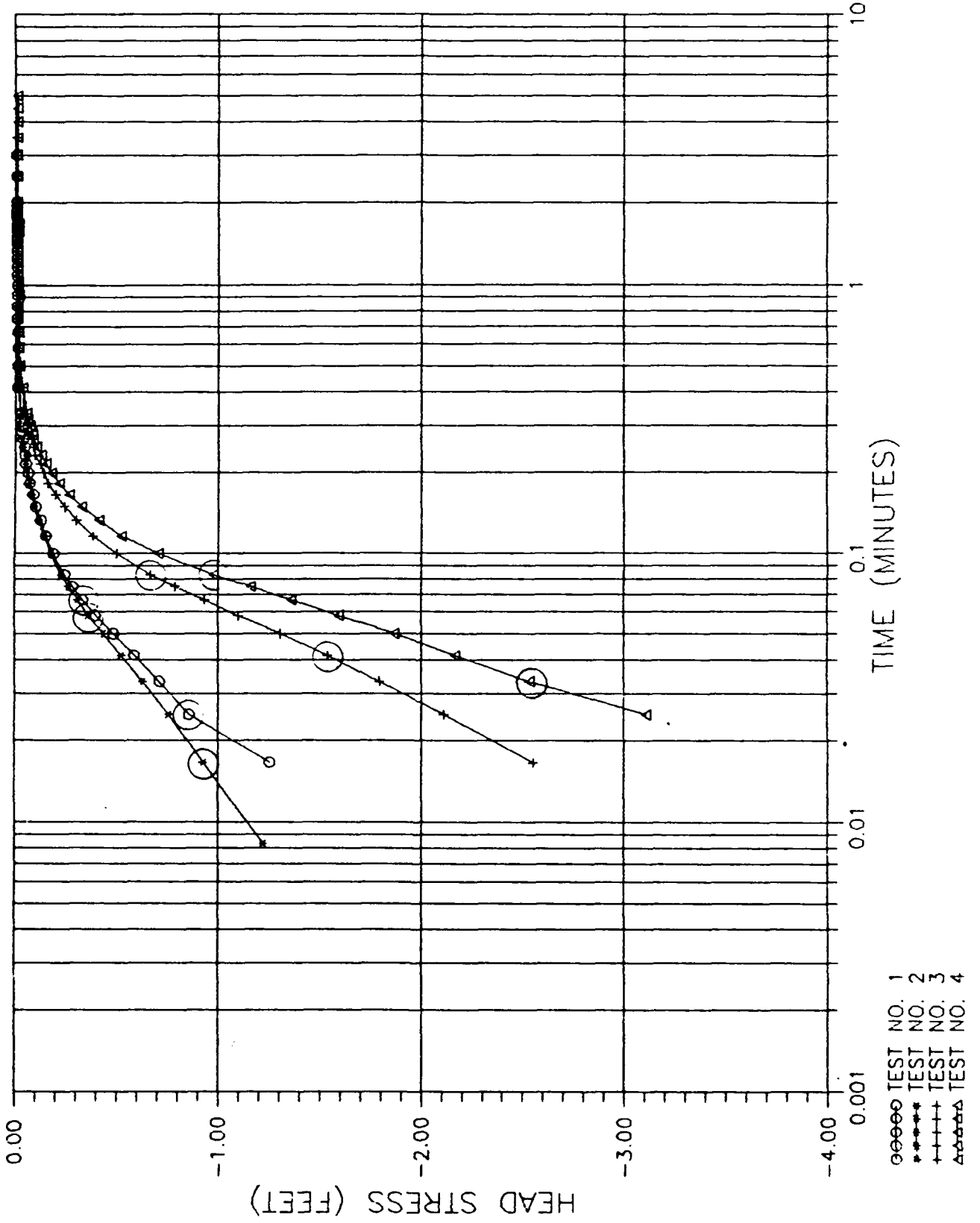
WELL OPM-89-03  
 WELL DIAMETER=0.3105FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.75FT

TEST 1		TEST 2	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.008	-0.625	0.025	-0.928
0.017	-0.398	0.033	-0.619
0.025	-0.089	0.042	-0.253
0.033	0.018	0.050	-0.013
0.042	0.025	0.058	0.018
0.050	0.012	0.067	0.025
0.058	0.018	0.075	0.031
0.081	0.025	0.083	0.037
0.667	0.018	0.100	0.044
2.500	0.012	0.117	0.050
		0.200	0.056
		0.233	0.050
		0.667	0.044
		1.167	0.037
		2.500	0.031
		4.000	0.025
		8.000	0.031
		8.500	0.050
		9.000	0.044
		9.500	0.037
		11.000	0.025
		12.000	0.018
		15.000	0.012

$K=8.2E-2$  CM/SEC

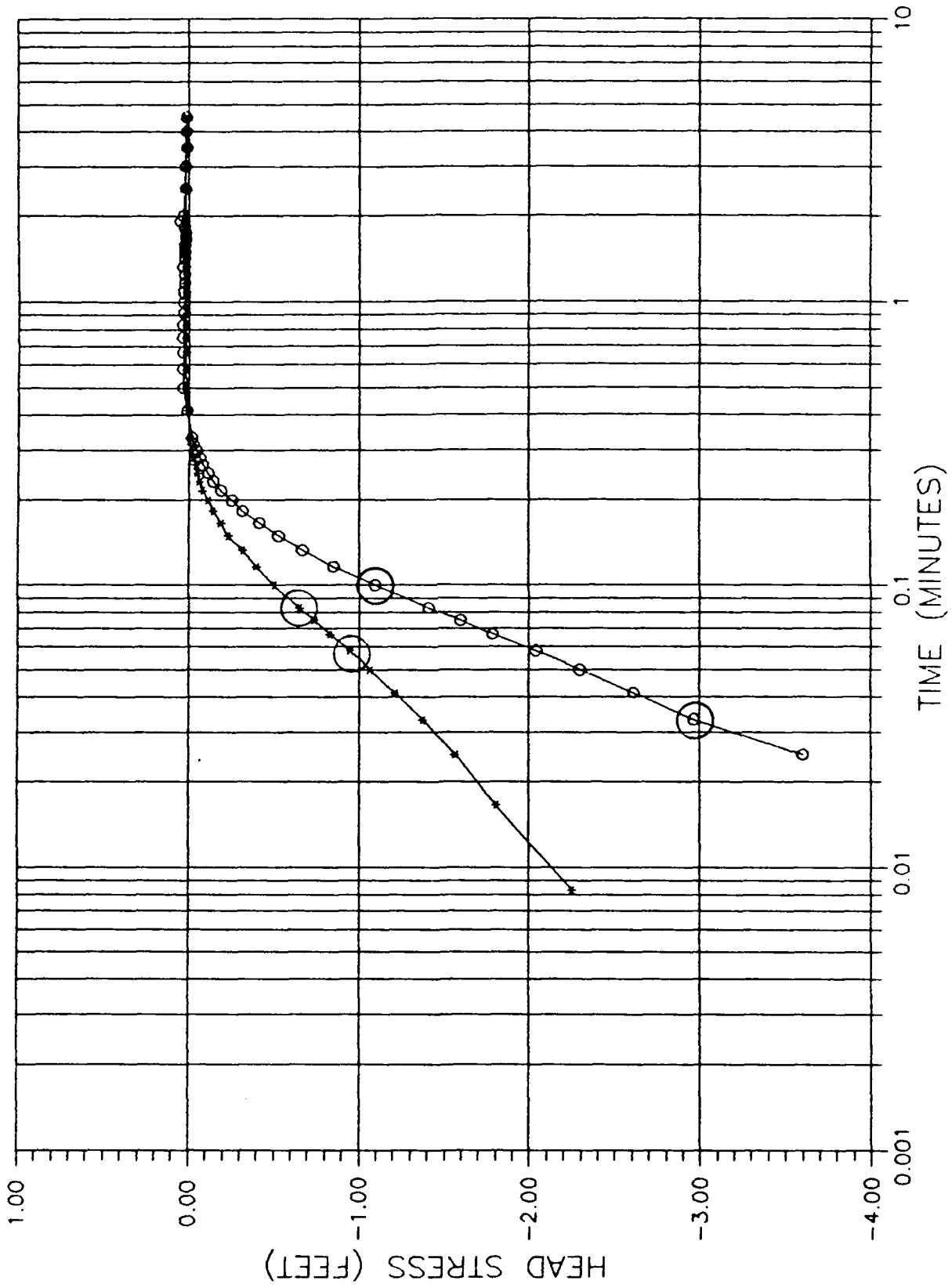
$K=1.1E-1$  CM/SEC

OAM-89-01





FTM-89-01



\*\*\*\*\* TEST NO. 1  
ooooo TEST NO. 2

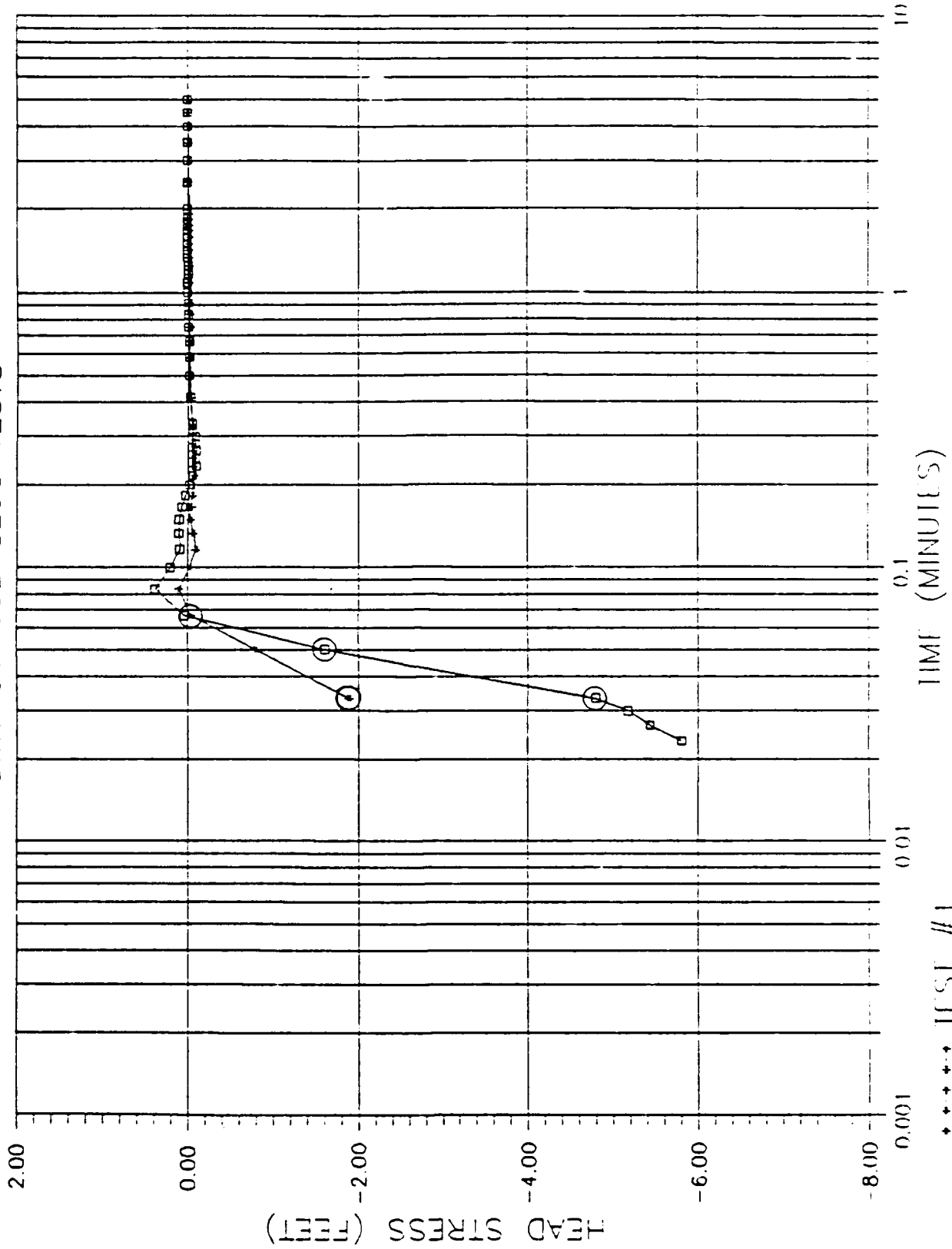
WELL #2M-89-01  
 WELL DIAMETER=0.0100 FT, SCREEN LENGTH=10 FT, BOPING DIAMETER=0.75 FT

TEST 1		TEST 2	
TIME MIN.	HEAD FEET	TIME MIN.	HEAD FEET
0.000	-1.000	0.000	-1.000
0.010	-1.004	0.000	-1.000
0.020	-1.008	0.040	-1.010
0.030	-1.012	0.080	-1.016
0.040	-1.016	0.120	-1.024
0.050	-1.020	0.160	-1.032
0.058	-1.024	0.200	-1.040
0.067	-1.028	0.240	-1.048
0.075	-1.032	0.280	-1.056
0.083	-1.036	0.320	-1.064
0.100	-1.040	0.360	-1.072
0.117	-1.044	0.400	-1.080
0.133	-1.048	0.440	-1.088
0.150	-1.052	0.480	-1.096
0.167	-1.056	0.520	-1.104
0.183	-1.060	0.560	-1.112
0.200	-1.064	0.600	-1.120
0.217	-1.068	0.640	-1.128
0.233	-1.072	0.680	-1.136
0.250	-1.076	0.720	-1.144
0.267	-1.080	0.760	-1.152
0.283	-1.084	0.800	-1.160
0.300	-1.088	0.840	-1.168
0.317	-1.092	0.880	-1.176
0.333	-1.096	0.920	-1.184
0.350	-1.100	0.960	-1.192
0.367	-1.104	1.000	-1.200
0.383	-1.108	1.040	-1.208
0.400	-1.112	1.080	-1.216
0.417	-1.116	1.120	-1.224
0.433	-1.120	1.160	-1.232
0.450	-1.124	1.200	-1.240
0.467	-1.128	1.240	-1.248
0.483	-1.132	1.280	-1.256
0.500	-1.136	1.320	-1.264
0.517	-1.140	1.360	-1.272
0.533	-1.144	1.400	-1.280
0.550	-1.148	1.440	-1.288
0.567	-1.152	1.480	-1.296
0.583	-1.156	1.520	-1.304
0.600	-1.160	1.560	-1.312
0.617	-1.164	1.600	-1.320
0.633	-1.168	1.640	-1.328
0.650	-1.172	1.680	-1.336
0.667	-1.176	1.720	-1.344
0.683	-1.180	1.760	-1.352
0.700	-1.184	1.800	-1.360
0.717	-1.188	1.840	-1.368
0.733	-1.192	1.880	-1.376
0.750	-1.196	1.920	-1.384
0.767	-1.200	1.960	-1.392
0.783	-1.204	2.000	-1.400
0.800	-1.208	2.040	-1.408
0.817	-1.212	2.080	-1.416
0.833	-1.216	2.120	-1.424
0.850	-1.220	2.160	-1.432
0.867	-1.224	2.200	-1.440
0.883	-1.228	2.240	-1.448
0.900	-1.232	2.280	-1.456
0.917	-1.236	2.320	-1.464
0.933	-1.240	2.360	-1.472
0.950	-1.244	2.400	-1.480
0.967	-1.248	2.440	-1.488
0.983	-1.252	2.480	-1.496
1.000	-1.256	2.520	-1.504
1.017	-1.260	2.560	-1.512
1.033	-1.264	2.600	-1.520
1.050	-1.268	2.640	-1.528
1.067	-1.272	2.680	-1.536
1.083	-1.276	2.720	-1.544
1.100	-1.280	2.760	-1.552
1.117	-1.284	2.800	-1.560
1.133	-1.288	2.840	-1.568
1.150	-1.292	2.880	-1.576
1.167	-1.296	2.920	-1.584
1.183	-1.300	2.960	-1.592
1.200	-1.304	3.000	-1.600
1.217	-1.308	3.040	-1.608
1.233	-1.312	3.080	-1.616
1.250	-1.316	3.120	-1.624
1.267	-1.320	3.160	-1.632
1.283	-1.324	3.200	-1.640
1.300	-1.328	3.240	-1.648
1.317	-1.332	3.280	-1.656
1.333	-1.336	3.320	-1.664
1.350	-1.340	3.360	-1.672
1.367	-1.344	3.400	-1.680
1.383	-1.348	3.440	-1.688
1.400	-1.352	3.480	-1.696
1.417	-1.356	3.520	-1.704
1.433	-1.360	3.560	-1.712
1.450	-1.364	3.600	-1.720
1.467	-1.368	3.640	-1.728
1.483	-1.372	3.680	-1.736
1.500	-1.376	3.720	-1.744
1.517	-1.380	3.760	-1.752
1.533	-1.384	3.800	-1.760
1.550	-1.388	3.840	-1.768
1.567	-1.392	3.880	-1.776
1.583	-1.396	3.920	-1.784
1.600	-1.400	3.960	-1.792
1.617	-1.404	4.000	-1.800
1.633	-1.408	4.040	-1.808
1.650	-1.412	4.080	-1.816
1.667	-1.416	4.120	-1.824
1.683	-1.420	4.160	-1.832
1.700	-1.424	4.200	-1.840
1.717	-1.428	4.240	-1.848
1.733	-1.432	4.280	-1.856
1.750	-1.436	4.320	-1.864
1.767	-1.440	4.360	-1.872
1.783	-1.444	4.400	-1.880
1.800	-1.448	4.440	-1.888
1.817	-1.452	4.480	-1.896
1.833	-1.456	4.520	-1.904
1.850	-1.460	4.560	-1.912
1.867	-1.464	4.600	-1.920
1.883	-1.468	4.640	-1.928
1.900	-1.472	4.680	-1.936
1.917	-1.476	4.720	-1.944
1.933	-1.480	4.760	-1.952
1.950	-1.484	4.800	-1.960
1.967	-1.488	4.840	-1.968
1.983	-1.492	4.880	-1.976
2.000	-1.496	4.920	-1.984
2.017	-1.500	4.960	-1.992
2.033	-1.504	5.000	-2.000
2.050	-1.508	5.040	-2.008
2.067	-1.512	5.080	-2.016
2.083	-1.516	5.120	-2.024
2.100	-1.520	5.160	-2.032
2.117	-1.524	5.200	-2.040
2.133	-1.528	5.240	-2.048
2.150	-1.532	5.280	-2.056
2.167	-1.536	5.320	-2.064
2.183	-1.540	5.360	-2.072
2.200	-1.544	5.400	-2.080
2.217	-1.548	5.440	-2.088
2.233	-1.552	5.480	-2.096
2.250	-1.556	5.520	-2.104
2.267	-1.560	5.560	-2.112
2.283	-1.564	5.600	-2.120
2.300	-1.568	5.640	-2.128
2.317	-1.572	5.680	-2.136
2.333	-1.576	5.720	-2.144
2.350	-1.580	5.760	-2.152
2.367	-1.584	5.800	-2.160
2.383	-1.588	5.840	-2.168
2.400	-1.592	5.880	-2.176
2.417	-1.596	5.920	-2.184
2.433	-1.600	5.960	-2.192
2.450	-1.604	6.000	-2.200
2.467	-1.608	6.040	-2.208
2.483	-1.612	6.080	-2.216
2.500	-1.616	6.120	-2.224
2.517	-1.620	6.160	-2.232
2.533	-1.624	6.200	-2.240
2.550	-1.628	6.240	-2.248
2.567	-1.632	6.280	-2.256
2.583	-1.636	6.320	-2.264
2.600	-1.640	6.360	-2.272
2.617	-1.644	6.400	-2.280
2.633	-1.648	6.440	-2.288
2.650	-1.652	6.480	-2.296
2.667	-1.656	6.520	-2.304
2.683	-1.660	6.560	-2.312
2.700	-1.664	6.600	-2.320
2.717	-1.668	6.640	-2.328
2.733	-1.672	6.680	-2.336
2.750	-1.676	6.720	-2.344
2.767	-1.680	6.760	-2.352
2.783	-1.684	6.800	-2.360
2.800	-1.688	6.840	-2.368
2.817	-1.692	6.880	-2.376
2.833	-1.696	6.920	-2.384
2.850	-1.700	6.960	-2.392
2.867	-1.704	7.000	-2.400
2.883	-1.708	7.040	-2.408
2.900	-1.712	7.080	-2.416
2.917	-1.716	7.120	-2.424
2.933	-1.720	7.160	-2.432
2.950	-1.724	7.200	-2.440
2.967	-1.728	7.240	-2.448
2.983	-1.732	7.280	-2.456
3.000	-1.736	7.320	-2.464
3.017	-1.740	7.360	-2.472
3.033	-1.744	7.400	-2.480
3.050	-1.748	7.440	-2.488
3.067	-1.752	7.480	-2.496
3.083	-1.756	7.520	-2.504
3.100	-1.760	7.560	-2.512
3.117	-1.764	7.600	-2.520
3.133	-1.768	7.640	-2.528
3.150	-1.772	7.680	-2.536
3.167	-1.776	7.720	-2.544
3.183	-1.780	7.760	-2.552
3.200	-1.784	7.800	-2.560
3.217	-1.788	7.840	-2.568
3.233	-1.792	7.880	-2.576
3.250	-1.796	7.920	-2.584
3.267	-1.800	7.960	-2.592
3.283	-1.804	8.000	-2.600
3.300	-1.808	8.040	-2.608
3.317	-1.812	8.080	-2.616
3.333	-1.816	8.120	-2.624
3.350	-1.820	8.160	-2.632
3.367	-1.824	8.200	-2.640
3.383	-1.828	8.240	-2.648
3.400	-1.832	8.280	-2.656
3.417	-1.836	8.320	-2.664
3.433	-1.840	8.360	-2.672
3.450	-1.844	8.400	-2.680
3.467	-1.848	8.440	-2.688
3.483	-1.852	8.480	-2.696
3.500	-1.856	8.520	-2.704

V=0.02E-2 CM/SEC

W=0.02E-2 CM/SEC

# SWN-91-03B SLUG TESTS



+ + + + + TEST #1  
 o o o o o TEST #2

WELL SWN-91-03B  
 WELL DIAMETER=0.3125FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.75FT

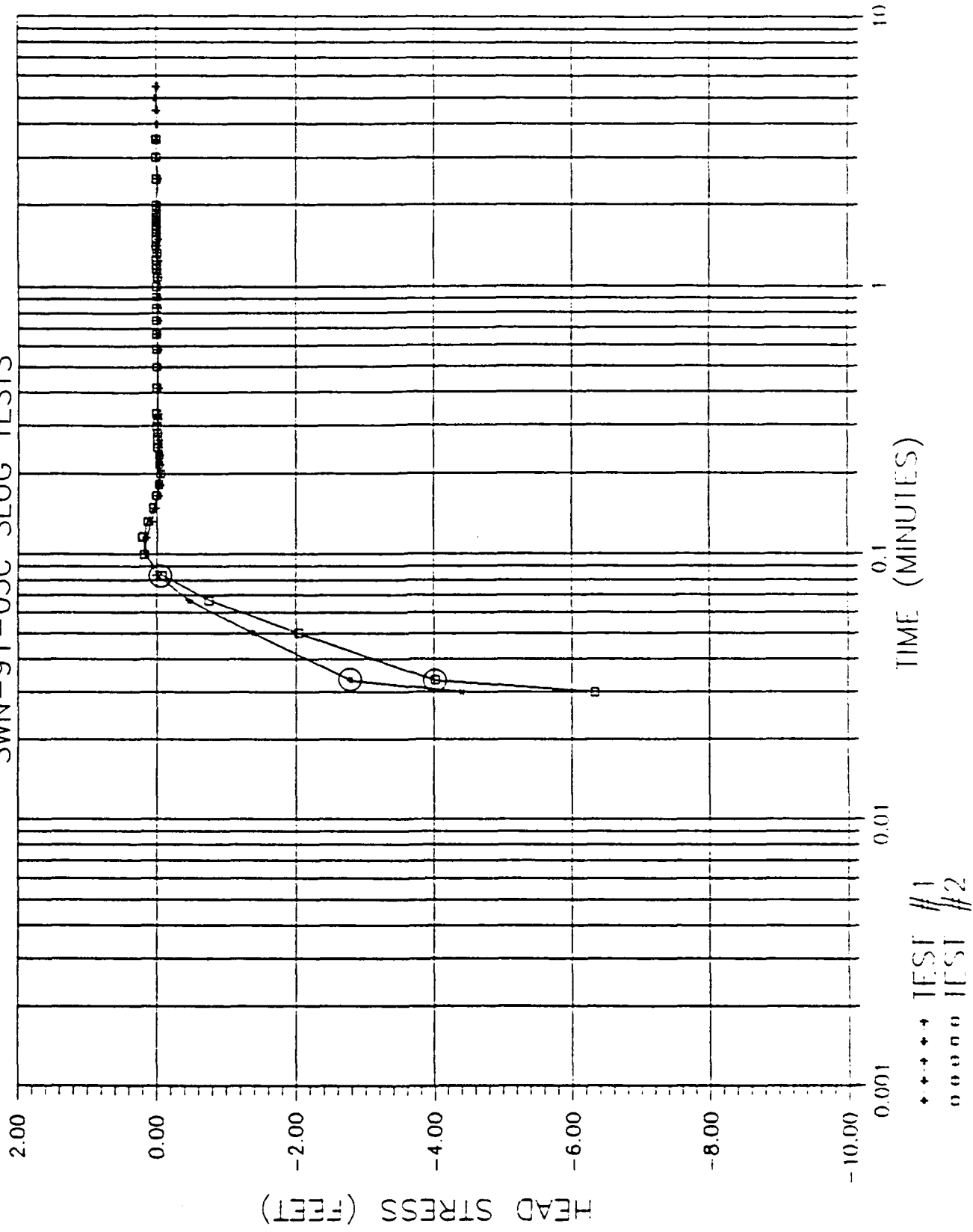
TEST 1		TEST 2	
MINUTES	FEET	MINUTES	FEET
0.0033	-0.06	0.0033	-0.04
0.0066	-0.07	0.0066	-0.04
0.0099	-0.07	0.0099	-0.04
0.0133	-0.07	0.0133	-0.05
0.0166	-0.07	0.0166	-0.77
0.02	-1.51	0.02	-4.4
0.0233	-1.81	0.0233	-5.8
0.0266	-1.96	0.0266	-5.43
0.03	-1.85	0.03	-5.17
0.0333	-1.89	0.0333	-4.79
0.05	-0.8	0.05	-1.81
0.0666	-0.04	0.0666	0.04
0.0833	0.1	0.0833	0.38
0.1	-0.02	0.1	0.2
0.1166	-0.1	0.1166	0.09
0.1333	-0.07	0.1333	0.1
0.15	-0.03	0.15	0.1
0.1666	-0.04	0.1666	0.07
0.1833	-0.06	0.1833	0.03
0.2	-0.07	0.2	-0.02
0.2166	-0.08	0.2166	-0.06
0.2333	-0.07	0.2333	-0.1
0.25	-0.07	0.25	-0.09
0.2666	-0.07	0.2666	-0.1
0.2833	-0.06	0.2833	-0.09
0.3	-0.06	0.3	-0.09
0.3166	-0.06	0.3166	-0.06
0.3333	-0.06	0.3333	-0.06
0.4167	-0.04	0.4167	-0.03
0.5	-0.04	0.5	-0.02
0.5833	-0.03	0.5833	-0.02
0.6667	-0.03	0.6667	-0.02
0.75	-0.03	0.75	-0.01
0.8333	-0.03	0.8333	-0.01
0.9167	-0.02	0.9167	-0.01
1	-0.02	1	0
1.0833	-0.02	1.0833	0
1.1667	-0.02	1.1667	-0.01
1.25	-0.02	1.25	-0.01
1.3333	-0.02	1.3333	0
1.4166	-0.02	1.4166	0
1.5	-0.02	1.5	0
1.5833	-0.02	1.5833	0
1.6667	-0.02	1.6667	0
1.75	-0.02	1.75	0
1.8333	-0.02	1.8333	0
1.9167	-0.02	1.9167	0
2	-0.02	2	0
2.5	-0.01	2.5	0
3	-0.01	3	0
3.5	-0.01	3.5	0
4	-0.01	4	0
4.5	0	4.5	0
5	0	5	0

HVORSLEV:  
 K= 0.033 CM/SEC  
 BOUWER AND RICE:  
 K= 0.020 CM/SEC

K= 0.019 CM/SEC  
 K= 0.121 CM/SEC



# SWN-91-03C SLUG TESTS



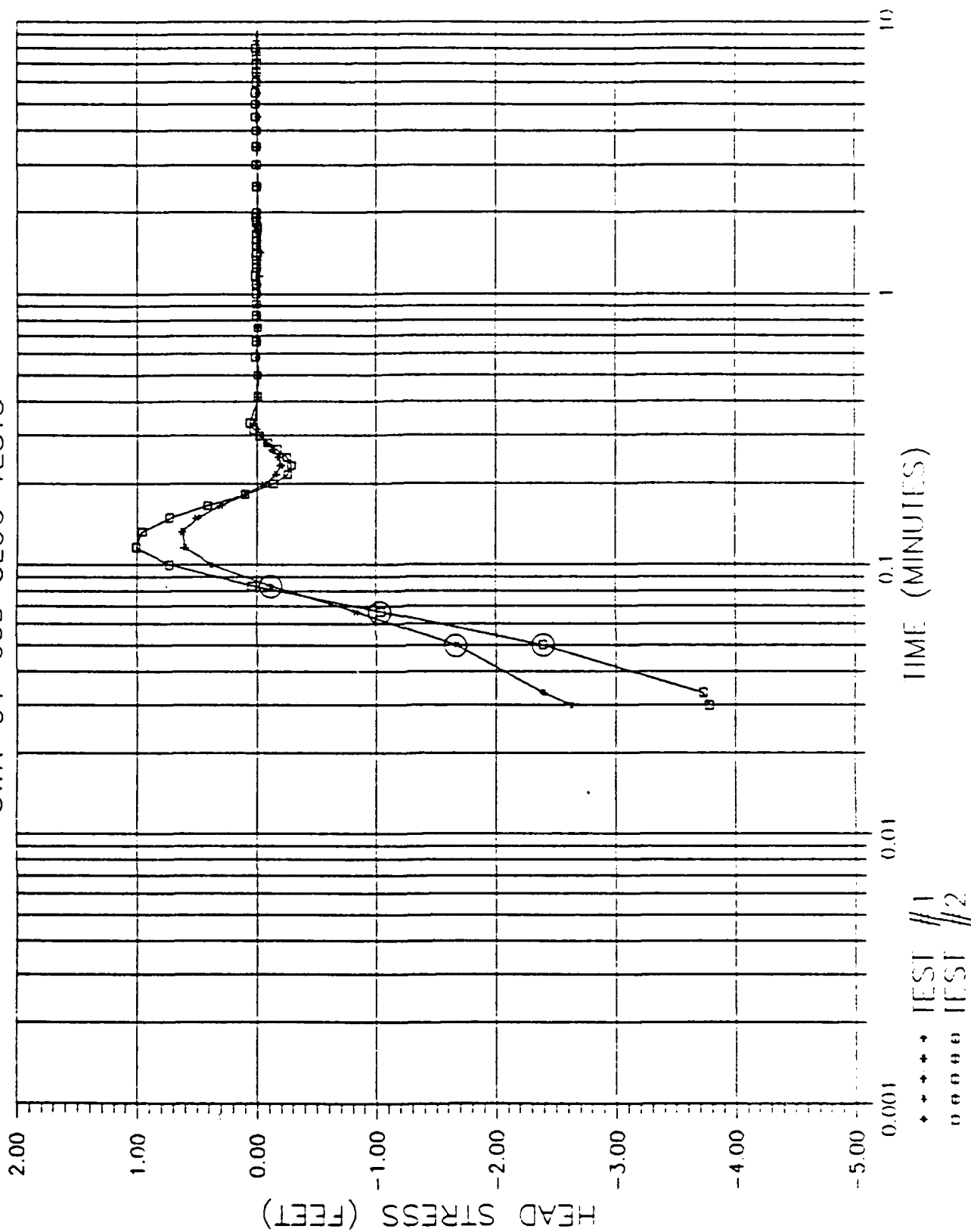
WELL SWN-91-03C  
 WELL DIAMETER=0.3125FT, SCREEN LENGTH=15FT, BORING DIAMETER=0.75FT

TEST 1		TEST 2	
MINUTES	FEET	MINUTES	FEET
0.0033	-0.24	0.0033	-0.24
0.0066	-0.38	0.0066	-0.25
0.0099	-2.90	0.0099	-2.02
0.0133	-5.57	0.0133	-6.06
0.0166	-5.27	0.0166	-6.02
0.02	-6.46	0.02	-7.06
0.0233	-4.9	0.0233	-7.27
0.0266	-4.92	0.0266	-6.57
0.03	-4.4	0.03	-6.33
0.0333	-2.79	0.0333	-4.01
0.05	-1.39	0.05	-2.04
0.0666	-0.47	0.0666	-0.79
0.0833	0	0.0833	-0.08
0.1	0.16	0.1	0.16
0.1166	0.15	0.1166	0.2
0.1333	0.08	0.1333	0.13
0.15	0.02	0.15	0.05
0.1666	-0.02	0.1666	0
0.1833	-0.05	0.1833	-0.03
0.2	-0.05	0.2	-0.05
0.2166	-0.05	0.2166	-0.03
0.2333	-0.04	0.2333	-0.03
0.25	-0.03	0.25	-0.01
0.2666	-0.03	0.2666	-0.01
0.2833	-0.02	0.2833	-0.01
0.3	-0.02	0.3	0
0.3166	-0.02	0.3166	-0.01
0.3333	-0.02	0.3333	0
0.4167	-0.02	0.4167	0
0.5	-0.02	0.5	0
0.5833	-0.02	0.5833	0
0.6667	-0.01	0.6667	0
0.75	-0.02	0.75	0
0.8333	-0.02	0.8333	0
0.9167	-0.01	0.9167	0
1	-0.02	1	0
1.0833	-0.02	1.0833	-0.01
1.1667	-0.01	1.1667	0
1.25	-0.02	1.25	0
1.3333	-0.01	1.3333	-0.01
1.4166	-0.01	1.4166	0.01
1.5	-0.02	1.5	0
1.5833	-0.01	1.5833	0
1.6667	-0.01	1.6667	0
1.75	-0.01	1.75	0
1.8333	0	1.8333	0
1.9167	-0.01	1.9167	0
2	-0.01	2	0
2.5	-0.02	2.5	0
3	0	3	0
3.5	0	3.5	0
4	0		
4.5	0		
5	0.02		
5.5	0		

HYDRAULEIC:  
 K = 0.014 CM/SEC  
 BOWLER AND RICE  
 K = 0.082 CM/SEC

K = 0.022 CM/SEC  
 K = 0.060 CM/SEC

# SWN-91-03D SLUG TESTS



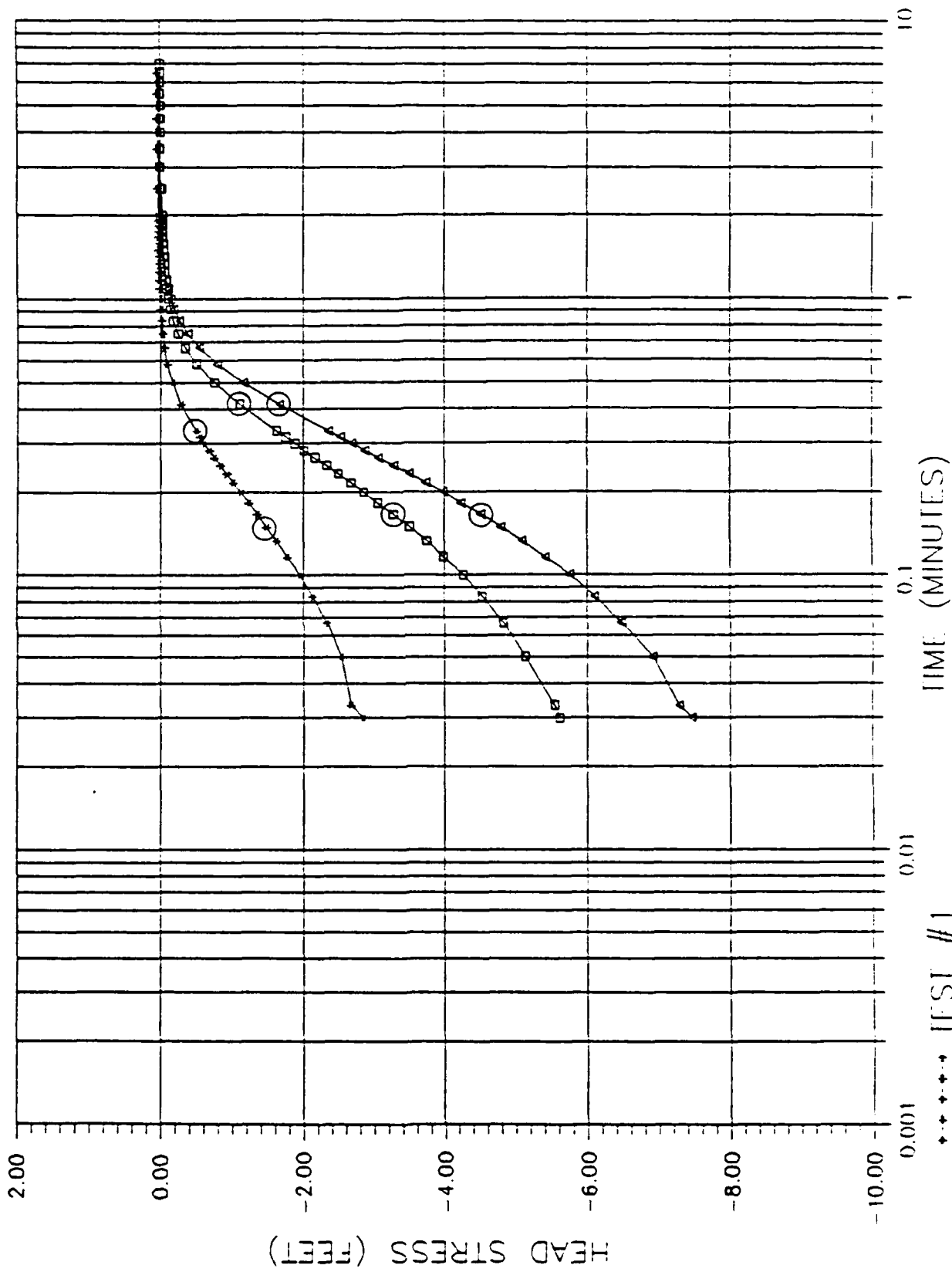
WELL SWN-91-030  
 WELL DIAMETER=0.3125FT. SCREEN LENGTH=15FT. BORING DIAMETER=0.75FT

TEST 1		TEST 2	
MINUTES	FEET	MINUTES	FEET
0.0033	-0.05	0.0033	-0.04
0.0066	-0.05	0.0066	-0.05
0.0099	-0.05	0.0099	-1.27
0.0133	-0.39	0.0133	-4.88
0.0166	-2.79	0.0166	-4.06
0.02	-2.69	0.02	-4.7
0.0233	-2.83	0.0233	-4.07
0.0266	-2.54	0.0266	-4.22
0.03	-2.63	0.03	-3.78
0.0333	-2.4	0.0333	-3.73
0.05	-1.87	0.05	-2.39
0.0666	-0.83	0.0666	-1.04
0.0833	-0.12	0.0833	0.04
0.1	0.38	0.1	0.73
0.1166	0.8	0.1166	1.01
0.1333	0.62	0.1333	0.96
0.15	0.5	0.15	0.73
0.1666	0.3	0.1666	0.41
0.1833	0.1	0.1833	0.1
0.2	-0.06	0.2	-0.14
0.2166	-0.16	0.2166	-0.28
0.2333	-0.2	0.2333	-0.29
0.25	-0.18	0.25	-0.25
0.2666	-0.13	0.2666	-0.17
0.2833	-0.08	0.2833	-0.09
0.3	-0.03	0.3	-0.02
0.3166	0	0.3166	0.03
0.3333	0.02	0.3333	0.06
0.4167	-0.01	0.4167	-0.01
0.5	-0.02	0.5	-0.01
0.5633	-0.01	0.5633	0.01
0.6667	-0.01	0.6667	0
0.75	-0.01	0.75	-0.01
0.8333	-0.01	0.8333	0
0.9167	-0.01	0.9167	0
1	-0.02	1	0
1.0833	-0.01	1.0833	0
1.1667	-0.02	1.1667	0.01
1.25	-0.01	1.25	0
1.3333	-0.01	1.3333	0
1.4166	-0.03	1.4166	0
1.5	-0.01	1.5	0
1.5833	-0.01	1.5833	0
1.6667	-0.01	1.6667	0
1.75	-0.01	1.75	-0.01
1.8333	-0.01	1.8333	0
1.9167	-0.01	1.9167	0.01
2	-0.01	2	0
2.5	-0.01	2.5	0
3	0	3	0
3.5	-0.01	3.5	0
4	-0.01	4	0
4.5	-0.01	4.5	0.01
5	0	5	0.01
5.5	-0.01	5.5	0.01
6	-0.01	6	0
6.5	0	6.5	0
7	0	7	0
7.5	0	7.5	0
8	0	8	0.01
8.5	0		
9	0		

HYDRAULEY  
 K = 0.020 CM/SEC  
 BOUWER AND RICE  
 K = 0.11 CM/SEC

K = 0.010 CM/SEC  
 K = 0.072 CM/SEC

SWN-91-03E SLUG TESTS



WELL SWN-01-03E  
 WELL DIAMETER=0.3125FT. SCREEN=38FT. BORING DIAMETER=0.468FT

TEST 1		TEST 2		TEST 3	
MINUTES	FEET	MINUTES	FEET	MINUTES	FEET
0.0033	-0.07	0.0033	-0.09	0.0033	-0.2
0.0066	-0.07	0.0066	-0.09	0.0066	-0.2
0.0099	-0.08	0.0099	-1.2	0.0099	-0.22
0.0133	-0.09	0.0133	-4.75	0.0133	-4.48
0.0166	-0.09	0.0166	-5.96	0.0166	-7.27
0.02	-0.78	0.02	-5.83	0.02	-7.77
0.0233	-2.72	0.0233	-5.82	0.0233	-7.58
0.0266	-2.73	0.0266	-6.84	0.0266	-7.54
0.03	-2.85	0.03	-6.81	0.03	-7.48
0.0333	-2.68	0.0333	-5.64	0.0333	-7.28
0.06	-2.54	0.06	-5.13	0.06	-6.91
0.0666	-2.34	0.0666	-4.82	0.0666	-6.47
0.0833	-2.14	0.0833	-4.53	0.0833	-6.1
0.1	-1.96	0.1	-4.28	0.1	-6.75
0.1166	-1.78	0.1166	-3.88	0.1166	-6.41
0.1333	-1.63	0.1333	-3.75	0.1333	-5.99
0.15	-1.48	0.15	-3.51	0.15	-4.78
0.1666	-1.38	0.1666	-3.28	0.1666	-4.51
0.1833	-1.24	0.1833	-3.08	0.1833	-4.23
0.2	-1.13	0.2	-2.88	0.2	-3.88
0.2166	-1.02	0.2166	-2.68	0.2166	-3.73
0.2333	-0.93	0.2333	-2.5	0.2333	-3.5
0.25	-0.84	0.25	-2.33	0.25	-3.28
0.2666	-0.78	0.2666	-2.17	0.2666	-3.07
0.2833	-0.69	0.2833	-2.02	0.2833	-2.88
0.3	-0.62	0.3	-1.89	0.3	-2.7
0.3166	-0.56	0.3166	-1.78	0.3166	-2.53
0.3333	-0.51	0.3333	-1.63	0.3333	-2.36
0.4167	-0.29	0.4167	-1.11	0.4167	-1.87
0.5	-0.18	0.5	-0.78	0.5	-1.16
0.5833	-0.1	0.5833	-0.51	0.5833	-0.8
0.6667	-0.06	0.6667	-0.35	0.6667	-0.56
0.75	-0.04	0.75	-0.25	0.75	-0.38
0.8333	-0.02	0.8333	-0.18	0.8333	-0.27
0.9167	-0.01	0.9167	-0.14	0.9167	-0.19
1	0	1	-0.11	1	-0.15
1.0833	0	1.0833	-0.09	1.0833	-0.12
1.1667	0.01	1.1667	-0.08	1.1667	-0.09
1.25	0.01	1.25	-0.07	1.25	-0.07
1.3333	0.01	1.3333	-0.06	1.3333	-0.07
1.4166	0.01	1.4166	-0.06	1.4166	-0.05
1.5	0.02	1.5	-0.05	1.5	-0.05
1.5833	0.01	1.5833	-0.05	1.5833	-0.04
1.6667	0.02	1.6667	-0.04	1.6667	-0.03
1.75	0.02	1.75	-0.04	1.75	-0.03
1.8333	0.02	1.8333	-0.04	1.8333	-0.02
1.9167	0.03	1.9167	-0.04	1.9167	-0.02
2	0.03	2	-0.04	2	-0.02
2.5	0.03	2.5	-0.02	2.5	0
3	0.03	3	0.01	3	0
3.5	0.04	3.5	0	3.5	0.01
4	0.04	4	0	4	0
4.5	0.04	4.5	-0.01	4.5	0.02
5	0.04	5	-0.01	5	0.01
5.5	0.04	5.5	0	5.5	0.02
6	0.04	6	0	6	0.01
6.5	0.04	6.5	0		
		7	0		

Hvorslev  
 K = 0.001 CM/SEC  
 Bouwer and Rice  
 K = 0.015 CM/SEC

K = 0.001 CM/SEC  
 K = 0.012 CM/SEC

K = 0.001 CM/SEC  
 K = 0.011 CM/SEC

PROJECT <u>BAAP/USA TUAMA</u> PERMEABILITY TESTING ANALYSES HYDRSLEV EQUATION	COMP BY <u>RTJR</u>	JOB NO
	CHK BY <u>CS</u>	DATE

$$-K = \left[ \frac{\log(H-h(t_1)) - \log(H-h(t_2))}{t_1 - t_2} \right] \frac{r^2 \log(L/r)}{2L}$$

S1123  
TEST #1

$H-h(t_1) = 3.845$  ft ( $t_1 = 1.25$  min)       $r = 0.156$  ft  
 $H-h(t_2) = 0.453$  ft ( $t_2 = 4.5$  min)       $L = 25$  ft  
 $R = 0.375$  ft

$$-K = \left[ \frac{\log(3.845) - \log(0.453)}{1.25 - 4.5} \right] \frac{(0.156)^2 \log(25/0.375)}{2(25)}$$

$$-K = [-0.286] [0.0009] = -0.0003 \text{ FE/min}$$

$$K = 0.0001 \text{ cm/s}$$

TEST #2

$H-h(t_1) = 0.818$  ft ( $t_1 = 1.0$  min)  
 $H-h(t_2) = 0.257$  ft ( $t_2 = 3.5$  min)

$$-K = \left[ \frac{\log(0.818) - \log(0.257)}{1.0 - 3.5} \right] \frac{(0.156)^2 \log(25/0.375)}{2(25)}$$

$$-K = [-0.201] [0.0009] = -0.0002 \text{ FE/min}$$

$$K = 0.0001 \text{ cm/s}$$

BGM-92 <sup>(RR)</sup>  
BGM-91-01

$H-h(t_1) = 0.63$  FE ( $t_1 = 0.1166$  min)       $r = 0.156$  ft  
 $H-h(t_2) = 0.3$  FE ( $t_2 = 0.2666$  min)       $L = 15$  ft  
 $R = 0.375$  ft

$$-K = \left[ \frac{\log(0.63) - \log(0.3)}{0.1166 - 0.2666} \right] \frac{(0.156)^2 \log(25/0.375)}{2(15)}$$

$$-K = [-2.148] [0.0013] = -0.0028 \text{ FE/min}$$

$$K = 0.0014 \text{ cm/s}$$





PROJECT <b>USATHAMA</b>	COMP BY <b>RTR</b>	JOB NO
	CHK BY <b>CS</b>	DATE

**BAAIP** PERMEABILITY TESTING

PBN-91-12C  
TEST # 1

$$\begin{aligned}
 H - h(t_1) &= 1.68 \text{ Ft} & t_1 &= 0.0333 & r^2 &= (0.15625)^2 \\
 H - h(t_2) &= 0.46 \text{ Ft} & t_2 &= 0.0833 & L &= 15 \text{ FE} \\
 & & & & R &= 0.375
 \end{aligned}$$

$$-K = \left[ \frac{\log(1.68) - \log(0.46)}{0.0333 - 0.0833} \right] \frac{(0.15625)^2 \log\left(\frac{15}{0.375}\right)}{2(15)}$$

$$-K = \left[ \frac{0.562}{-0.05} \right] [0.0013] = -0.0147 \text{ Ft/min}$$

$$\underline{K = 0.007 \text{ cm/s}}$$

PBN-91-12C  
TEST # 2

$$-K = \left[ \frac{\log(2.93) - \log(0.67)}{0.05 - 0.1} \right] \frac{(0.15625)^2 \log\left(\frac{15}{0.375}\right)}{2(15)}$$

$$-K = -[12.816][0.0013] = -0.0167 \text{ Ft/min}$$

$$\underline{K = 0.008 \text{ cm/s}}$$

PROJECT BAAP / USATHAMA  
 PERMEABILITY TESTING ANALYSES  
 Hvorslev Equation

COMP BY  
 RRR  
 CHK BY  
 CS

JOB NO  
 DATE

PBN-91-12 D

TEST #1

$H-h(t_1) = 1.97 \text{ ft}$  ( $t_1 = 0.05 \text{ min}$ )  $r = 0.156 \text{ ft}$   
 $H-h(t_2) = 0.29 \text{ ft}$  ( $t_2 = 0.0833 \text{ min}$ )  $L = 15 \text{ ft}$   
 $R = 0.375 \text{ ft}$

$$-K = \left[ \frac{\log(1.97) - \log(0.29)}{0.05 - 0.0833} \right] \frac{(0.156)^2 \log(15/0.375)}{2(15)}$$

$$-K \cdot [-24.987] [0.0017] = -0.032 \text{ Ft/min}$$

$$K = 0.017 \text{ cm/s}$$

TEST #2

$H-h(t_1) = 2.77 \text{ ft}$   $t_1 = 0.0666 \text{ min}$   
 $H-h(t_2) = 0.01 \text{ ft}$   $t_2 = 0.1 \text{ min}$

$$-K = \left[ \frac{\log(2.77) - \log(0.01)}{0.0666 - 0.1} \right] \frac{(0.156)^2 \log(15/0.375)}{2(15)}$$

$$-K \cdot [-73.128] [0.0013] = -0.095 \text{ Ft/min}$$

$$K = 0.048 \text{ cm/s}$$

TEST #3

$H-h(t_1) = 7.04 \text{ Ft}$   $t_1 = 0.05 \text{ min}$   
 $H-h(t_2) = 0.07 \text{ Ft}$   $t_2 = 0.10 \text{ min}$

$$-K = \left[ \frac{\log(7.04) - \log(0.07)}{0.05 - 0.10} \right] \frac{(0.156)^2 \log(15/0.375)}{2(15)}$$

$$-K \cdot [25.098] [0.0013] = -0.0326 \text{ Ft/min}$$

$$K = 0.016 \text{ cm/s}$$

(RD)

$$-K = [-40.049] [0.0013] = -0.052 \text{ Ft/min}$$

$$K = 0.026 \text{ cm/s}$$

PROJECT <u>BAAP/USATHAMA</u> PERMEABILITY TESTING ANALYSES <u>Hvorslev Equation</u>	COMP BY <u>KRR</u>	JOB NO
	CHK BY <u>CS</u>	DATE

ELM-91-10

TEST #1

$$H-h(t_1) = 0.2 \text{ FE}$$

$$t_1 = 0.15 \text{ MIN}$$

$$r = 0.156 \text{ ft}$$

$$H-h(t_2) = 0.1 \text{ FE}$$

$$t_2 = 0.25 \text{ MIN}$$

$$L = 20 \text{ ft}$$

$$R = 0.375 \text{ ft}$$

$$-K = \left[ \frac{\log(0.2) - \log(0.1)}{0.15 - 0.25} \right] \frac{(0.156)^2 \log\left(\frac{20}{0.375}\right)}{2(20)}$$

$$-K = \{-3.010\} \{0.0011\} = -0.003 \text{ FE/MIN}$$

$$\underline{K = 0.002 \text{ cm/s}}$$

TEST #2

$$H-h(t_1) = 0.2 \text{ FE}$$

$$t_1 = 0.2 \text{ MIN}$$

$$H-h(t_2) = 0.11 \text{ FE}$$

$$t_2 = 0.2833 \text{ MIN}$$

$$-K = \left[ \frac{\log(0.2) - \log(0.11)}{0.2 - 0.2833} \right] \left[ \frac{(0.156)^2 \log\left(\frac{20}{0.375}\right)}{2(20)} \right]$$

$$-K = \{-3.117\} \{0.0011\} = -0.003 \text{ FE/MIN}$$

$$\underline{K = 0.002 \text{ cm/s}}$$

TEST #3

$$H-h(t_1) = 0.19 \text{ FE}$$

$$t_1 = 0.2 \text{ MIN}$$

$$H-h(t_2) = 0.13 \text{ FE}$$

$$t_2 = 0.2666 \text{ MIN}$$

$$-K = \left[ \frac{\log(0.19) - \log(0.13)}{0.2 - 0.2666} \right] \frac{(0.156)^2 \log\left(\frac{20}{0.375}\right)}{2(20)}$$

$$-K = \{-2.475\} \{0.0011\} = -0.003 \text{ FE/MIN}$$

$$\underline{K = 0.002 \text{ cm/s}}$$

PROJECT BAAP / USATHAMA  
 PERMEABILITY TESTING ANALYSES  
 HUORSLEV EQUATION

COMP BY

KRR

JOB NO

CHK BY

CS

DATE

ELN-91-07A

TEST # 1

$$H-h(t_1) = 0.56 \text{ FE}$$

$$t_1 = 0.0666 \text{ MIN}$$

$$r = 0.156 \text{ ft}$$

$$H-h(t_2) = 0.19 \text{ FE}$$

$$t_2 = 0.1333 \text{ MIN}$$

$$L = 15 \text{ ft}$$

$$R = 0.375 \text{ ft}$$

$$-K = \left[ \frac{\log(0.56) - \log(0.19)}{0.0666 - 0.1333} \right] \frac{(0.156)^2 \log(15/0.375)}{2(15)}$$

$$-K = [-7.038] [0.0013] = -0.009 \text{ FE/MIN}$$

$$\underline{K = 0.005 \text{ cm/s}}$$

TEST # 2

$$H-h(t_1) = 0.6 \text{ FE}$$

$$t_1 = 0.0666 \text{ MIN}$$

$$H-h(t_2) = 0.19 \text{ FE}$$

$$t_2 = 0.1333 \text{ MIN}$$

$$-K = \left[ \frac{\log(0.6) - \log(0.19)}{0.0666 - 0.1333} \right] \frac{(0.156)^2 \log(15/0.375)}{2(15)}$$

$$-K = [-7.487] [0.0013] = -0.010 \text{ FE/MIN}$$

$$\underline{K = 0.005 \text{ cm/s}}$$

TEST # 3

$$H-h(t_1) = 0.58 \text{ FE}$$

$$t_1 = 0.0666 \text{ MIN}$$

$$H-h(t_2) = 0.18 \text{ FE}$$

$$t_2 = 0.1333 \text{ MIN}$$

$$-K = \left[ \frac{\log(0.58) - \log(0.18)}{0.0666 - 0.1333} \right] \frac{(0.156)^2 \log(15/0.375)}{2(15)}$$

$$-K = [-7.618] [0.0013] = \cancel{0.009 \text{ FE/MIN}}^{\text{RER}} - 0.01 \text{ FE/MIN}$$

$$\underline{K = 0.005 \text{ cm/s}}$$

PROJECT BAAP/USATHAMA  
 PERMEABILITY TESTING ANALYSES  
 HOURSLEY ANALYSIS

COMP BY  
 RRR  
 CHK BY  
 LJS

JOB NO  
 DATE

ELN-91-0713

TEST #1

$H-h(t_1) = 5.2$  ft  $t_1 = 0.03$  MIN  $r = 0.156$  ft  
 $H-h(t_2) = 1.79$  ft  $t_2 = 0.05$  MIN  $R = 0.375$  ft  
 $L = 15$  ft

$$-K = \left[ \frac{\log(5.2) - \log(1.79)}{0.03 - 0.05} \right] \frac{(0.156)^2 \log(15/0.375)}{2(15)}$$

$$-K = [-23.158] [0.0013] = -0.030 \text{ FE/MIN}$$

$$K = 0.015 \text{ cm/s}$$

TEST #2

$H-h(t_1) = 5.88$  ft  $t_1 = 0.0266$  MIN  
 $H-h(t_2) = 1.74$  ft  $t_2 = 0.05$  MIN

$$-K = \left[ \frac{\log(5.88) - \log(1.74)}{0.0266 - 0.05} \right] \frac{(0.156)^2 \log(15/0.375)}{2(15)}$$

$$-K = [-22.599] [0.0013] = -0.029 \text{ FE/MIN}$$

$$K = 0.015 \text{ cm/s}$$

TEST #3

$H-h(t_1) = 5.93$  ft  $t_1 = 0.0266$  MIN  
 $H-h(t_2) = 1.82$  ft  $t_2 = 0.05$  MIN

$$-K = \left[ \frac{\log(5.93) - \log(1.82)}{0.0266 - 0.05} \right] \frac{(0.156)^2 \log(15/0.375)}{2(15)}$$

$$-K = [-21.922] [0.0013] = -0.028 \text{ FE/MIN}$$

$$K = 0.014 \text{ cm/s}$$

PROJECT <u>BAAP / USATHAMA</u>	COMP BY <u>RRR</u>	JOB NO
	CHK BY <u>[Signature]</u>	DATE

SWN-91-03C

TEST # 1

$H-h(t_1) = 2.79 \text{ ft}$      $t_1 = 0.0333 \text{ min}$      $r^2 = (0.156)^2 \text{ ft}$   
 $H-h(t_2) = 0.47 \text{ ft}$      $t_2 = 0.0666 \text{ min}$      $L = 15 \text{ ft}$   
 $R = 0.375 \text{ ft}$

$$-K = \left[ \frac{\log(2.79) - \log(0.47)}{0.0333 - 0.0666} \right] \left[ \frac{(0.156)^2 \log(15/0.375)}{2(15)} \right]$$

$-K = \left[ \frac{-23.228}{-0.0333} \right] [0.0013] = -0.031 \text{ FE/min (RN)}$   
 $\text{(21)}$      $0.015$   
 $K = 0.014 \text{ FE/min (RN)}$

TEST # 2

$H-h(t_1) = 4.01 \text{ ft}$      $t_1 = 0.0333 \text{ min}$   
 $H-h(t_2) = 0.08 \text{ ft}$      $t_2 = 0.0833 \text{ min}$

$$-K = \left[ \frac{\log(4.01) - \log(0.08)}{0.0333 - 0.0833} \right] \left[ \frac{(0.156)^2 \log(15/0.375)}{2(15)} \right]$$

$-K = [-34.001] [0.0013] = -0.044 \text{ FE/min}$   
 $K = 0.022 \text{ cm/s}$

SWN-91-03B

TEST # 1

$H-h(t_1) = 1.89 \text{ ft}$      $t_1 = 0.0333 \text{ min}$      $\text{(RN)}$   
 $H-h(t_2) = 0.04 \text{ ft}$      $t_2 = 0.0666 \text{ min}$

$$-K = \left[ \frac{\log(1.89) - \log(0.04)}{0.0333 - 0.0666} \right] \left[ \frac{(0.156)^2 \log(15/0.375)}{2(15)} \right]$$

$-K = [-50.282] [0.0013] = -0.065 \text{ FE/min}$

$K = 0.033 \text{ cm/s}$

TEST # 2

$H-h(t_1) = 4.79 \text{ ft}$      $t_1 = 0.0333 \text{ min}$   
 $H-h(t_2) = 1.61 \text{ ft}$      $t_2 = 0.05 \text{ min}$      $\text{(RN)}$

$$-K = \left[ \frac{\log(4.79) - \log(1.61)}{0.0333 - 0.05} \right] \left[ \frac{(0.156)^2 \log(15/0.375)}{2(15)} \right]$$

$-K = [-28.354] [0.0013] = -0.037 \text{ FE/min}$

$K = 0.019 \text{ cm/s}$

PROJECT <u>BADGER AAP</u> PERMEABILITY TESTING ANALYSES USING <u>Hvorslev EQUATION</u>	COMP BY <u>RJR</u>	JOB NO
	CHK BY <u>LD</u>	DATE <u>8.28.92</u>

$$-K = \left[ \frac{\log (H-h(t_1)) - \log (H-h(t_2))}{t_1 - t_2} \right] \frac{r^2 \log (L/R)}{2L}$$

SWN-91-03D  
TEST # 1

$H-h(t_1) = 1.67$  Ft  $t_1 = 0.05$  min  $r^2 = (0.15625)^2$   
 $H-h(t_2) = 0.12$  Ft  $t_2 = 0.0833$   $L = 15$  ft  
 $R = 0.375$

$$-K = \left[ \frac{\log (1.67) - \log (0.12)}{0.05 - 0.0833} \right] \frac{(0.15625)^2 \log (15/0.375)}{2(15)}$$

$$-K = [-34.34] \left( \frac{0.039 \text{ (RP)}}{30} \right) = -0.04 \text{ ft/min}$$

$$K = 0.02 \text{ cm/s}$$

TEST #2 (RP)  
 $H-h(t_1) = \cancel{3.12} 2.39$   $t_1 = 0.05$   
 $H-h(t_2) = 1.04$   $t_2 = 0.0666$

$$-K = \left[ \frac{\log (2.39) - \log (1.04)}{(0.05 - 0.0666)} \right] \frac{(0.15625)^2 \log (15/0.375)}{2(15)}$$

$$K = 0.028 \text{ ft/min}$$

$$K = 0.01 \text{ cm/s}$$

PROJECT BAAP / USATHAMA

COMP BY

RRR

JOB NO

CHK BY

CS

DATE

PERM TESTS

SWN-91-03E

TEST # 1

$$H-h_1(t_1) = 1.49 \text{ ft} \quad t_1 = 0.150 \text{ min}$$

$$H-h_2(t_2) = 0.51 \text{ ft} \quad t_2 = 0.333 \text{ min}$$

$$r = 0.229 \text{ ft}$$

$$R = 0.229 \text{ ft}$$

$$L = 38 \text{ ft}$$

$$-K = \left[ \frac{\log(1.49) - \log(0.51)}{(0.15 - 0.333)} \right] \frac{(0.156)^2 \log(38/0.229)}{2(38)}$$

$$-K = [-2.544] [0.0007] = -0.002 \text{ ft/min}$$

$$= \underline{0.0009 \text{ cm/s}}$$

TEST # 2

$$H-h(t_1) = 3.28 \text{ ft} \quad t_1 = 0.166 \text{ min}$$

$$H-h(t_2) = 1.11 \text{ ft} \quad t_2 = 0.416 \text{ min}$$

$$-K = \left[ \frac{\log(3.28) - \log(1.11)}{(0.166 - 0.416)} \right] \frac{(0.156)^2 \log(38/0.229)}{2(38)}$$

$$-K = [-1.882] [0.0007] = -0.001 \text{ ft/min}$$

$$= \underline{0.0007 \text{ cm/s}}$$

TEST # 3

$$H-h(t_1) = 4.51 \text{ ft} \quad (t_1) = 0.167 \text{ min}$$

$$H-h(t_2) = 1.67 \text{ ft} \quad (t_2) = 0.417 \text{ min}$$

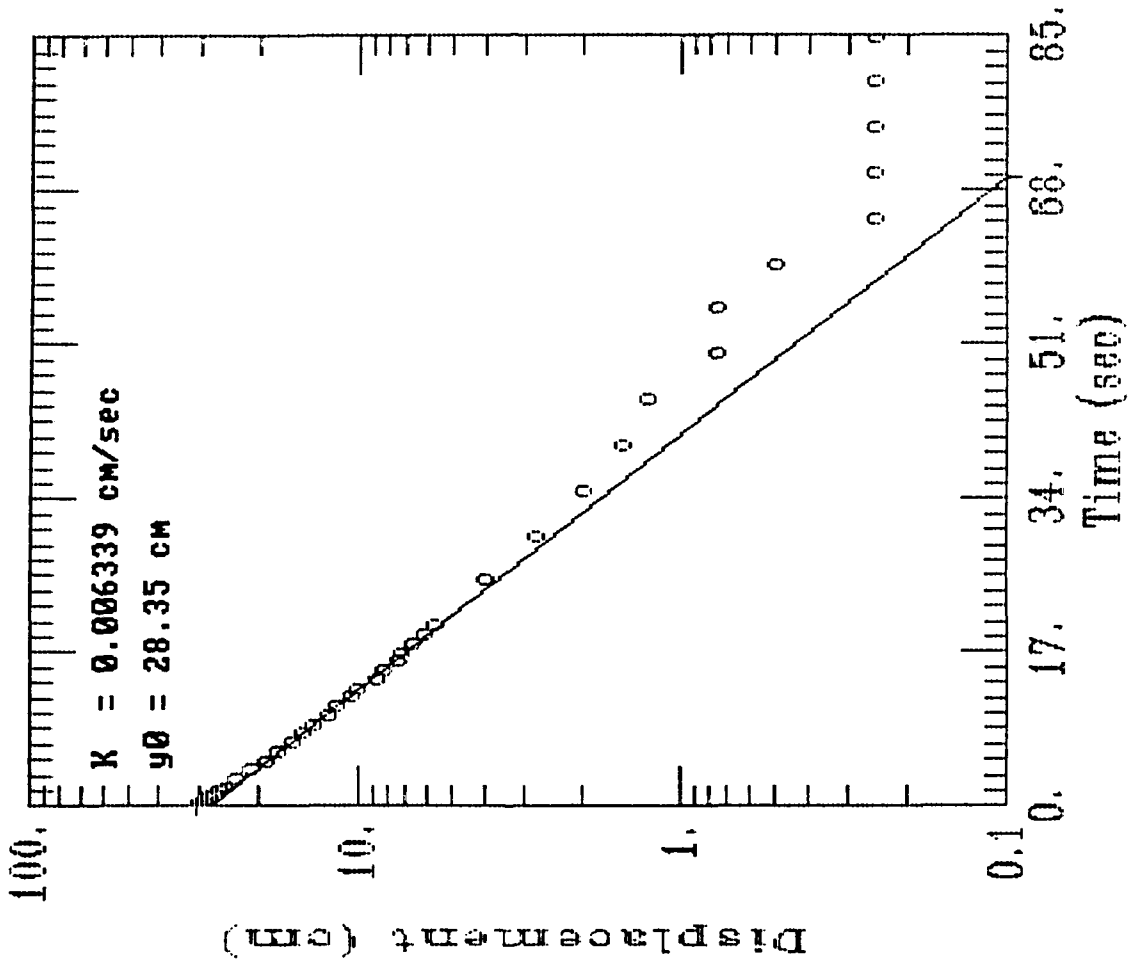
$$-K = \left[ \frac{\log(4.51) - \log(1.67)}{(0.167 - 0.417)} \right] \frac{(0.156)^2 \log(38/0.229)}{2(38)}$$

$$-K = [-1.726] [0.0007] = -0.001 \text{ ft/min}$$

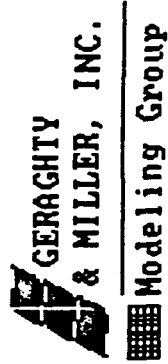
$$= \underline{0.0007 \text{ cm/s}}$$



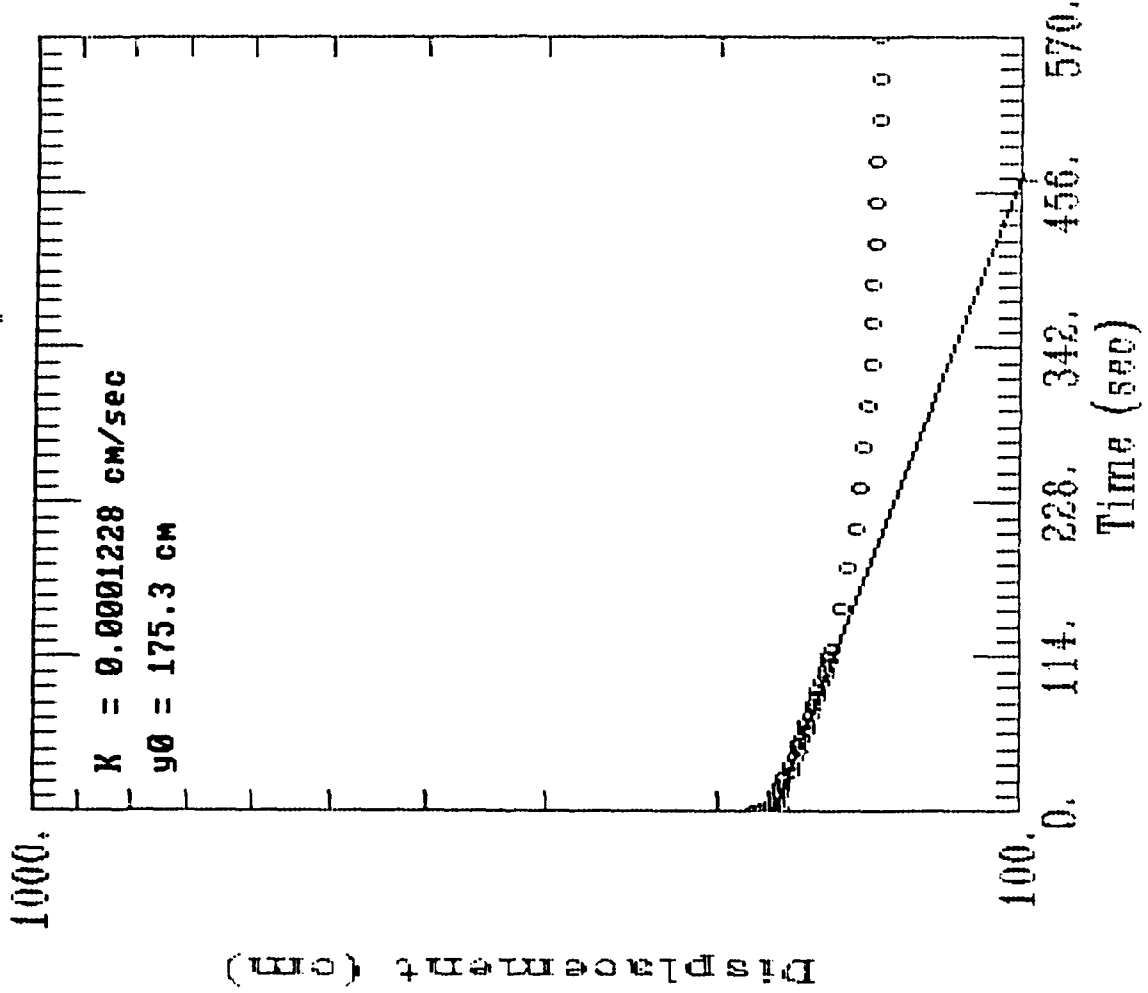
BGM-01-01



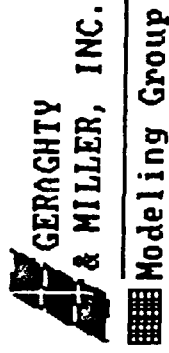
AQTESOLV



S1123 TEST #2

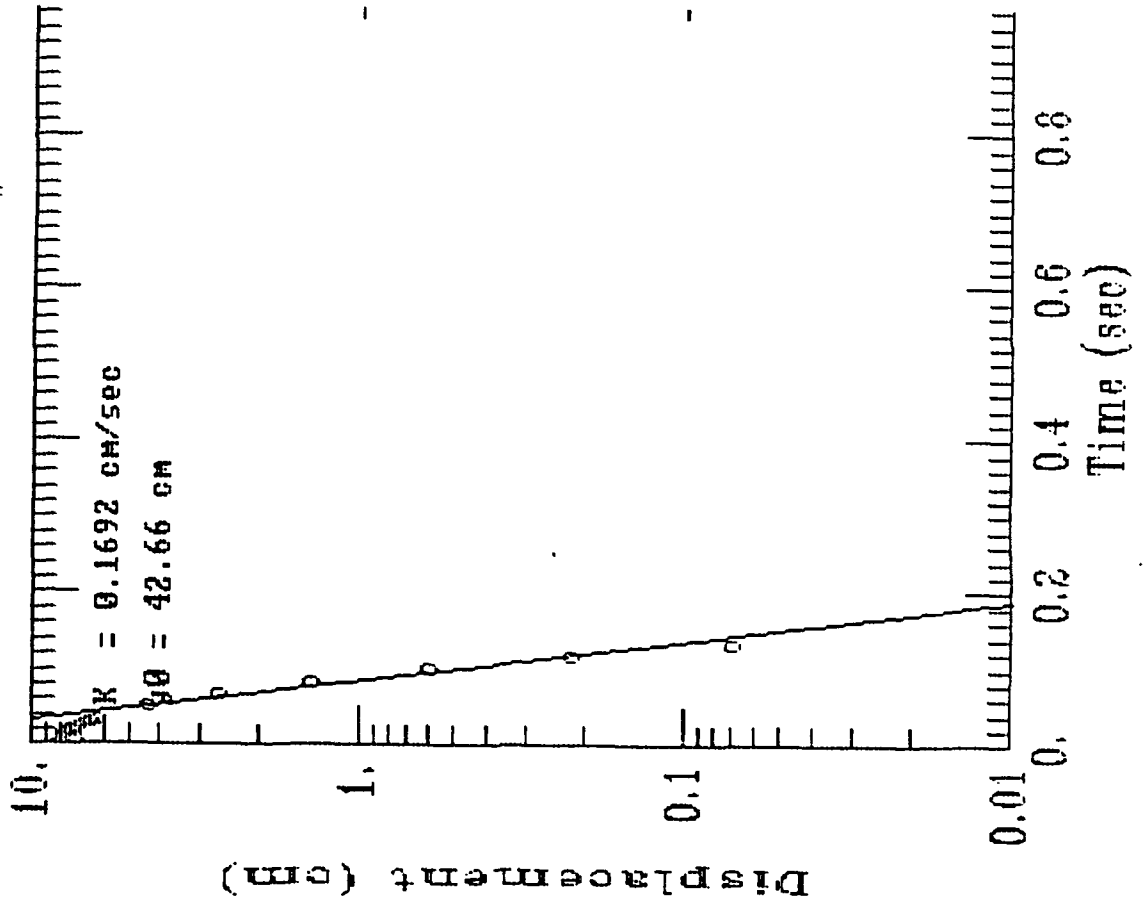


AQTESOLV

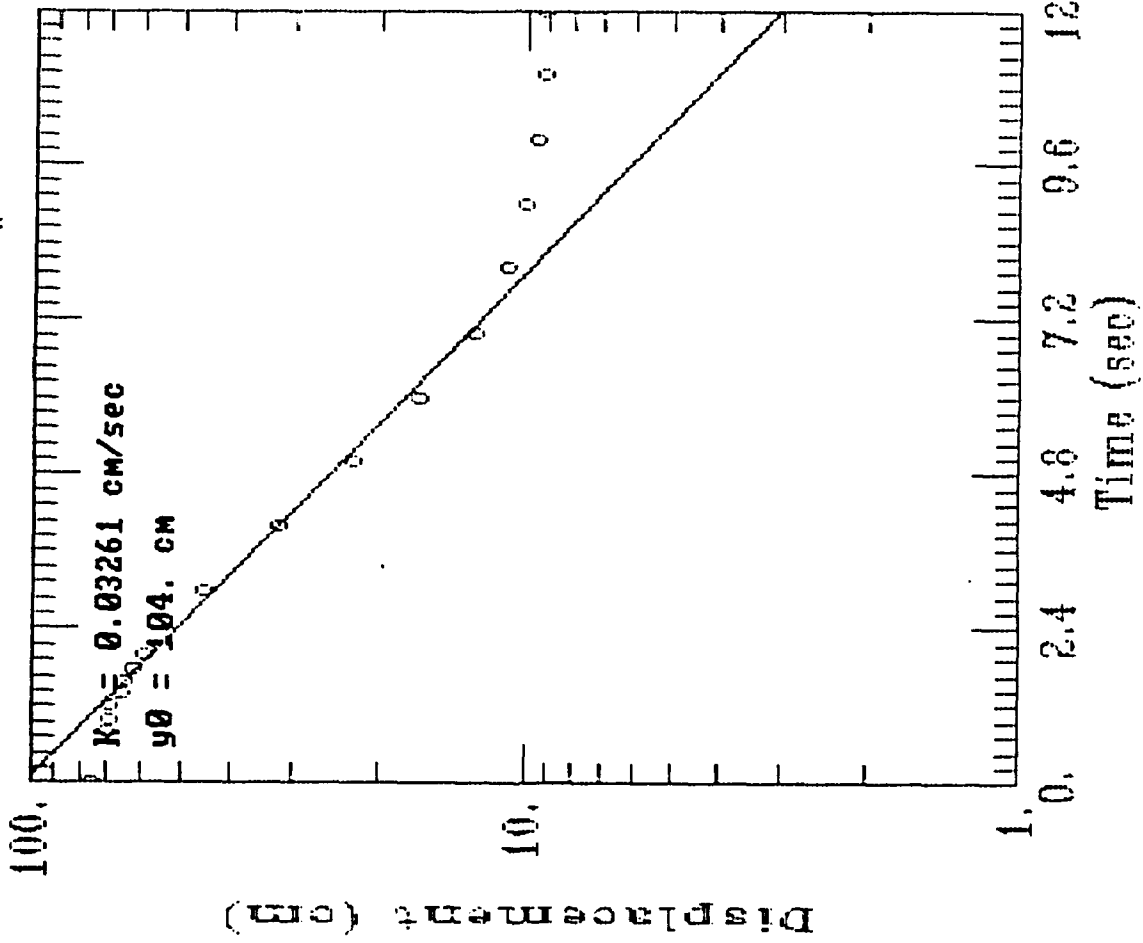


Modeling Group

PHN-91-06C TEST #1



PBN-01-12C TEST #1

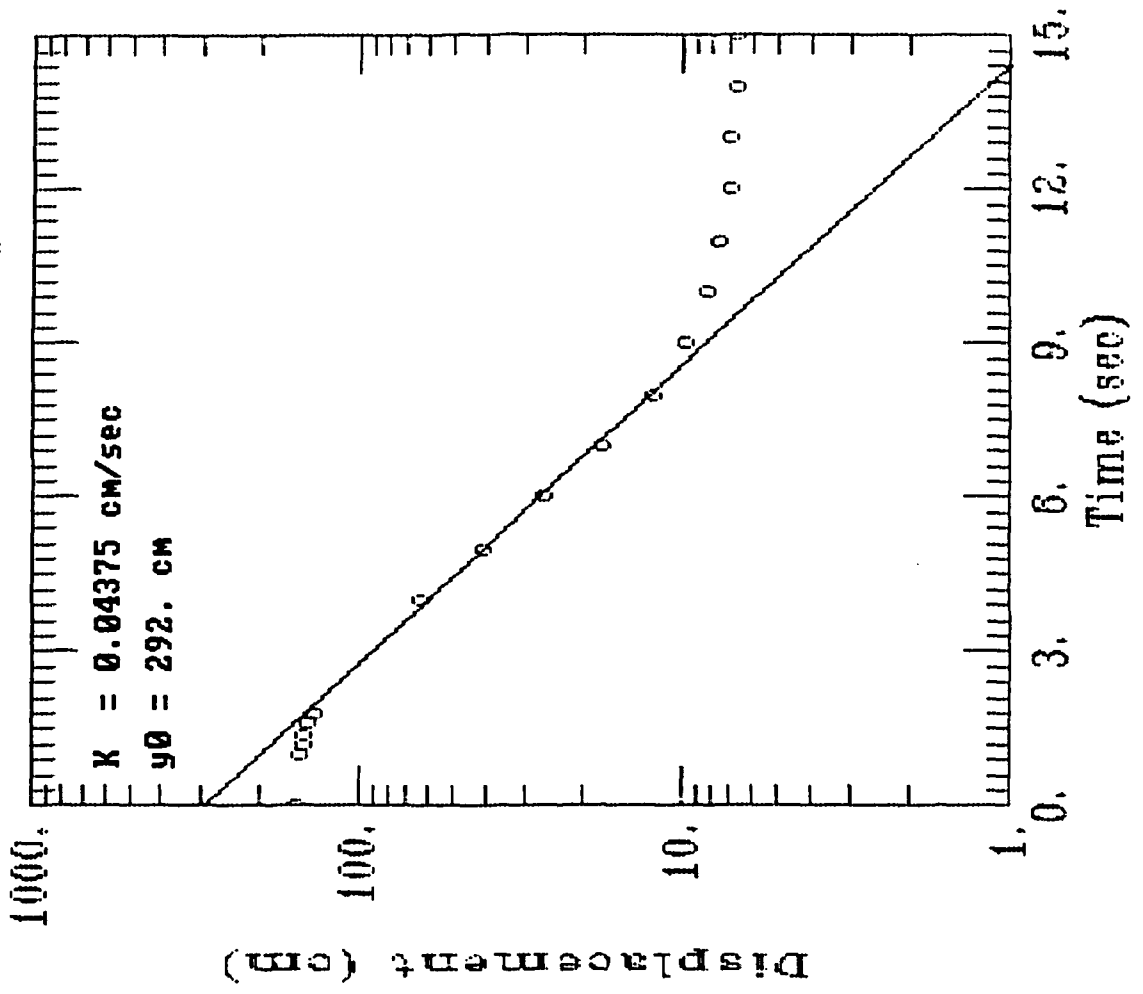


AQTESOLV

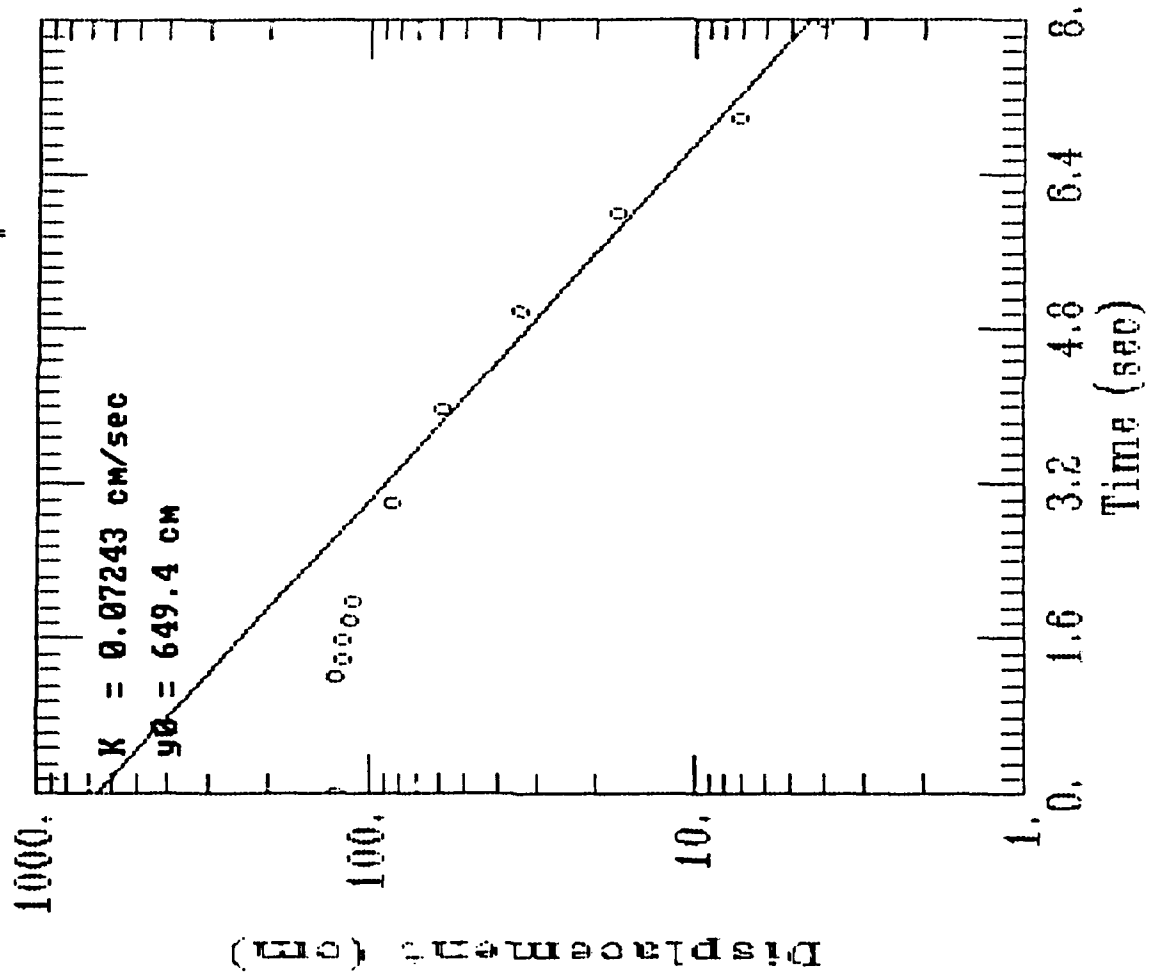
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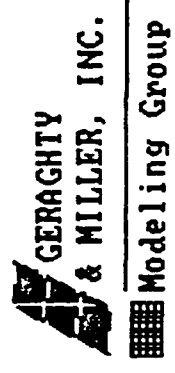
PBN-01-12C TEST #2



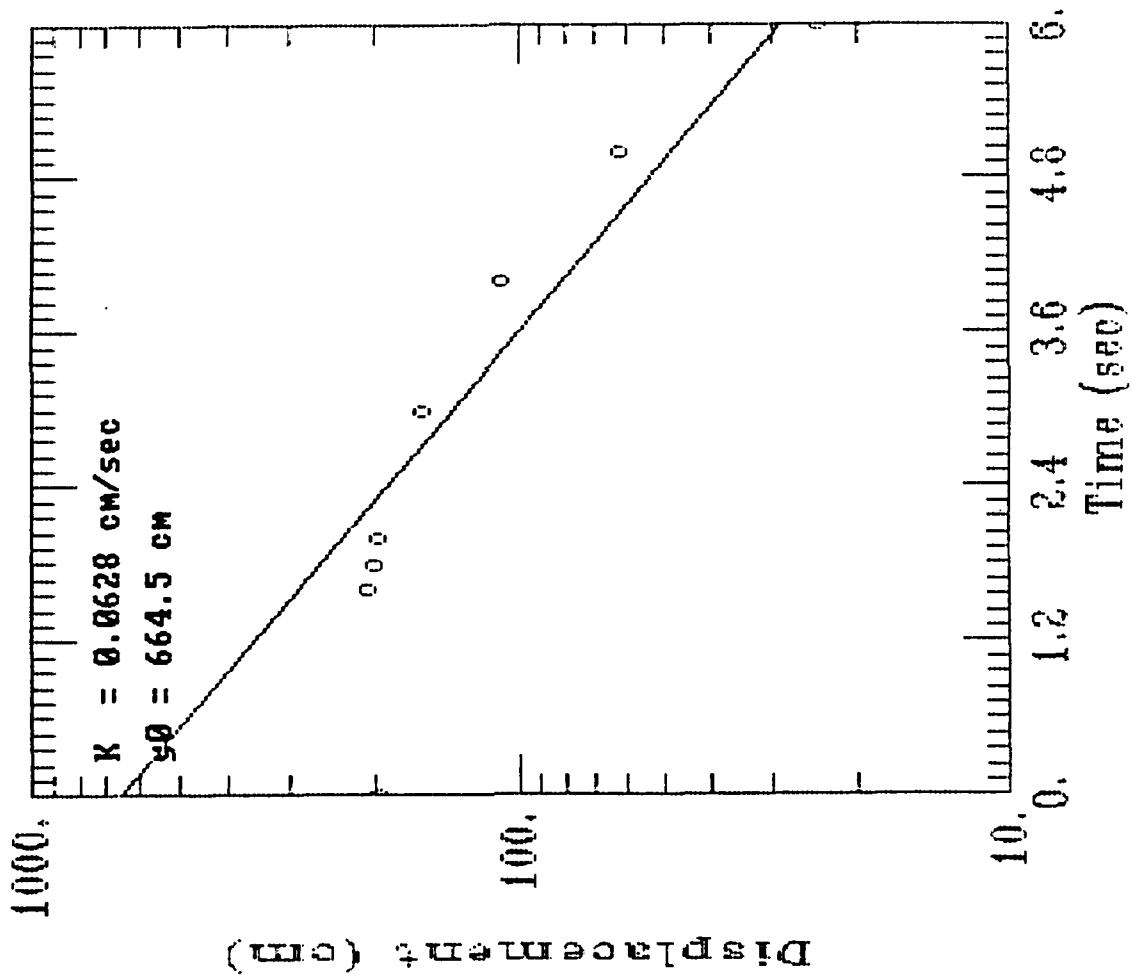
# PBN-01-12D TEST #1



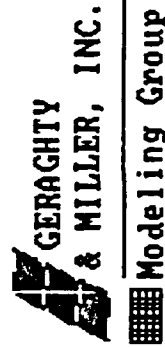
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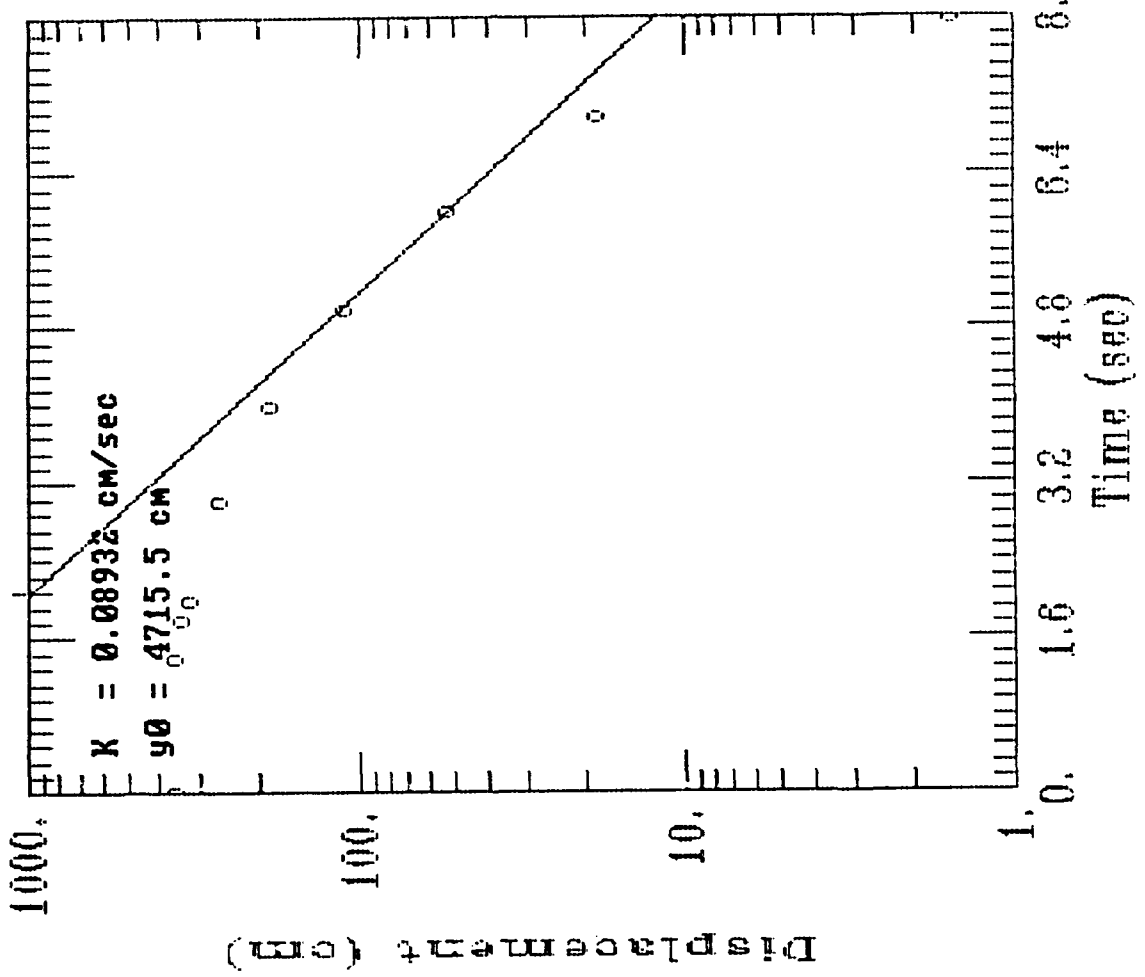
# PBN-01-12D TEST #2



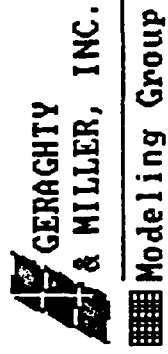
AQTESOLV



PBN-91-12D TEST #3

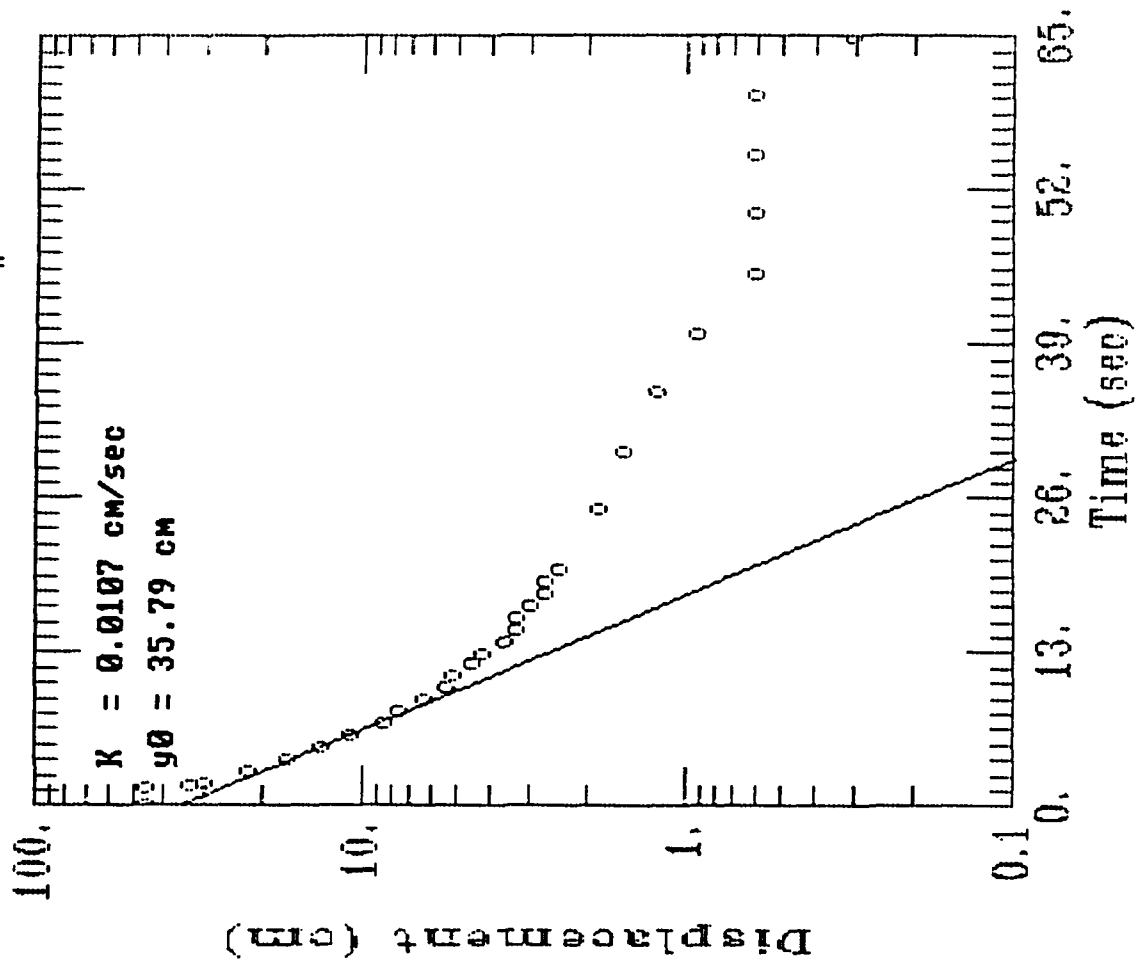


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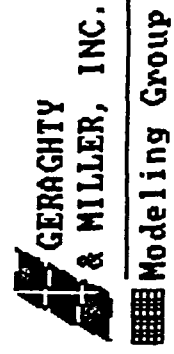




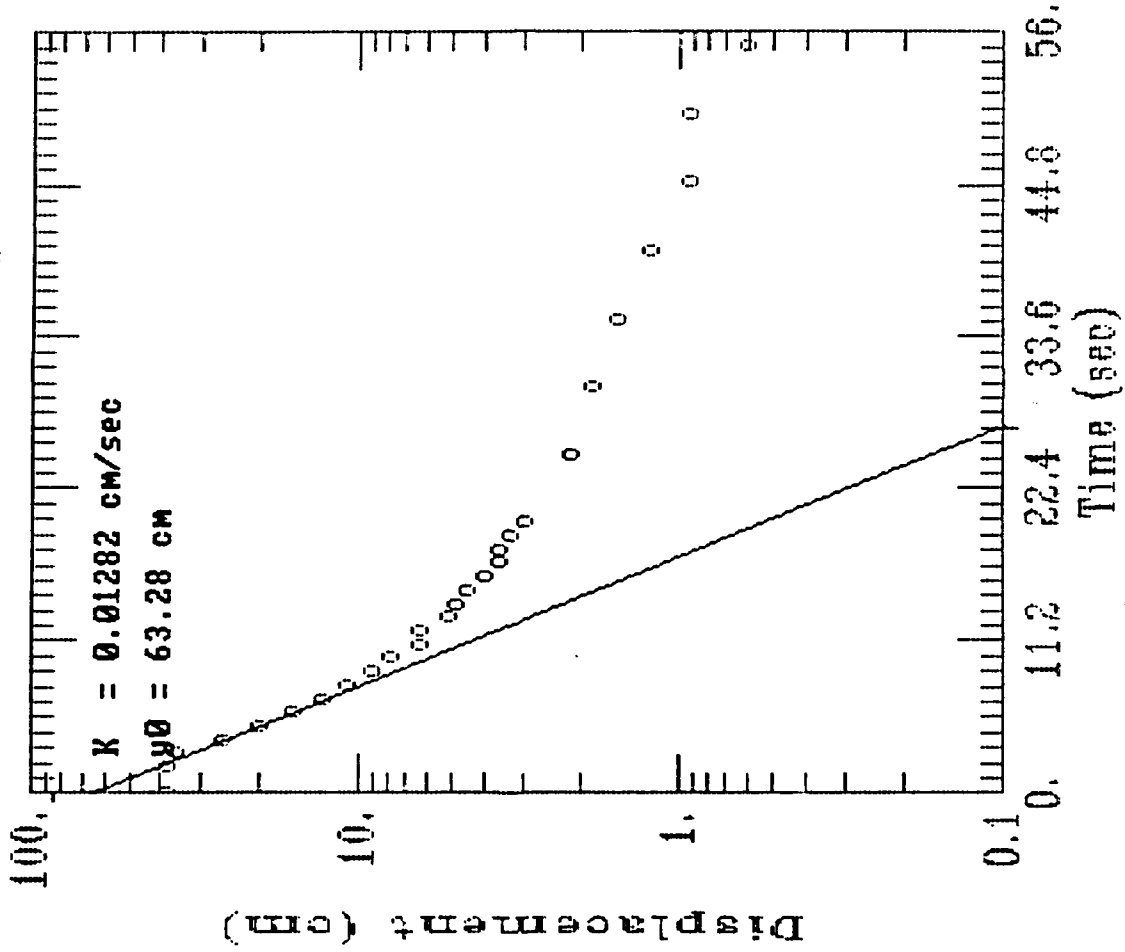
# ELM-91-10 TEST #1



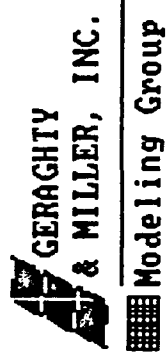
AQTESOLV



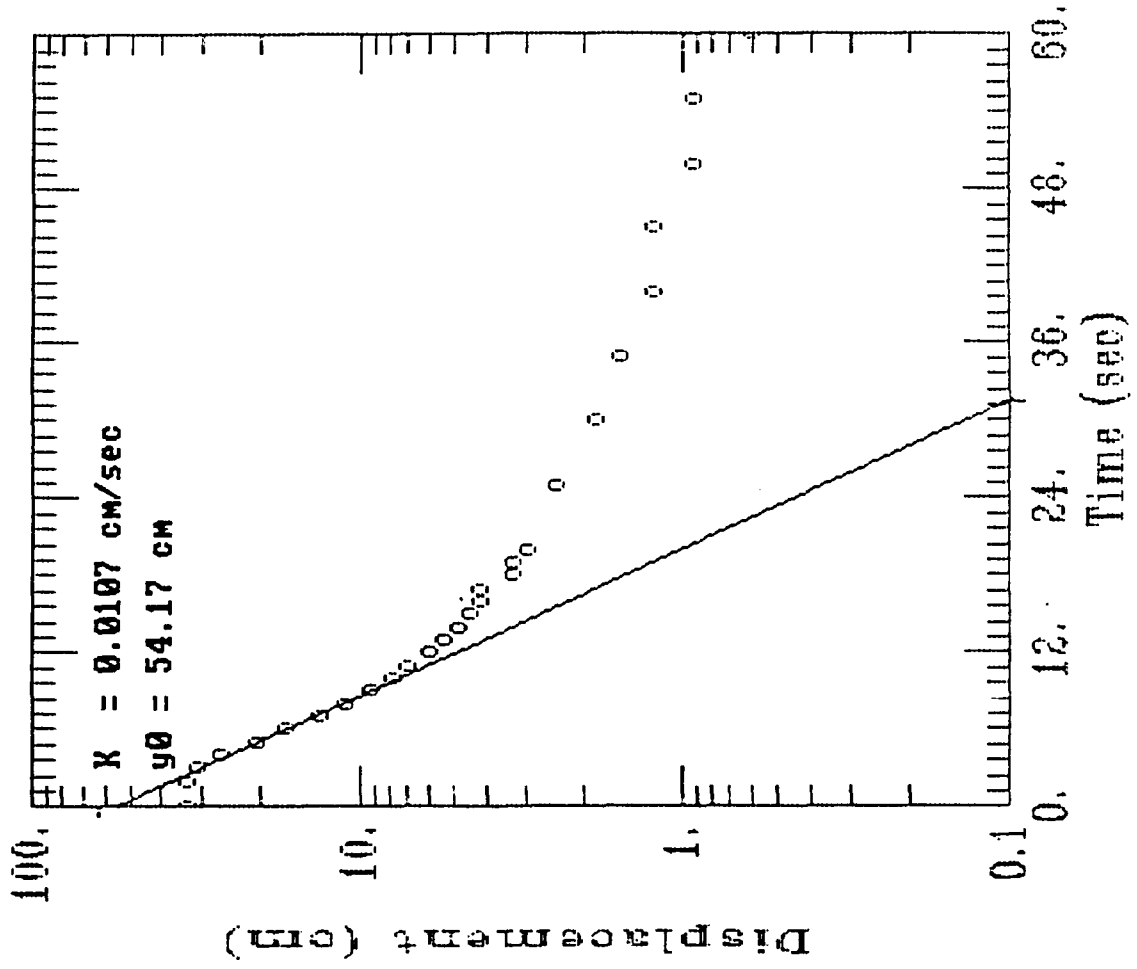
# ELM-91-10 TEST #2



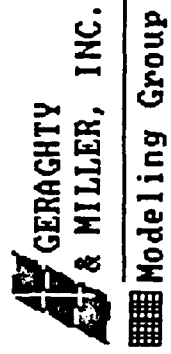
AQTESOLV



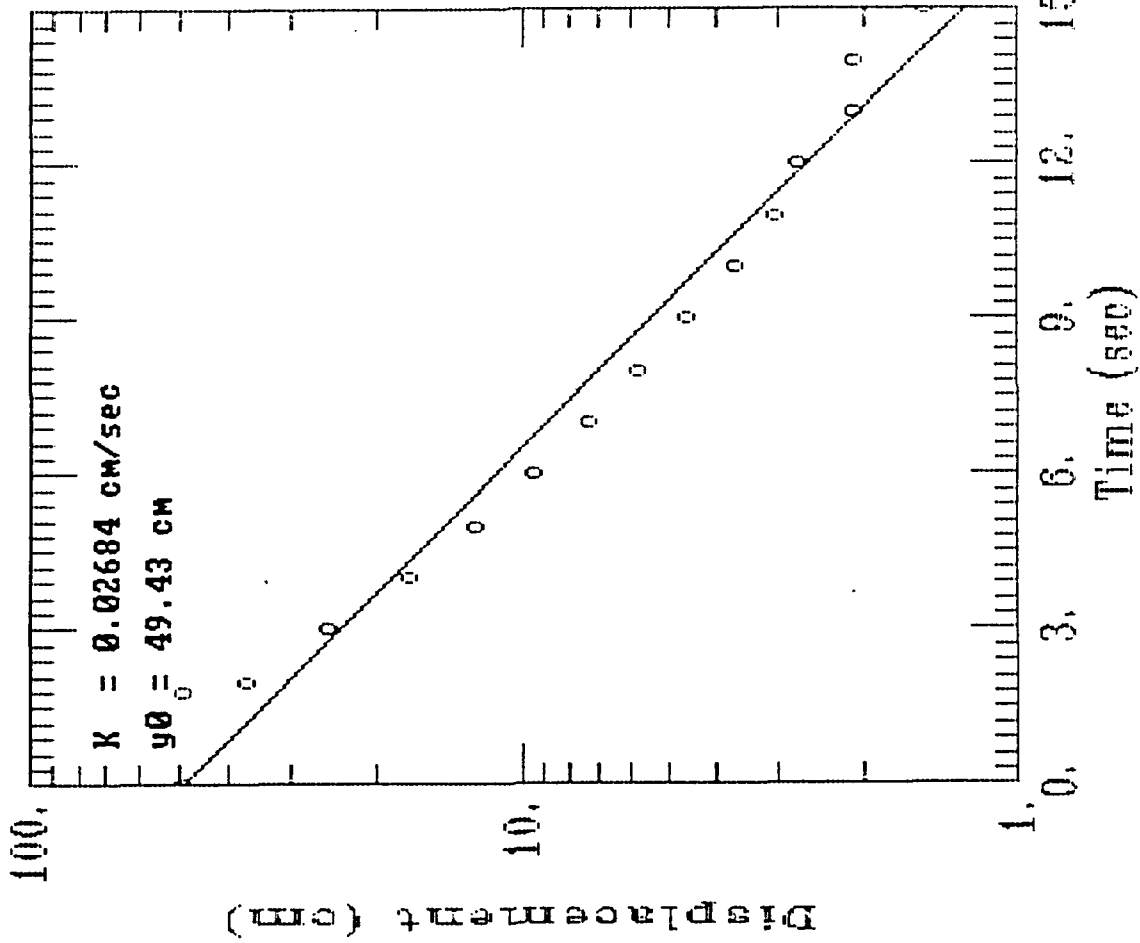
# ELM-91-10 TEST #3



AQTESOLV



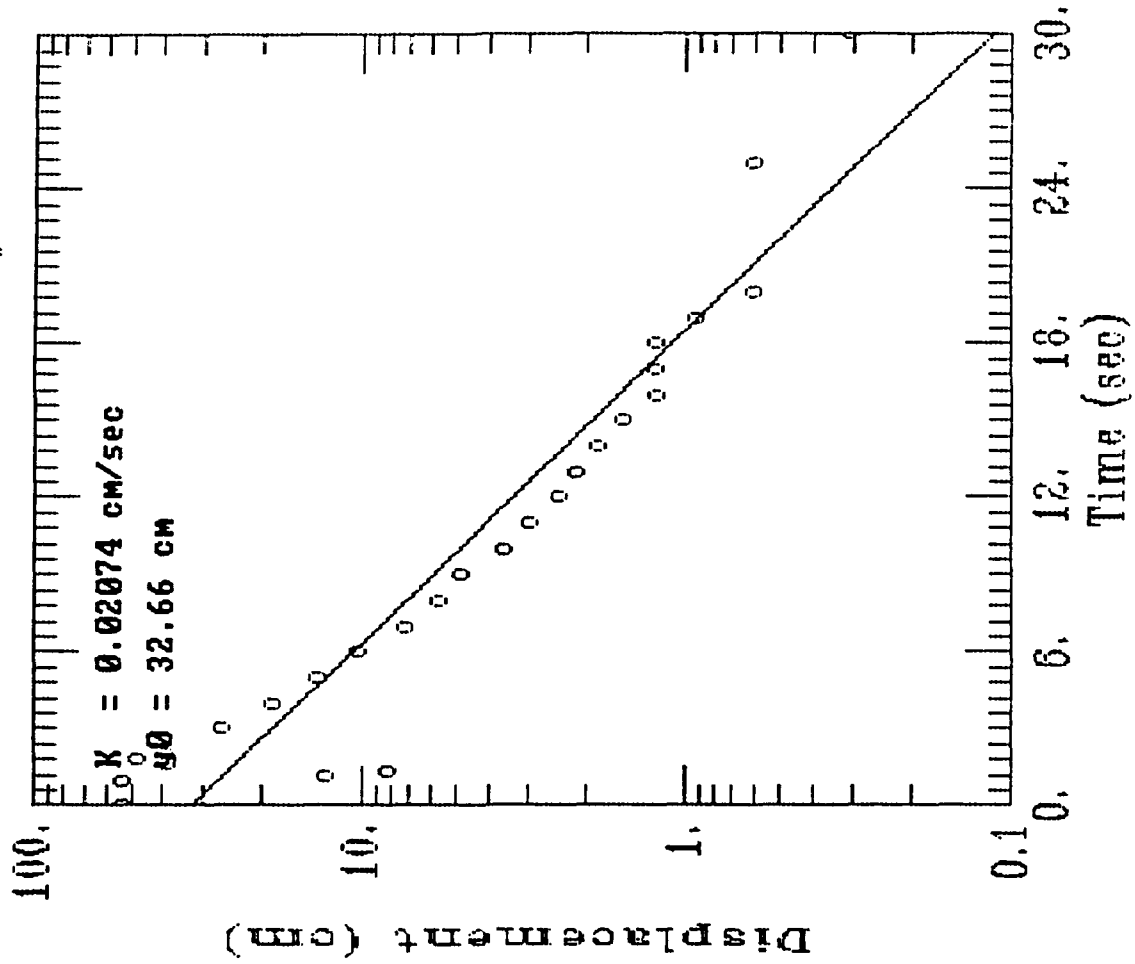
# ELN-91-07A TEST #1



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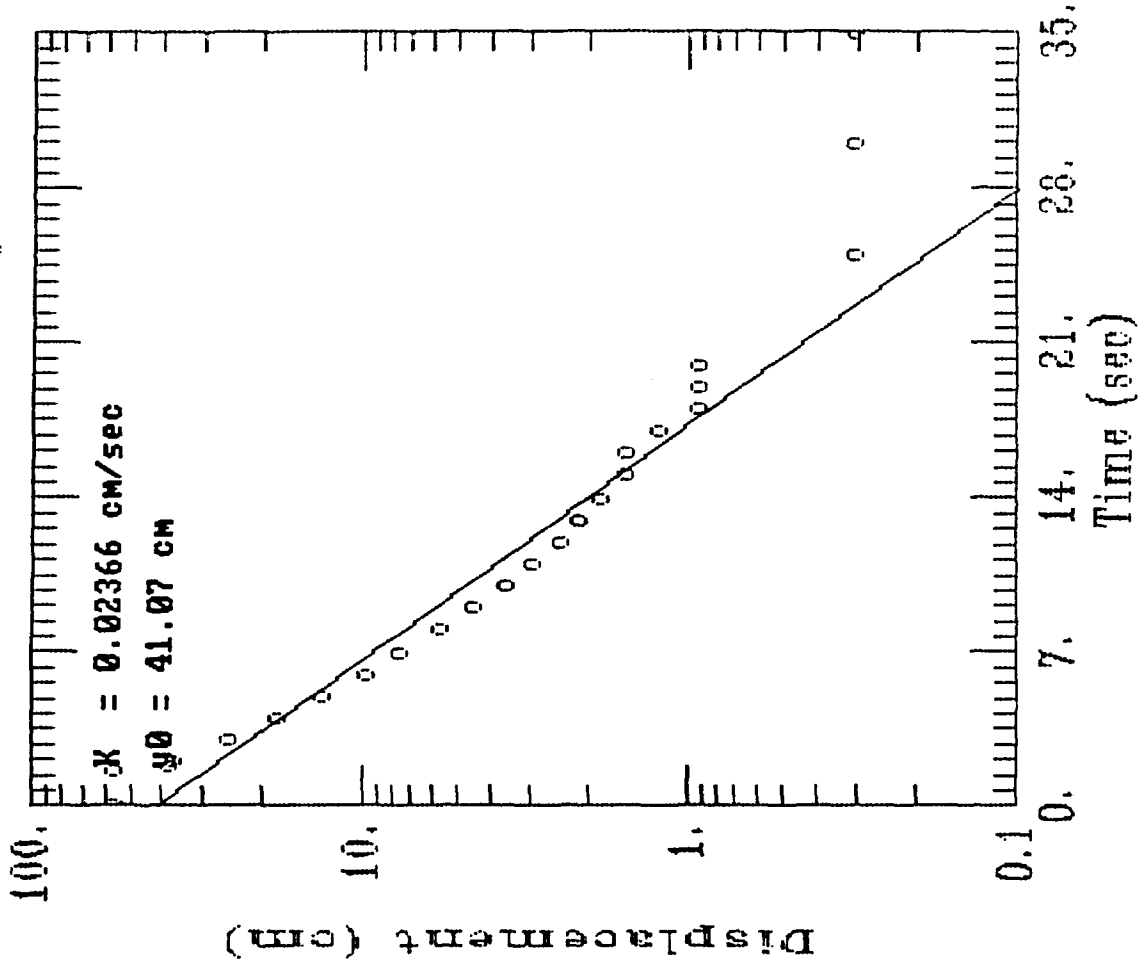
# ELN-91-07A TEST #2



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# ELN-91-07A TEST #3

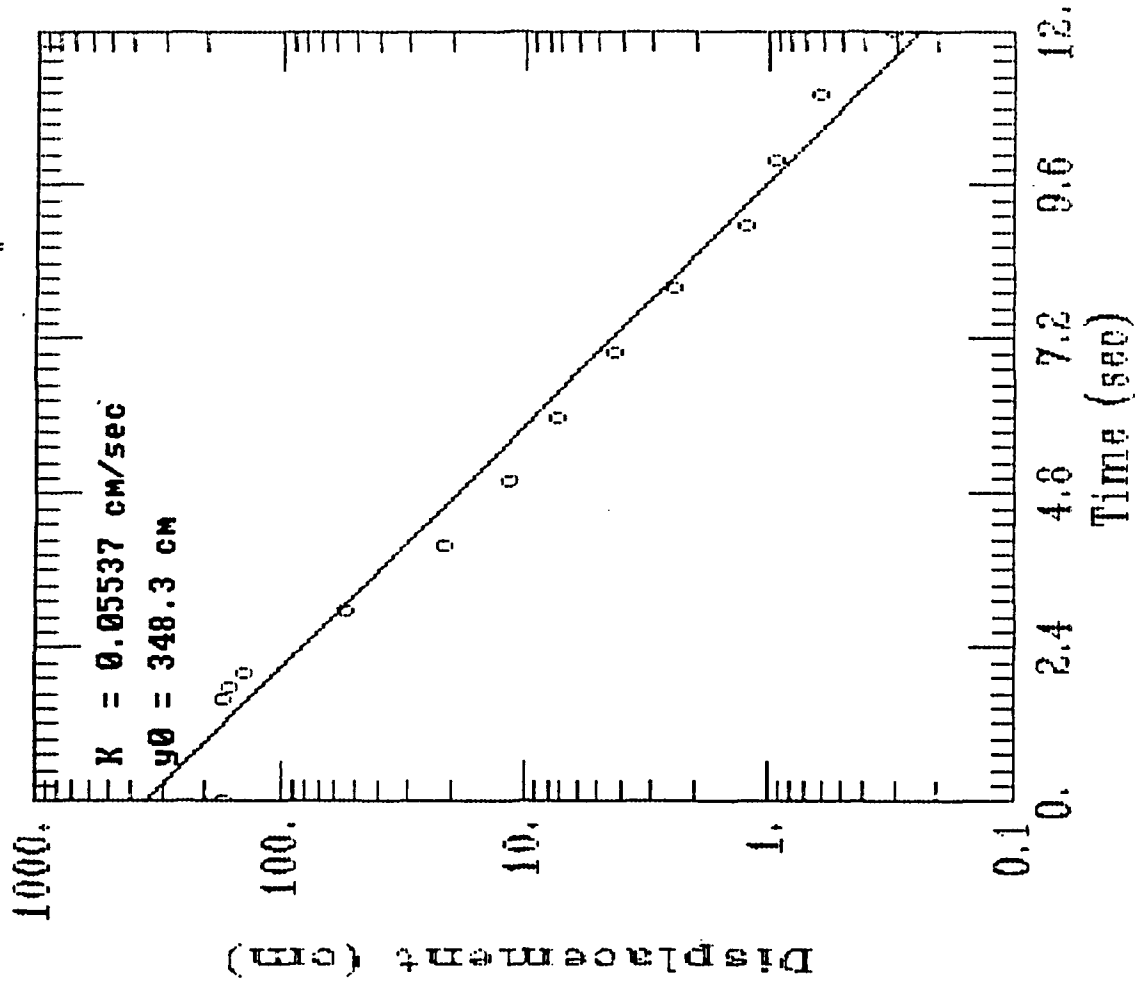


AQTESOLV

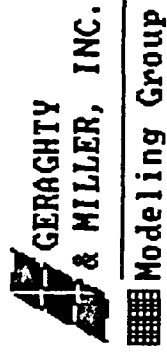
GERAGHTY  
& MILLER, INC.

Modeling Group

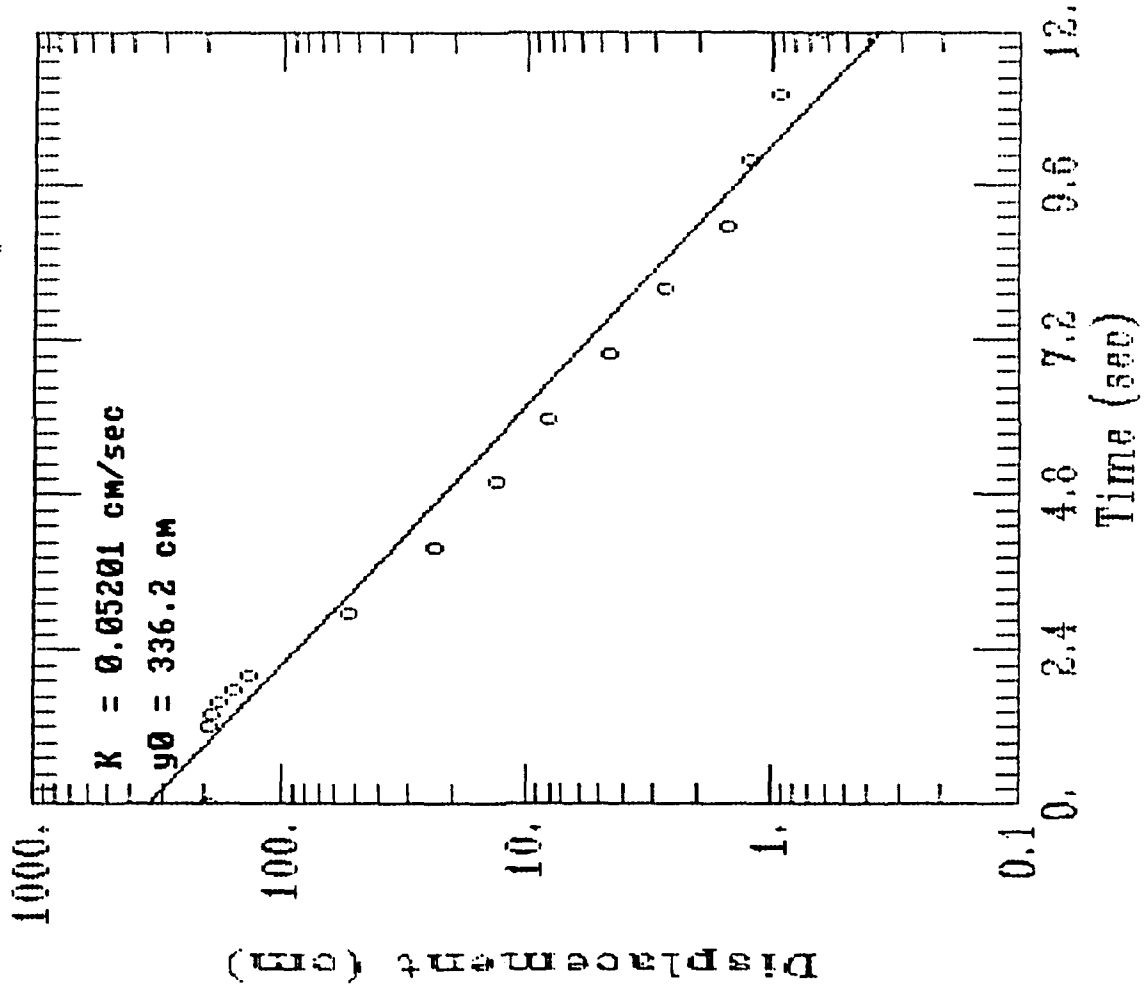
# ELN-91-07B TEST #1



AQTESOLV



# ELN-01-07B TEST #2

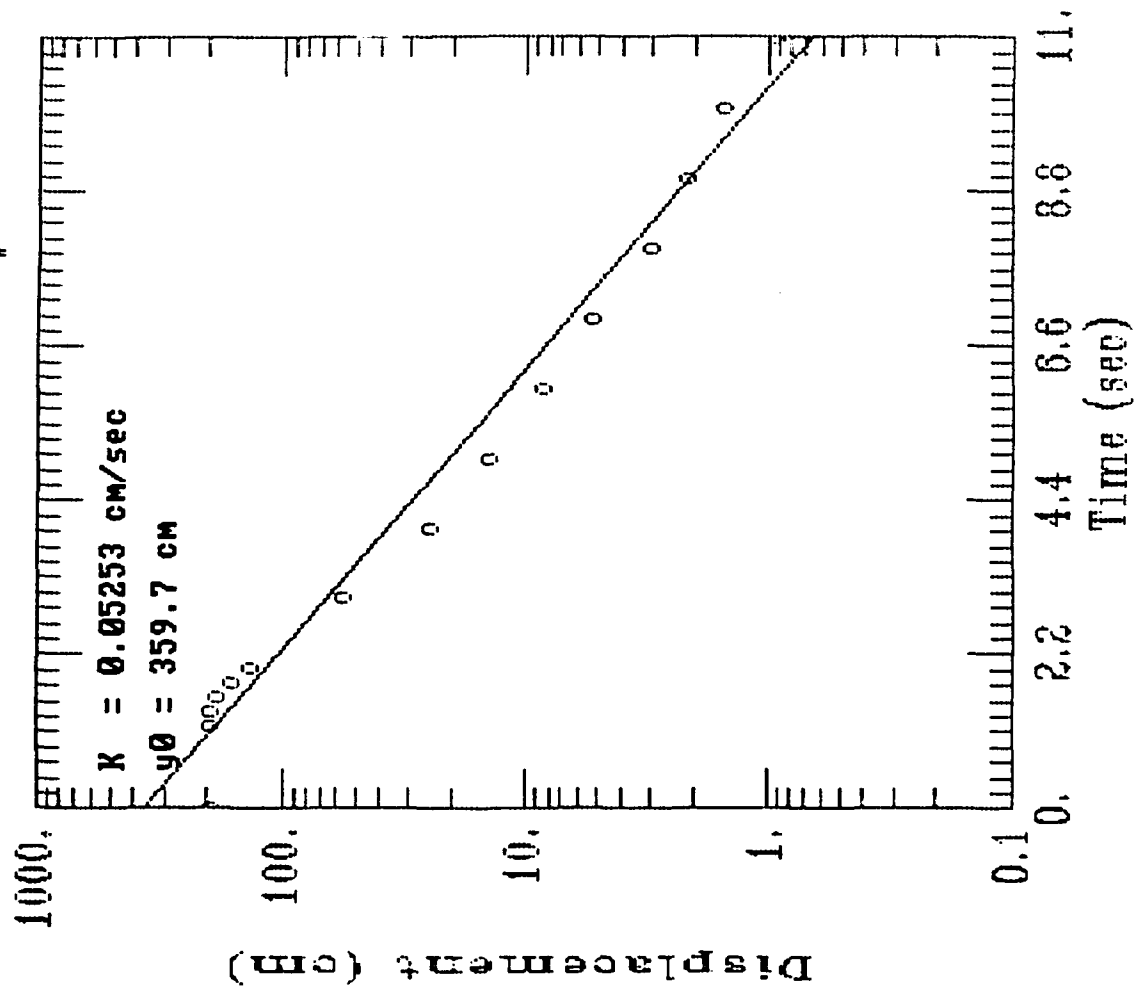


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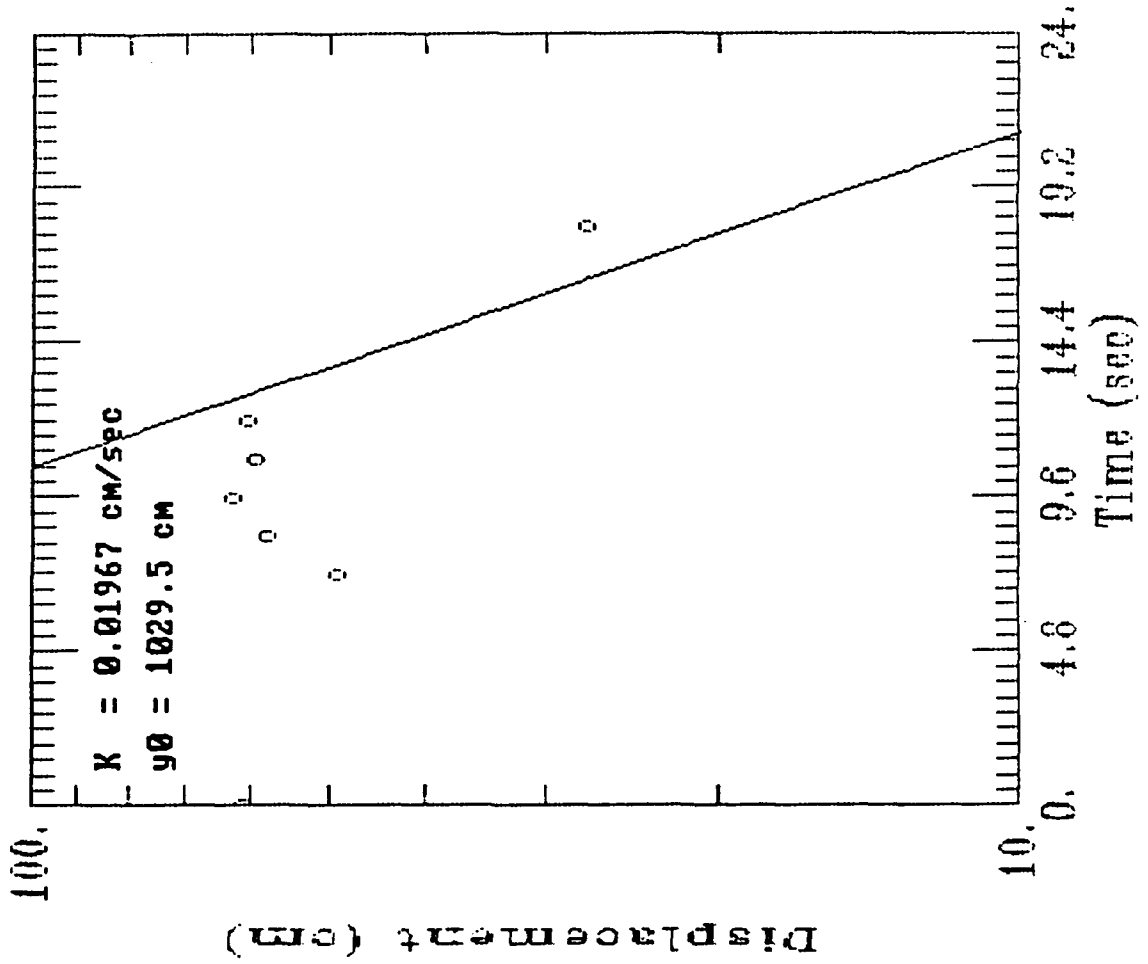
GERAGHTY  
& MILLER, INC.  
Modeling Group



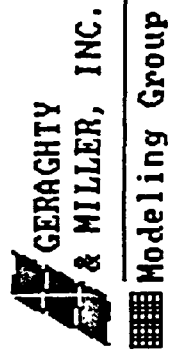
# ELN-91-07B TEST #3



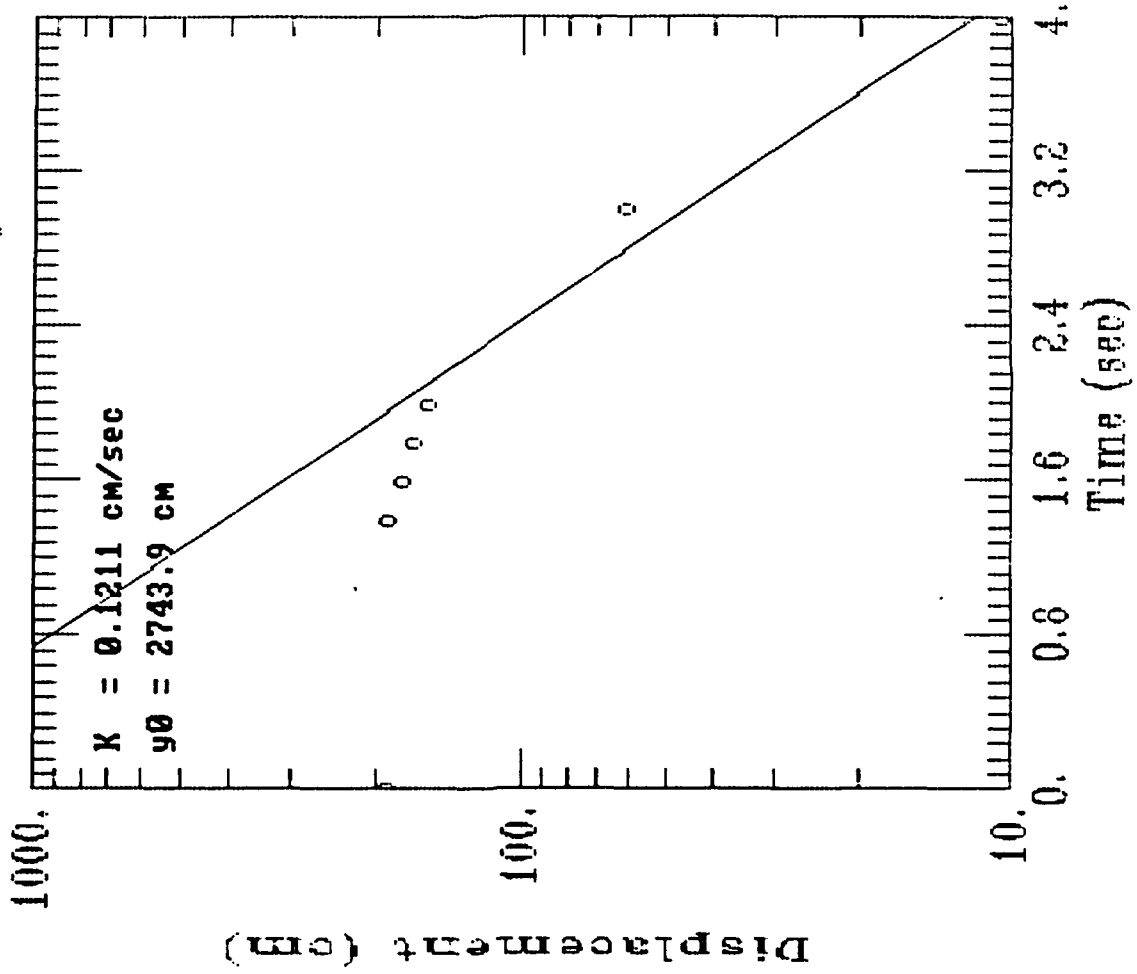
# SWN-01-03B TEST#1



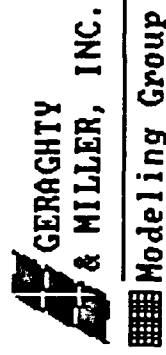
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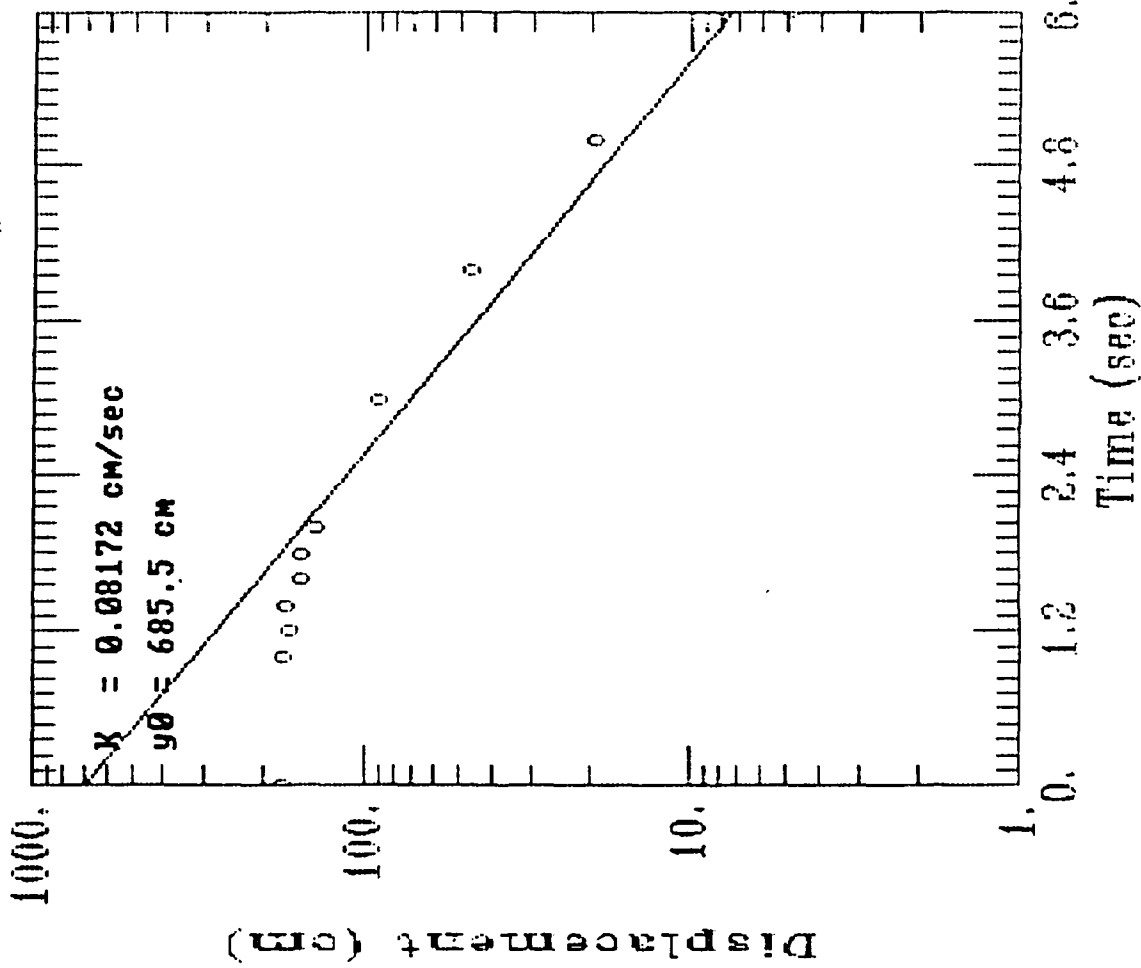
# SWN-01-03B TEST #2



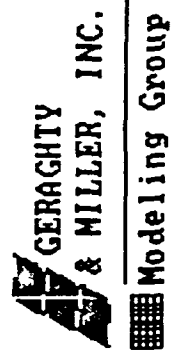
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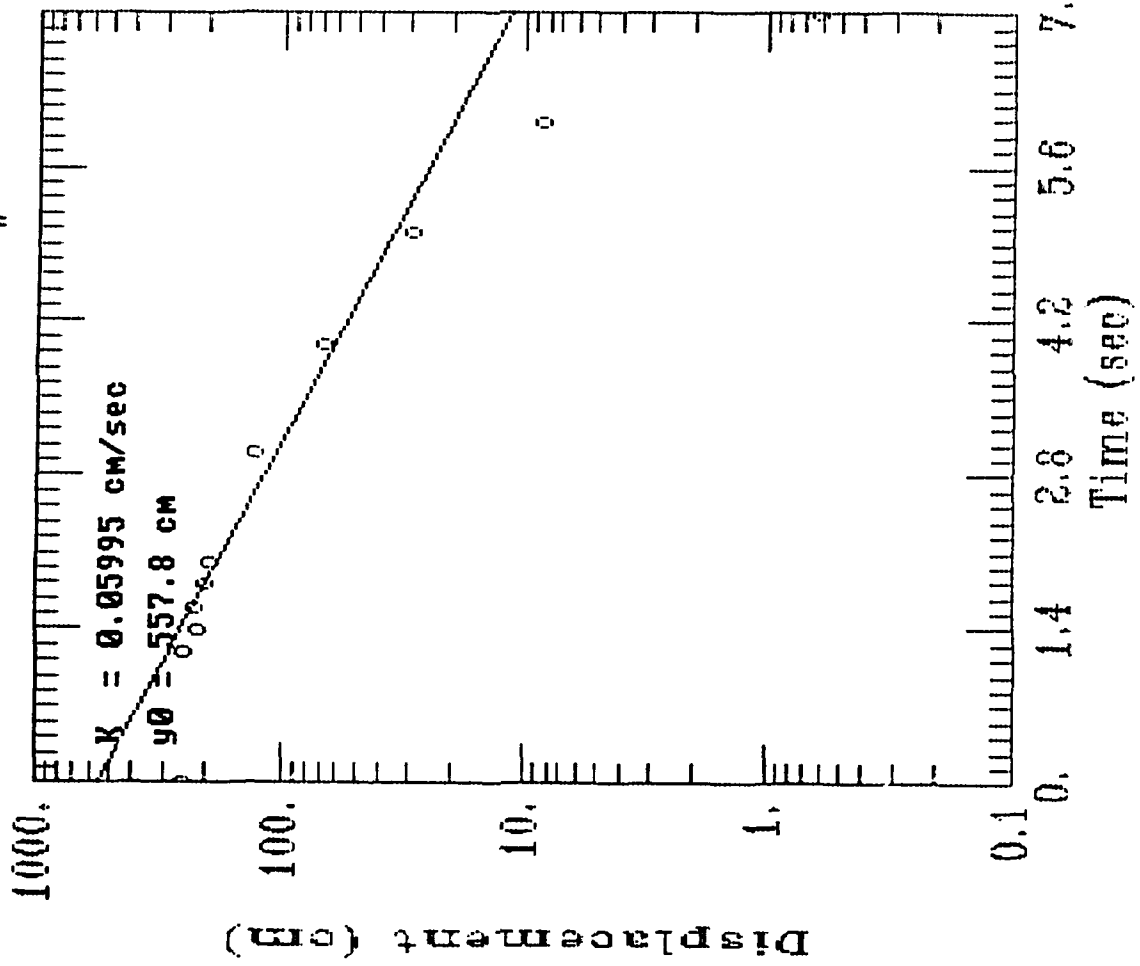
# SWN-91-03C TEST #1



AQTESOLV



# SWN-01-03C TEST #2

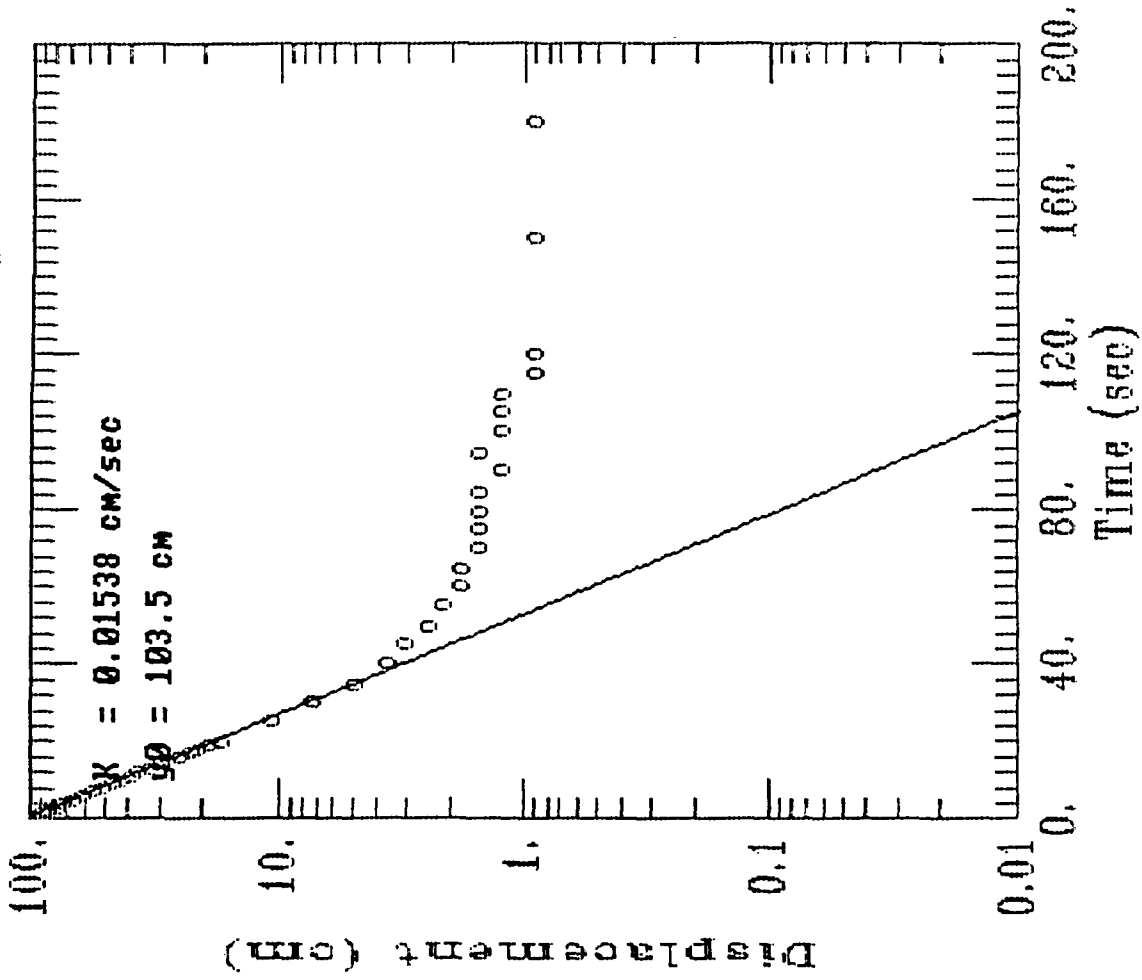


AQTESOLV

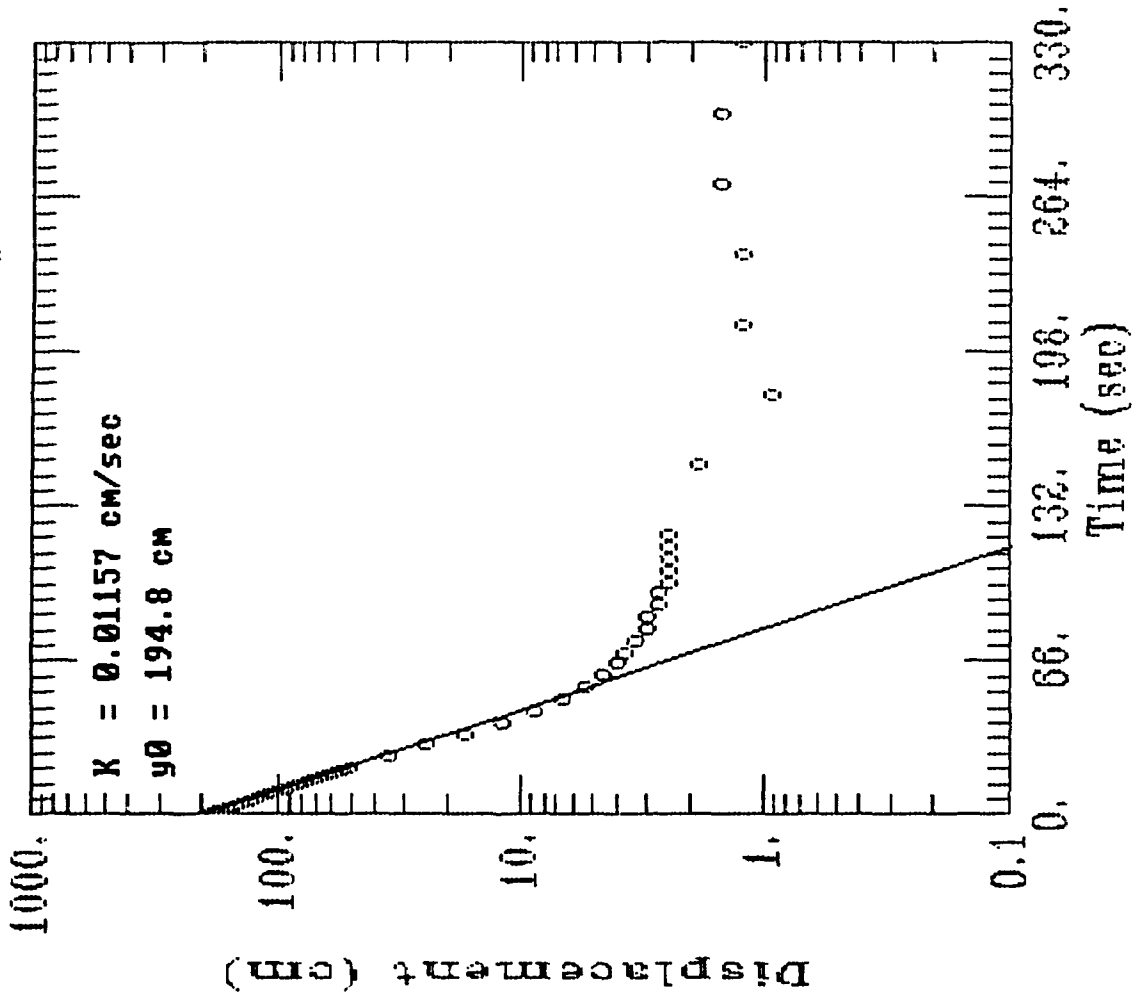
GERAGHTY  
& MILLER, INC.

Modeling Group

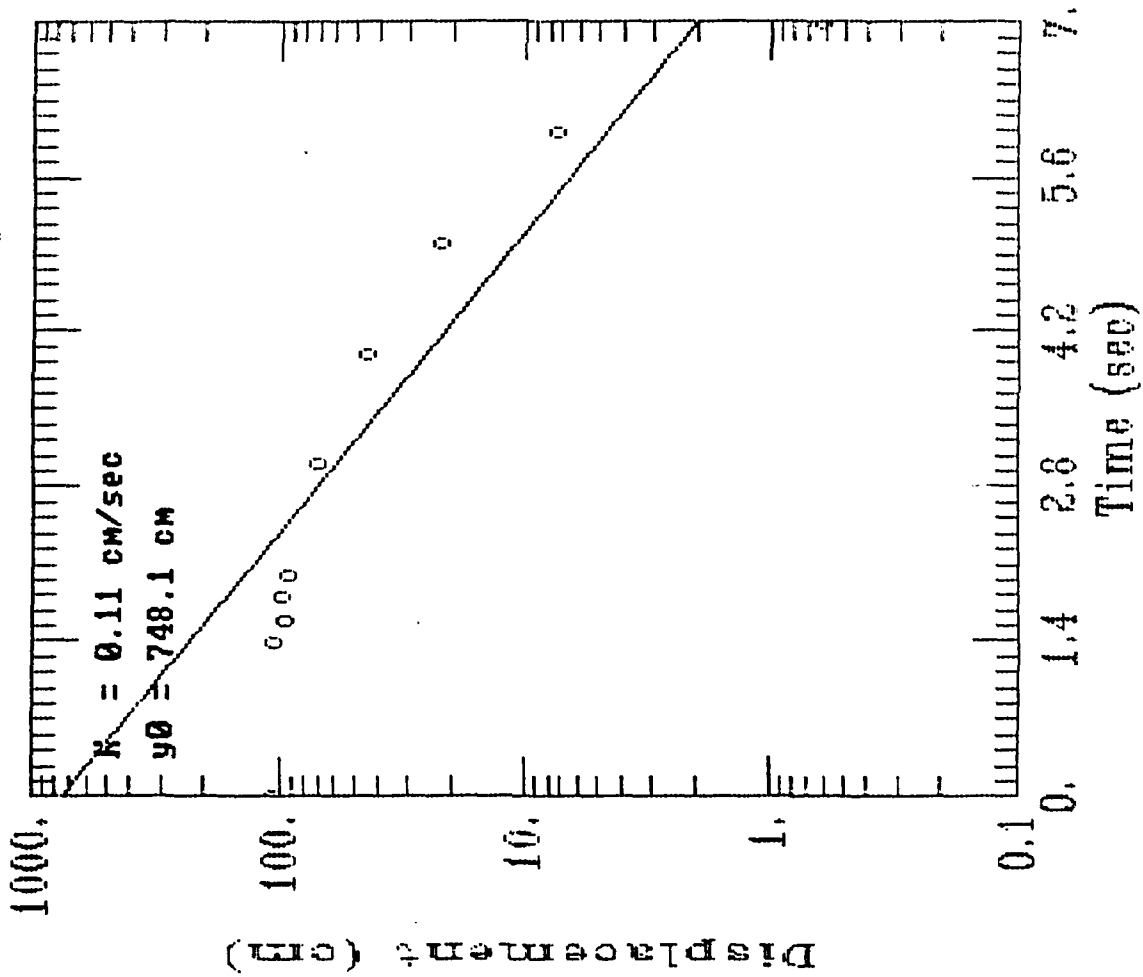
# SWN-01-03E TEST #1



# SWN-91-03E TEST #2

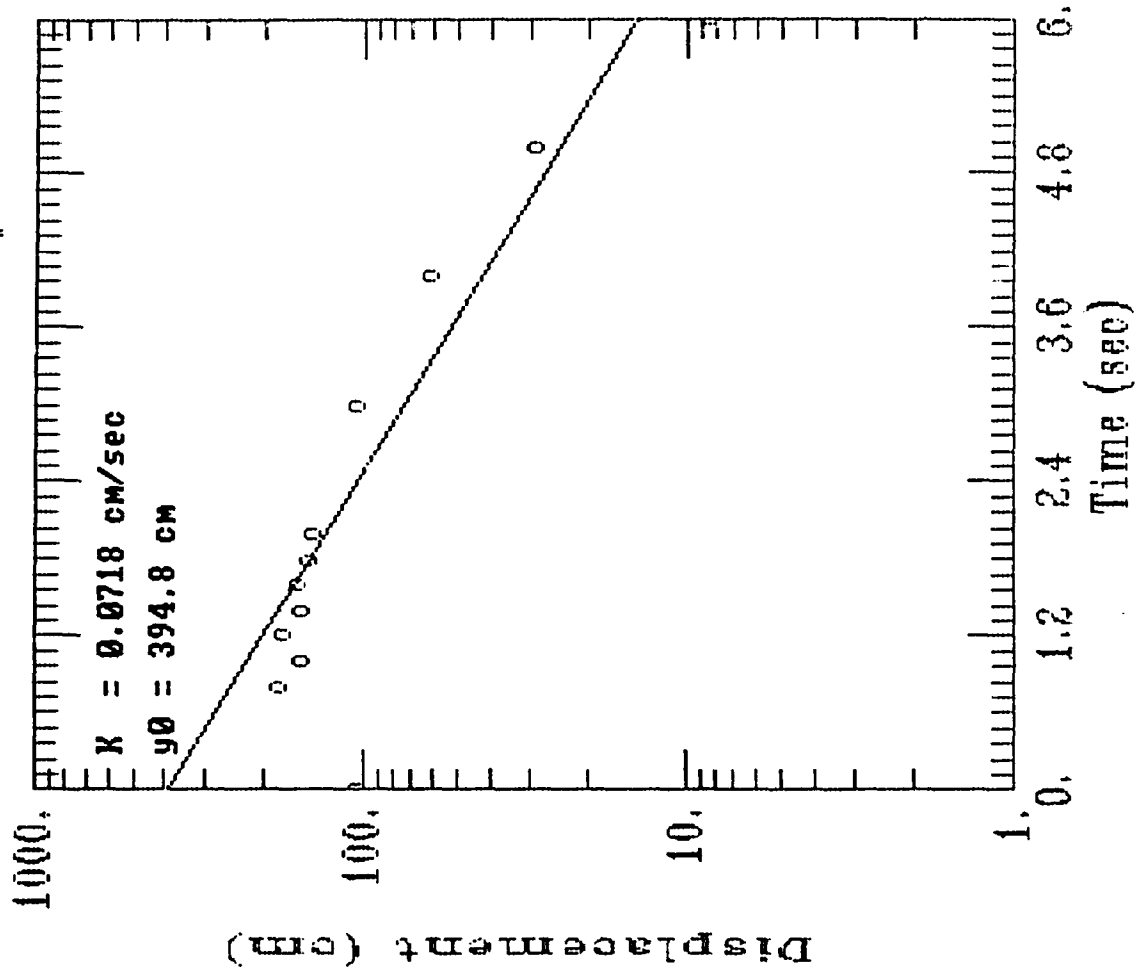


# SWN-91-03D TEST #1

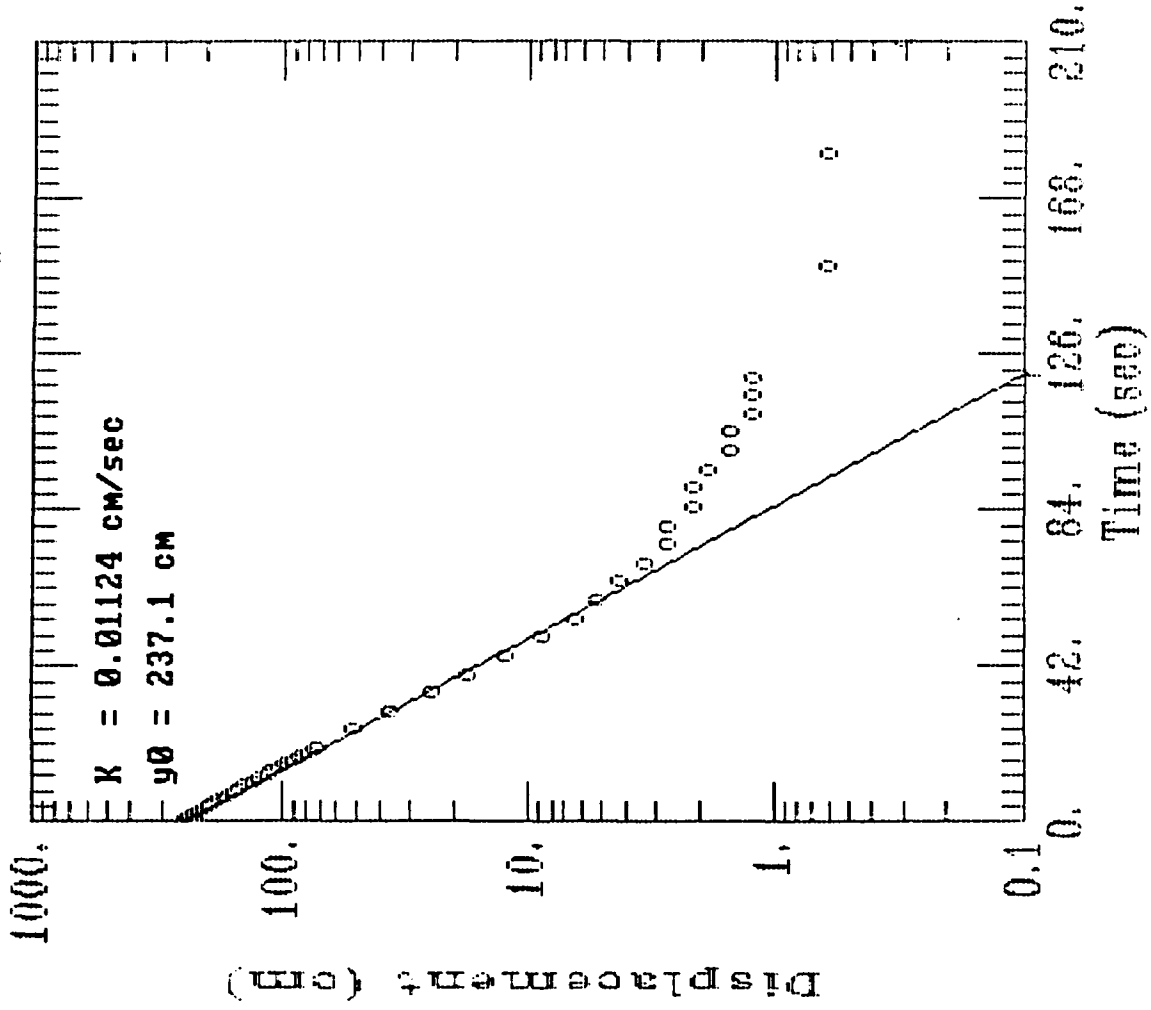




# SWN-91-03D TEST #2



SWN-01-03E TEST #3



AQTESOLV

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**APPENDIX J**  
**AQUIFER TESTING AND MODELING**

- J.1 Aquifer Pumping Test**
- J.2 Regional Groundwater Flow Model**
- J.3 Propellant Burning Ground Groundwater Flowmodel**

**Appendix J.1**  
**Aquifer Pumping Test**

**REMEDIAL INVESTIGATION/FEASIBILITY STUDY  
BADGER ARMY AMMUNITION PLANT**

**DRAFT  
AQUIFER PUMPING TEST REPORT  
DATA ITEM A009**

**CONTRACT DAAA15-91-D-0008  
TASK ORDER 1**

*Prepared for:*

**United States Army  
Toxic and Hazardous Materials Agency  
Aberdeen Proving Ground, Maryland**

*Prepared by:*

**ABB Environmental Services  
Portland, Maine  
Project No. 6853-11**

BADGER ARMY AMMUNITION PLANT  
AQUIFER PUMPING TEST

TABLE OF CONTENTS

Section	Title	Page No.
1.0	SCOPE AND PURPOSE .....	1-1
2.0	BACKGROUND .....	2-1
3.0	PREPARATIONS FOR THE AQUIFER PUMPING TEST .....	3-1
4.0	CONSTANT-DISCHARGE TEST .....	4-1
5.0	BAROMETRIC AND ANTECEDENT TREND EFFECTS ON AQUIFER TEST DATA .....	5-1
6.0	ANALYSIS OF THE AQUIFER TEST DATA .....	6-1
6.1	ANALYSIS OF DRAWDOWN DATA .....	6-1
6.1.1	Boulton Delayed-Yield Analysis .....	6-1
6.1.2	Jacob Drawdown Analysis .....	6-2
6.2	ANALYSIS OF RECOVERY DATA .....	6-5
7.0	INTERPRETATION OF THE AQUIFER TEST ANALYSES .....	7-1

REFERENCES

APPENDICES

APPENDIX A	-	WATER LEVEL DATA FROM MANUAL MEASUREMENTS
APPENDIX B	-	BORING LOGS AND PIEZOMETER/WELL CONSTRUCTION DIAGRAMS
APPENDIX C	-	BAROMETRIC PRESSURE DATA
APPENDIX D	-	ANTECEDENT WATER LEVEL DATA
APPENDIX E	-	RAW AND ADJUSTED DRAWDOWN DATA
APPENDIX F	-	RAW AND ADJUSTED RECOVERY DATA

BADGER ARMY AMMUNITION PLANT  
AQUIFER PUMPING TEST

TABLE OF CONTENTS  
(continued)

<u>Section</u>	<u>Title</u>	<u>Page No.</u>
APPENDIX G -	BOULTON DELAYED-YIELD METHOD ANALYSES	
APPENDIX H -	JACOB METHOD ANALYSES	
APPENDIX I -	RESIDUAL DRAWDOWN ANALYSES	

BADGER ARMY AMMUNITION PLANT  
AQUIFER PUMPING TEST

LIST OF FIGURES

Figure	Title	Page No.
1-1	Site Location Map . . . . .	1-2
1-2	Location of Extraction Wells, Monitoring Wells, and Piezometers . . . . .	1-3
3-1	Geologic Cross-Section A-A' . . . . .	3-5
3-2	Pre-Test Water Table Contour Map . . . . .	3-6
4-1	Drawdown Achieved During Test Period . . . . .	4-2
5-1	Comparison of Barometric Data . . . . .	5-2
5-2	Piezometer and Well Hydrographs . . . . .	5-3
6-1	Boulton Delayed-Yield Type Curves . . . . .	6-3
6-2	Piezometer PBP-91-01C, Boulton Delayed-Yield Analysis Example . . . . .	6-4
6-3	Piezometer PBP-91-01C, Jacob Method Analysis Example . . . . .	6-6
6-4	Piezometer PBP-91-02C, Residual Drawdown Analysis Example . . . . .	6-8
7-1	Example of Correlation Between Flow Rate and Drawdown . . . . .	7-2



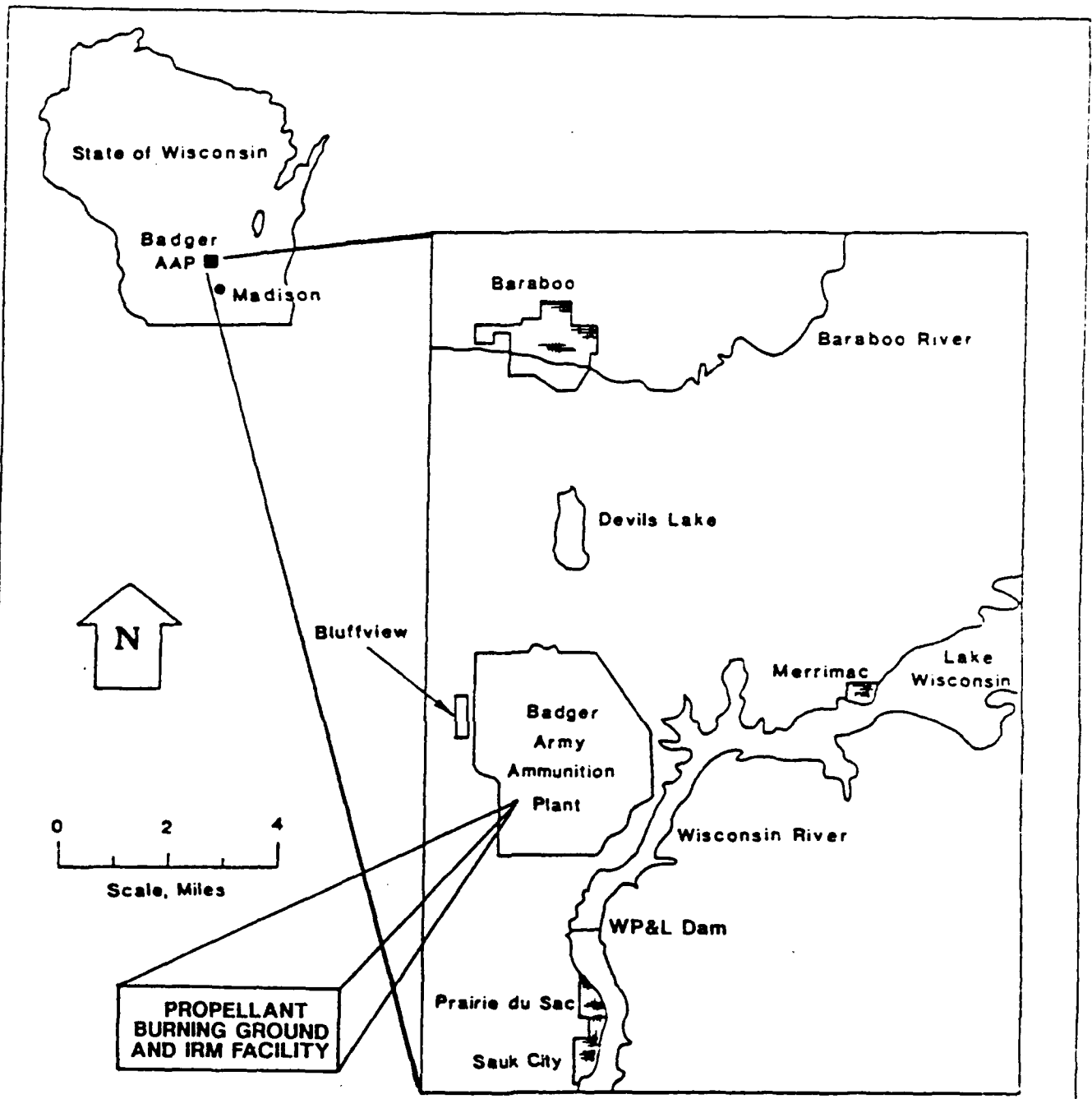
BADGER ARMY AMMUNITION PLANT  
AQUIFER PUMPING TEST

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page No.</u>
3-1	Chronological Summary of Aquifer Pumping Test .....	3-2
3-2	Location and Construction Information for Observation Wells/Piezometers .....	3-4
4-1	BCW-3 Flow Rate Measurements .....	4-3
5-1	Barometric Efficiency Calculation .....	5-4
7-1	Summary of Calculated Aquifer Hydraulic Parameters .....	7-3

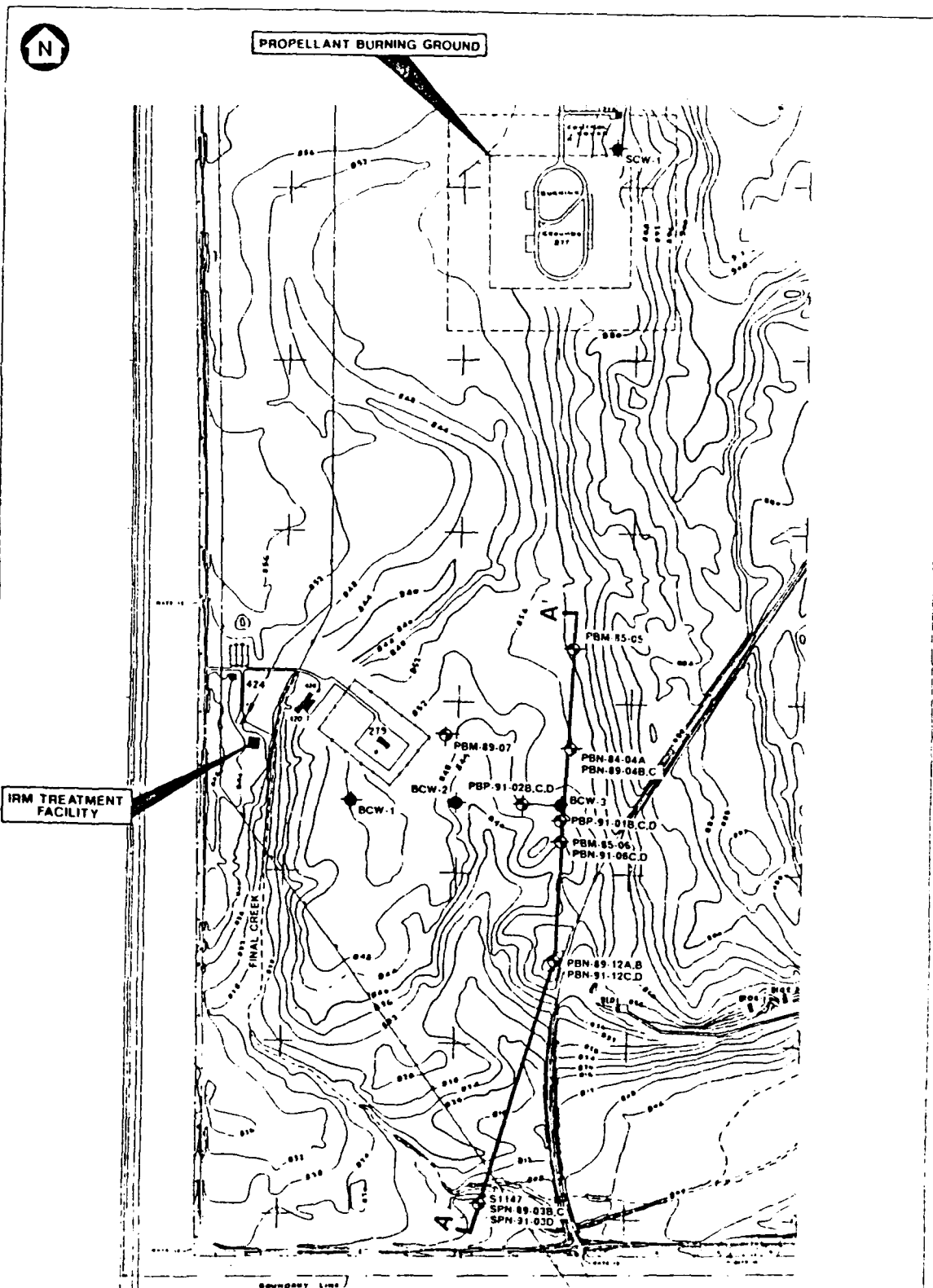
## 1.0 SCOPE AND PURPOSE

In December 1991, an aquifer pumping test was performed by ABB Environmental Services, Inc. (ABB-ES) for the United States Army Toxic and Hazardous Materials Agency (USATHAMA) at the Badger Army Ammunition Plant (BAAP) in Baraboo, WI. The test was performed at the Interim Remedial Measure (IRM) extraction well BCW-3 in the southern area of the Propellant Burning Ground (Figures 1-1 and 1-2). The purpose of the test was to evaluate the hydraulic properties of the sand and gravel aquifer beneath BAAP, and the following report provides a description of the aquifer test and data analyses to quantify aquifer hydraulic properties. These tasks were conducted to meet the requirements of the Wisconsin Department of Natural Resources (WDNR) in the March 19, 1992 modification of the September 14, 1987 In-Field Conditions Report Approval for BAAP. The water quality in the vicinity of the IRM and the capture zone of the IRM extraction wells will be evaluated in the BAAP Remedial Investigation (RI) Report (Fall, 1992).



SOURCE: MODIFIED FROM FIGURE 2 1. TSAI ET AL. 1988.

**FIGURE 1-1  
SITE LOCATION MAP  
BADGER ARMY AMMUNITION PLANT**



**LEGEND**

--- GROUND SURFACE ELEVATION CONTOUR (FEET,MSL)

BCW 3 ● EXTRACTION WELL CURRENTLY IN USE

PBN-91-06C.D ● PIEZOMETER OR MONITORING WELL

PBP-91-01B.C.D ●

A— A' TRANSECT OF GEOLOGIC CROSS-SECTION (SEE FIGURE 3)

APPROX SCALE IN FEET

0 545 1090

**FIGURE 1-2**  
**LOCATION OF EXTRACTION WELLS,**  
**MONITORING WELLS AND PIEZOMETERS,**  
**AQUIFER PUMPING TEST**  
**BADGER ARMY AMMUNITION PLANT**  
 ABB Environmental Services, Inc.

## 2.0 BACKGROUND

The IRM facility consists of a groundwater extraction and treatment facility for intercepting and stripping contaminated groundwater of volatile organic compounds (VOCs). In order to perform the aquifer test it was necessary to temporarily suspend pumping at the three extraction wells BCW-1, BCW-2, and BCW-3 associated with the IRM facility south of the Propellant Burning Ground to allow water levels to recover to static conditions (see Figure 1-2). It was not necessary to suspend pumping at extraction well SCW-1 in the Propellant Burning Ground, due to its distance from the test location (approximately 4,000 ft.).

On October 30, 1991 approval was granted by the WDNR to suspend pumping activities of wells BCW-1, BCW-2, and BCW-3 for the purpose of performing the aquifer test. The proposal for this aquifer test (presented in the ABB-ES Final Sampling Design Plan, October, 1991) was approved by the U.S. Environmental Protection Agency on November 22, 1991.

### 3.0 PREPARATIONS FOR THE AQUIFER PUMPING TEST

Table 3-1 provides a chronological summary of the events during the preparation for, and the performance of, the aquifer test. Piezometers PBP-91-01B,C,D and PBP-91-02B,C,D were installed by Layne Environmental of Tempe, Arizona under subcontract to ABB-ES in October 1991 in preparation for the aquifer test. Extraction wells BCW-1, BCW-2, and BCW-3 were shut down on December 5, 1991 to allow water level recovery to static conditions. On December 7, 1991, the 100 gallon per minute (gpm) pump was removed from BCW-3 and replaced by a 250 gpm pump. An increased pumping rate was deemed necessary to increase the stress to the aquifer, thereby enabling a better assessment of hydraulic characteristics of the aquifer.

An in-line, totalizing flow meter (manufactured by McCrometer of Hemet, California) was installed in the BCW-3 discharge line near the wellhead to provide a means of accurately measuring the pumping discharge (flow) rate. Flow meters available in the IRM treatment facility building were used as a backup for flow rate measurements. During the aquifer test, water from BCW-3 was piped through the existing collection system to the IRM treatment facility and treated before discharge to the Wisconsin River.

To monitor recovery of water levels after shutdown of the BCW-series wells, and to evaluate antecedent (prior to the start of pumping at BCW-3) water level trends, pressure transducers were installed in piezometers and monitoring wells near BCW-3 prior to the start of the test (Table 3-1). Before installation of these pressure transducers, water level measurements were taken from each well to an accuracy of one hundredth of a foot with a SOLINST™ electronic water level meter. The transducers were connected to Hermit™ data logging instruments for automated recording of water levels every hour. Piezometers and wells monitored by the data loggers were PBP-91-01B,C,D, PBP-91-02B,C,D, PBN-91-06C,D, and BCW-3 (Figure 1-2).

Water levels in monitoring well S1123, located to the northwest of the Propellant Burning Ground, were also monitored with a pressure transducer to evaluate regional water table fluctuations before, during, and after the constant-discharge test. In addition, manual water level measurements were taken at the following wells to assist in evaluating the cone of depression caused by the pumping test: PBN-85-04A, PBN-89-04B,C, PBM-85-05, PBM-85-06, PBM-89-07, PBN-89-12A,B, and

**TABLE 3-1  
CHRONOLOGICAL SUMMARY OF AQUIFER PUMPING TEST**

**AQUIFER PUMPING TEST  
BADGER ARMY AMMUNITION PLANT**

DATE	DESCRIPTION OF EVENT
10/12/91 - 10/15/91	- Piezometers PBP-91-01B,C,D and PBP-91-02B,C,D installed in preparation for the aquifer test.
12/5/91	- Antecedent trend monitoring started in PBP-91-01B,C,D and PBP-91-02B,C,D. - Monitoring of background water level fluctuations in S1123 begins. - Extraction wells BCW-1,2,3 shut down. - BCW-3 discharge line excavated by the Olin Corporation.
12/7/91	- 100 gpm pump pulled from BCW-3 and replaced by a 250 gpm pump. - Antecedent trend monitoring begins in PBN-91-06C,D.
12/9/91	- Antecedent trend monitoring begins in BCW-3.
12/10/91	- In-line flow meter installed in discharge line near BCW-3 wellhead. - 250 gpm pump in BCW-3 successfully tested.
12/11/91	- Constant-discharge test begins at 1600 hours.
12/12/91	- Constant-discharge test ends at 1630 hours, recovery begins.
12/13/91	- Monitoring of water levels for the recovery phase is terminated.
12/14/91	- Monitoring of water level at S1123 is terminated.
12/18/91	- 250 gpm pump removed from BCW-3. - Original (100 gpm) pump is reinstalled in BCW-3. - Flow meter is removed from BCW-3 discharge line and excavation is filled in.
12/19/91	- BCW-1,2,3 and IRM-facility returned to operational status.

**Note:**

Antecedent means prior to the start of pumping at BCW-3.

PBN-91-12C,D (see Appendix A for water level data sheets). The locations of these observation points are illustrated in Figure 1-2. Table 3-2 provides the radial distances of these observation points from BCW-3 and screened intervals of all wells and piezometers.

A north-south cross-section illustrating screened intervals of selected piezometers, monitoring wells, and BCW-3 is presented in Figure 3-1. Well screen designations A, B, C, and D represent progressively deeper installation intervals; that is, a well number without a letter suffix (e.g., PBM-85-05) or a well number with an A suffix (e.g., PBN-85-04A) represents a water table well. The B suffix (e.g., PBP-91-01B) represents an intermediate level well, while the C and D suffixes represent progressively deeper well-screen intervals. In general, the A and C series wells are screened in sand, and the B and D series wells are screened in sand and gravel. Boring logs and piezometer/well construction diagrams are presented as Appendix B. Groundwater flow direction in Figure 3-1 is from north to south. Figure 3-2 presents a pre-test water table contour plan for water levels measured on December 11, 1991.

In unconfined aquifers, such as the one underlying BAAP, air entrapped in pores below the water table is affected by changes in barometric pressure, resulting in changes in the water level (Todd, 1980). The relationship is inverse: decreases in barometric pressure produce increases in water levels, and conversely. To assess the influence of barometric pressure changes on water levels in the aquifer, a barometric probe in conjunction with a Hermit™ data logger was utilized to record barometric pressure every two hours. These measurements were supplemented with data obtained from the National Weather Service (NWS) in Madison, WI (Appendix C).



**TABLE 3-2  
LOCATION AND CONSTRUCTION INFORMATION FOR OBSERVATION WELLS/PIEZOMETERS**

**AQUIFER PUMPING TEST  
BADGER ARMY AMMUNITION PLANT**

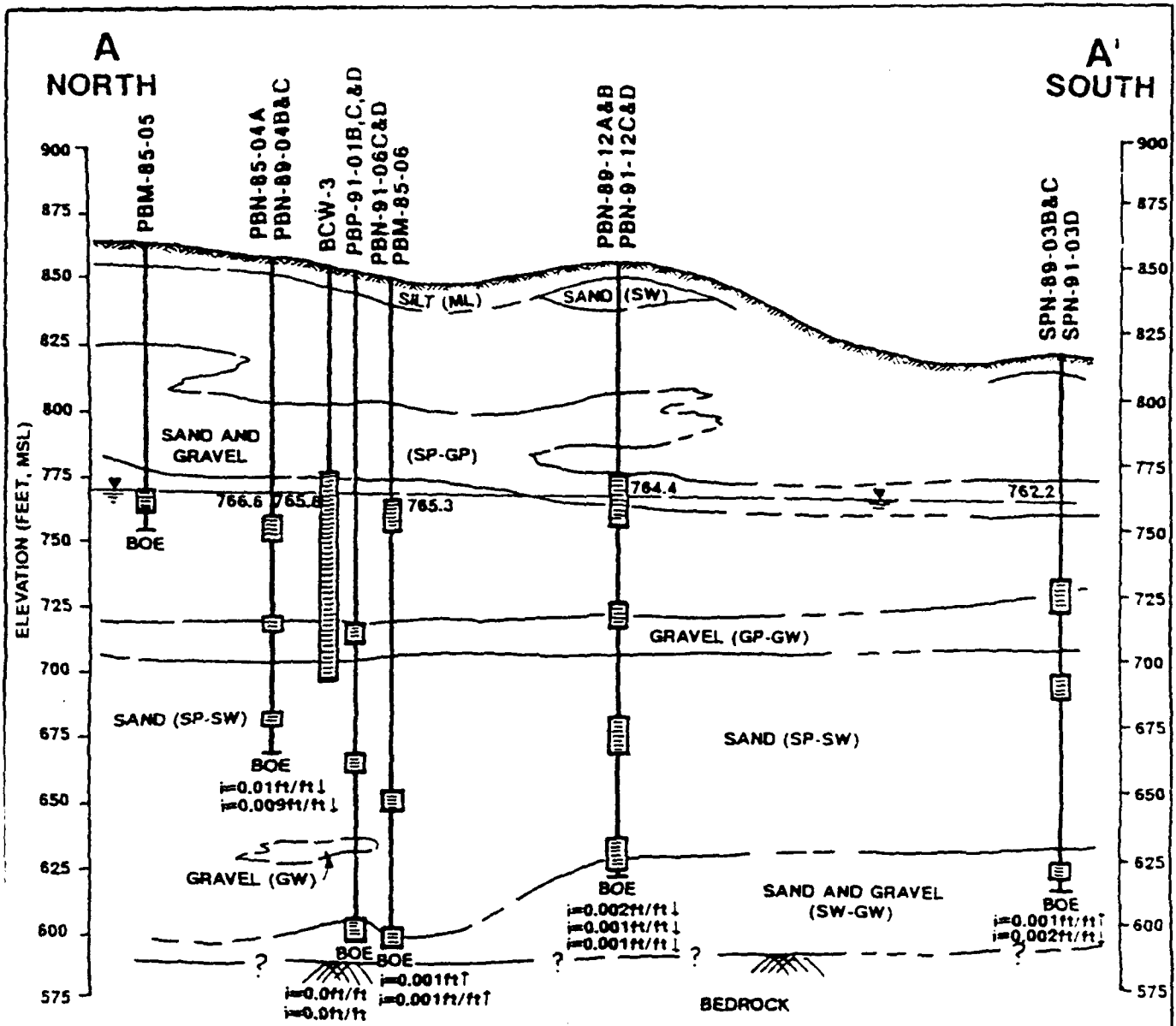
<b>WELL/PIEZOMETER</b>	<b>RADIAL DISTANCE AND DIRECTION FROM PUMPING WELL BCW-3 (FEET)</b>	<b>SCREENED INTERVAL (FEET ABOVE MSL)</b>	<b>SCREEN LENGTH (FEET)</b>
PBP-91-01B*	75 South	704 - 714	10
PBP-91-01C*	75 South	658 - 668	10
PBP-91-01D*	75 South	596 - 606	10
PBP-91-02B*	219 West	707 - 717	10
PBP-91-02C*	219 West	657 - 667	10
PBP-91-02D*	219 West	596 - 606	10
PBN-91-06C*	199 South	645 - 655	10
PBN-91-06D*	197 South	595 - 605	10
PBM-85-06	260 South	767 - 776	10
PBN-85-04A	~340 North	747 - 756	9
PBN-89-04B	~340 North	713 - 718	5
PBN-89-04C	~340 North	677 - 682	5
PBM-85-05	~1180 North	756 - 765	9
PBM-89-07	~710 Northwest	754 - 764	10
PBN-89-12A	~900 South	752 - 772	20
PBN-89-12B	~900 South	715 - 720	5
PBN-91-12C	~900 South	669 - 679	10
PBN-91-12D	~900 South	620 - 630	10
BCW-3*	0	690 - 770	80

**Notes:**

Radial distances for PBP-91-01B,C,D, PBP-91-02B,C,D, PBN-91-06C,D, and PBM-85-06 were measured in the field. Distances to other wells have been estimated from map coordinates.

MSL = mean sea level

\* = Denotes wells/piezometers in which transducers were placed for automated recording of water levels



**LEGEND**

- DBN-89-04A,B&C WELL DESIGNATION, SUFFIXES REFER TO WATER TABLE WELL (A) AND PIEZOMETER (B&C)
- GROUND SURFACE
- SAND WITH GRAVEL (SP) SOILS DESCRIPTION AND USCS CLASSIFICATION
- 782.4 WATER TABLE ELEVATION (DECEMBER 15, 1991)
- SCREENED INTERVAL
- BOE BOTTOM OF EXPLORATION
- $i=0.05ft/ft$  GROUNDWATER VERTICAL GRADIENT

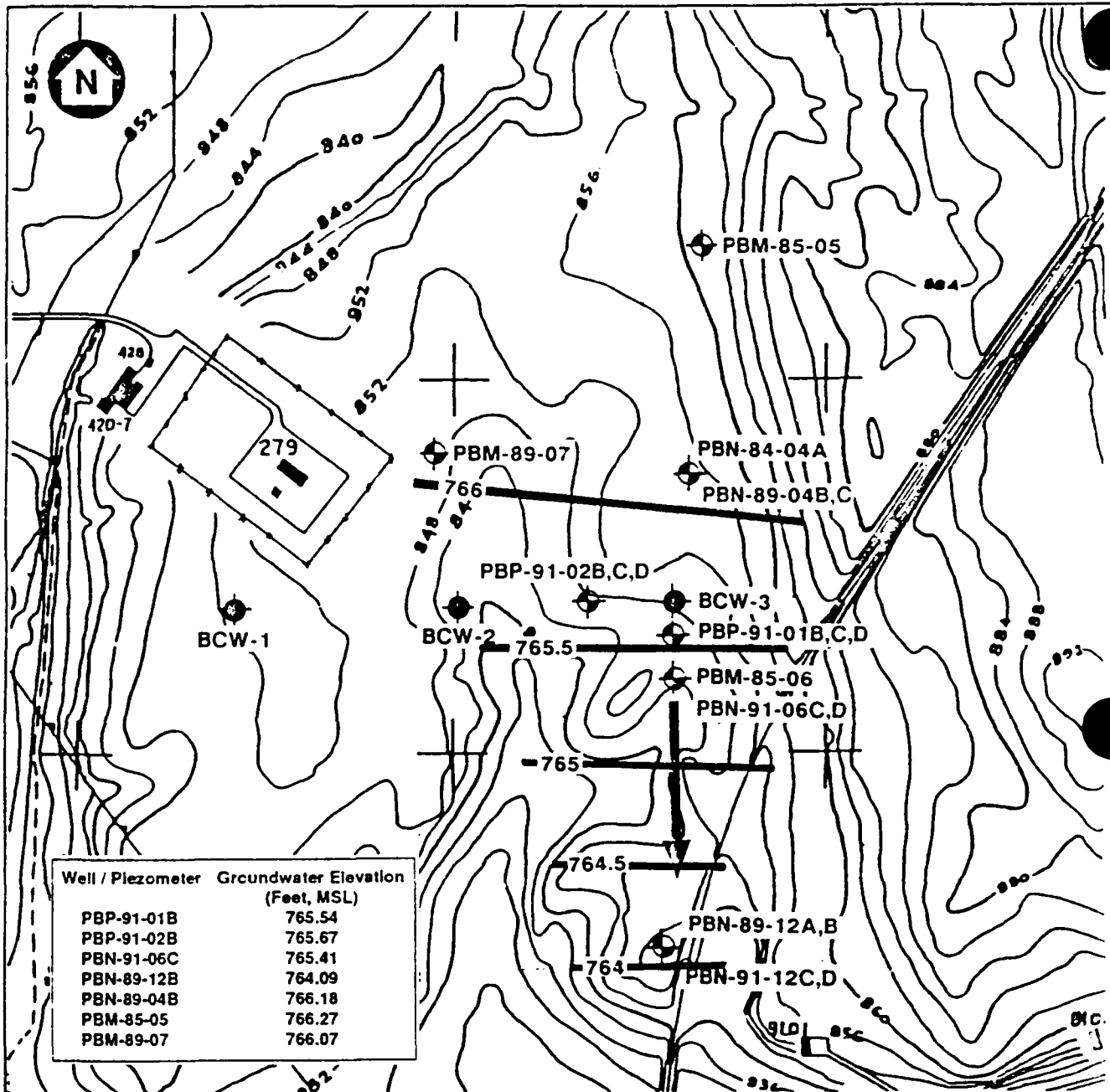


VERTICAL EXAGGERATION 1:10

NOTE: SEE FIGURE 1-2 FOR TRANSECT LOCATION

**FIGURE 3-1  
GEOLOGIC CROSS SECTION A-A'  
PROPELLANT BURNING GROUND/  
SETTLING PONDS AND SPOILS DISPOSAL AREA  
BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc.



**LEGEND**

- EXTRACTION WELL
- PIEZOMETER OR MONITORING WELL
- 765- INTERPRETIVE WATER TABLE CONTOUR (FEET ABOVE MSL)
- GROUNDWATER FLOW DIRECTION



**NOTE:**  
 WATER LEVELS WERE MEASURED ON DECEMBER 11, 1991  
 PRIOR TO THE START OF PUMPING AT BCW-3.

**FIGURE 3-2  
 PRE-TEST WATER TABLE  
 CONTOUR MAP  
 AQUIFER PUMPING TEST  
 BADGER ARMY AMMUNITION PLANT**

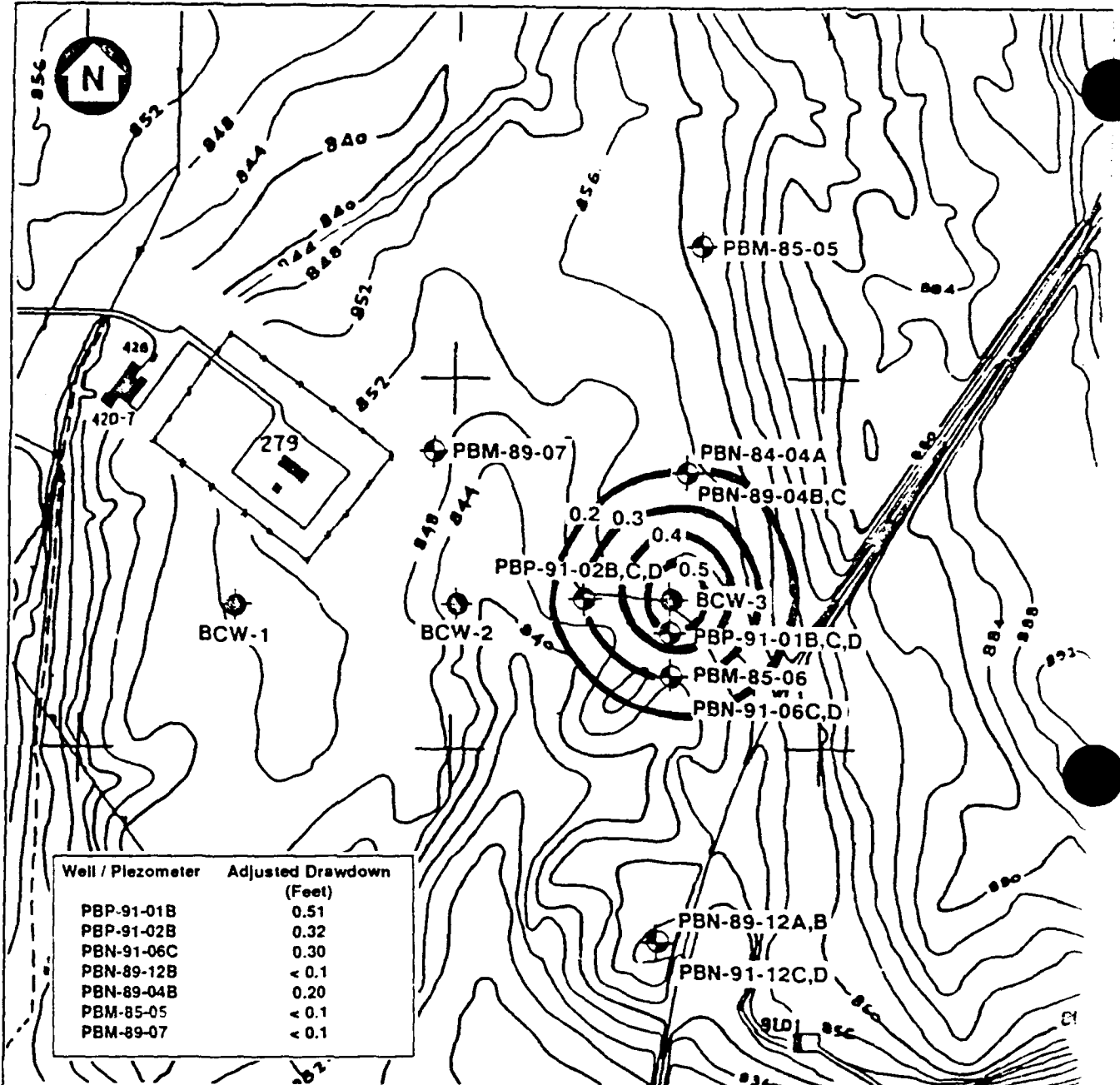
ABB Environmental Services, Inc.

#### 4.0 CONSTANT-DISCHARGE TEST




The constant-discharge test was started on December 11, 1991 at 4:00 PM (1600 hr.). The data logging instruments were programmed to record a high frequency of water-level readings, particularly during the first 100 minutes. Light to moderate rain associated with a low pressure system began falling at approximately 2:50 AM (0250 hr.) on December 12, 1992 and rain continued until approximately 2:00 PM (1400 hr.). By 1630 hours on December 12, 1991 (24.5 hours after the start of pumping at BCW-3), sufficient data had been collected to evaluate the hydraulic properties of the aquifer, and test pumping was terminated. The drawdown at the end of the pumping period is presented in Figure 4-1. The drawdown numbers presented in Figure 4-1 have been corrected for barometric and water level trend influences. The drawdown contours should not be interpreted as representing the capture zone of well BCW-3. Recovery of the aquifer head was monitored for 20.5 hours.

The average flow rate over the duration of the test was 205.3 gpm. Flow rate measurements and calculated averages are presented in Table 4-1. Note that two substantial deviations from the average flow rate occurred at approximately 567 and 819 minutes after the start of pumping. These deviations were short-term and did not impact the overall quality of the data gathered during the test. Water pumped from BCW-3 was piped to and treated by the IRM treatment facility.

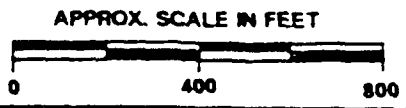
The original 100 gpm pump was replaced and the flowmeter removed from the BCW-3 discharge line on December 18, 1991. Pumping at BCW-1, BCW-2 and BCW-3 was resumed on December 19, 1991.



Well / Piezometer	Adjusted Drawdown (Feet)
PBP-91-01B	0.51
PBP-91-02B	0.32
PBN-91-06C	0.30
PBN-89-12B	< 0.1
PBN-89-04B	0.20
PBM-85-05	< 0.1
PBM-89-07	< 0.1

- LEGEND**
-  EXTRACTION WELL
  -  PIEZOMETER OR MONITORING WELL
  -  0.2) INTERPRETIVE DRAWDOWN CONTOUR (FEET)

NOTE: DRAWDOWNS HAVE BEEN ADJUSTED TO REFLECT BAROMETRIC AND WATER LEVEL TREND INFLUENCES.



**FIGURE 4-1**  
**DRAWDOWN ACHIEVED**  
**DURING TEST PERIOD**  
**AQUIFER PUMPING TEST**  
**BADGER ARMY AMMUNITION PLANT**  
 ABB Environmental Services, Inc.

TABLE 4-1  
BCW-3 FLOW RATE MEASUREMENTS

AQUIFER PUMPING TEST  
BADGER ARMY AMMUNITION PLANT

DATE	TIME	ELAPSED TIME SINCE PUMP ON (MINUTES)	FLOWMETER TOTALIZER READING (GALLONS)	FLOW RATE BETWEEN READINGS (GPM)
12/11/91	16:00:00	0	1526000	
	16:32:00	32	1532500	203.1
	16:47:00	47	1535680	212.0
	17:12:00	72	1540800	204.8
	17:32:46	93	1545100	207.1
	17:47:46	107	1548200	206.7
	19:15:15	195	1566200	205.8
	19:58:00	238	1575000	205.8
	20:49:15	289	1585500	204.9
	21:33:00	333	1594500	205.7
	22:29:00	389	1606000	205.4
	23:39:35	460	1620500	205.4
	12/12/91	00:55:00	535	1635000
01:04:45		545	1637000	205.1
01:26:37		567	1642500	251.5
01:38:50		579	1645000	204.6
02:51:40		652	1660000	205.9
04:06:30		727	1675400	205.8
04:14:30		735	1677075	209.4
05:32:00		812	1693050	206.1
05:39:30		819	1694150	146.7
07:10:00		910	1713175	210.2
07:40:30		941	1719325	201.6
08:55:00		1015	1734225	200.0
09:32:00		1052	1741700	202.0
10:43:00	1123	1756175	203.9	
13:27:25	1287	1790000	205.7	
16:30:00	1470	1827750	206.8	
TIME-WEIGHTED AVERAGE FLOW RATE FOR TEST:				205.3

Note:

Flowmeter readings from McCrometer™ flowmeter installed in BCW-3 discharge line.

---

## 5.0 BAROMETRIC AND ANTECEDENT TREND EFFECTS ON AQUIFER TEST DATA

Prior to analysis of the aquifer test data, the antecedent water level data were examined for influences by external factors that have the potential to cause substantial error in computing hydraulic properties. These factors are water level changes caused by barometric pressure variation and rising or falling water level trends in the aquifer. The unexpected delays in the start-up of the constant-discharge test provided enough time to collect sufficient data from piezometers PBP-91-01B,C,D and PBP-91-02B,C,D to evaluate barometric effects on water levels and the trend of water level fluctuations as a result of regional influences (see Appendix D for antecedent water level data).

Review of the barometric pressure data recorded by the on-site barometric probe indicated malfunctioning of this probe. As a result, the NWS barometric data from Madison, WI, was used in the data reduction and analysis process. Although the data from the barometric probe are considered unusable, the periods of high and low pressure correlate well with those of the NWS data (Figure 5-1), and observed fluctuations in water levels.

Because all water levels in wells and piezometers fluctuated nearly in unison the barometric efficiency of the aquifer was calculated by the method given in Todd (1980) using water level data from PBP-91-01B and barometric data from the NWS in Madison, WI. The calculated barometric efficiency of this aquifer is 0.05 (Table 5-1), which is in the range reported for unconfined aquifers (Todd, 1980). The drawdown and recovery data were then adjusted by converting the change in barometric pressure to an equivalent change in feet of water, multiplying this value by the barometric efficiency, and adding/subtracting this value to/from the measured water level to obtain the adjusted water level. Drawdown and recovery data adjusted for water level trend and barometric effects are included as Appendices E and F.

Review of the hydrographs in Figure 5-2 indicates a regional rise in groundwater level prior to the start of the constant-discharge test. Before an average linear increase in head per unit of time could be calculated, the effect of barometric pressure changes on the aquifer head were removed. Well PBP-91-01B was selected as representative of natural water level fluctuations at the test site. The water levels at the times of a specific barometric pressure (normalized values) were plotted versus time, and a rising water level trend of 0.026 ft/day resulted. This trend was

00000 BAROMETRIC PROBE DATA  
 00000 BAROMETRIC DATA FROM NWS IN MADISON, WI  
 NWS NATIONAL WEATHER SERVICE

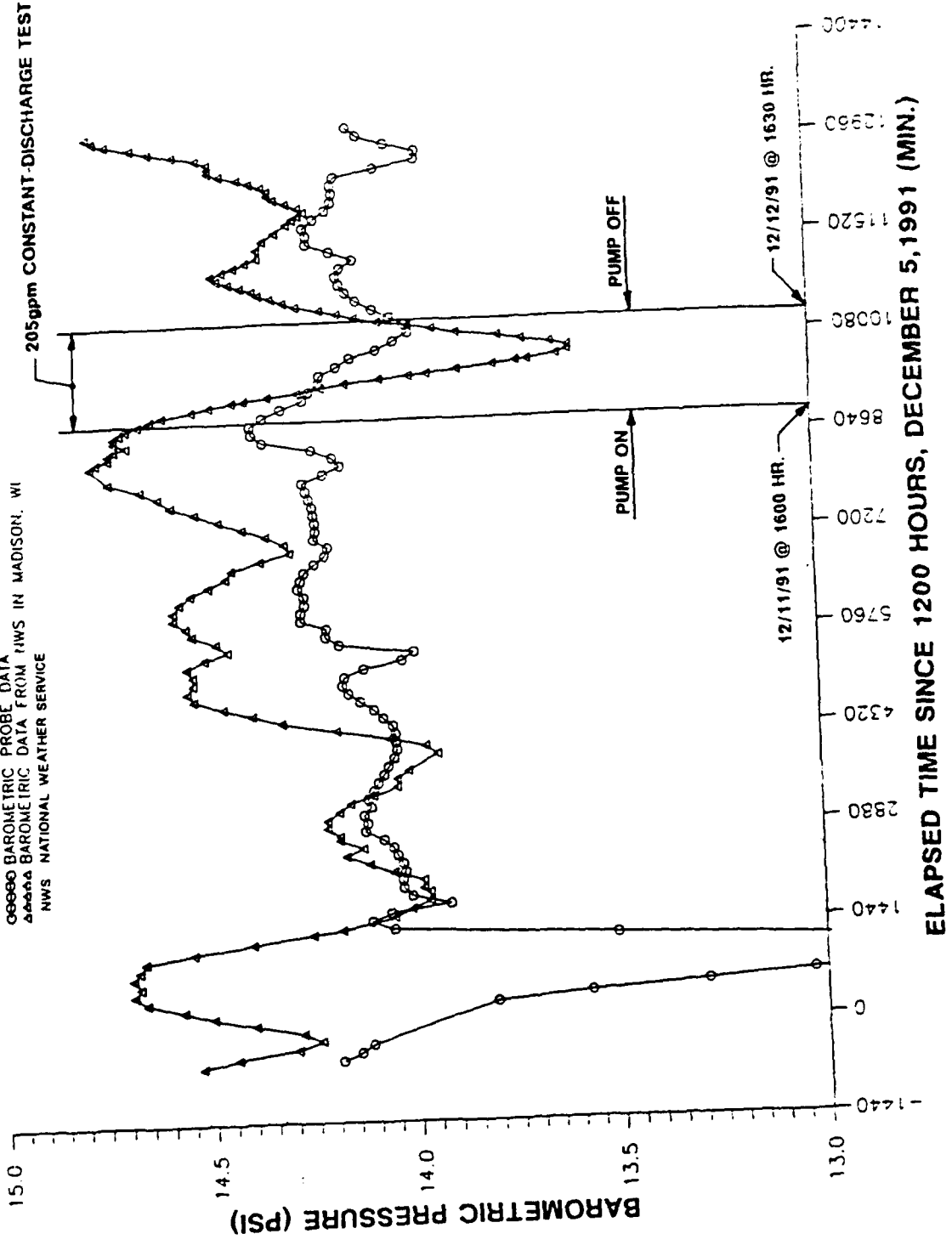
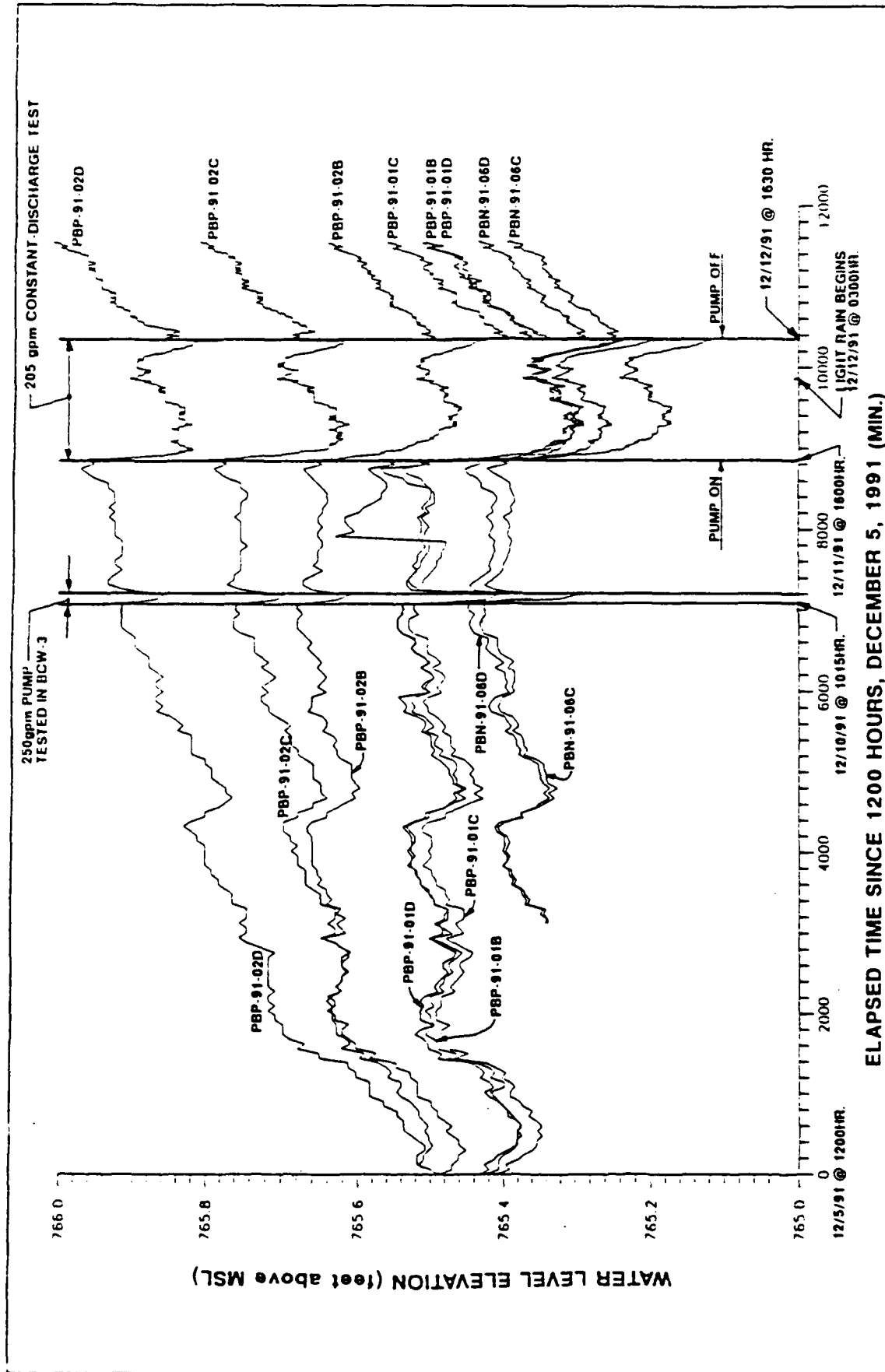


FIGURE 5-1  
 COMPARISON OF BAROMETRIC DATA  
 AQUIFER PUMPING TEST  
 BADGER ARMY AMMUNITION PLANT  
 ABB Environmental Services, Inc.





**FIGURE 5-2**  
**PIEZOMETER AND WELL HYDROGRAPHS**  
**AQUIFER PUMPING TEST**  
**BADGER ARMY AMMUNITION PLANT**  
 ABB Environmental Services, Inc.

TABLE 5-1  
BAROMETRIC EFFICIENCY CALCULATION

AQUIFER PUMPING TEST  
BADGER ARMY AMMUNITION PLANT

ELAPSED TIME SINCE 12/5/91 @1200 hrs (minutes)	ADJUSTED TIME (minutes)	GROUNDWATER ELEVATION (FEET, MSL)	GROUNDWATER ELEVATION CORRECTED FOR INCREASING WATER LEVEL TREND		ATMOSPHERIC PRESSURE		dH/dPa
			(FEET, MSL)	(METERS, MSL)	(PSI)	(N/m <sup>2</sup> )	
711	0	765.39	765.39	233.29	14.69	101318.93	5.51E-06
1894	1183	765.50	765.48	233.32	13.96	96284.02	
3962	3251	765.53	765.47	233.32	13.93	96077.11	
4929	4218	765.47	765.40	233.29	14.535	100249.88	5.35E-06
AVERAGE dH/dPa:							5.43E-06
BAROMETRIC EFFICIENCY							0.05
= rho*g*(avg. dH/dPa):							

NOTES: Data used in calculations is from piezometer PBP-91-01B

H - head

Pa - atmospheric pressure

dH/dPa - change in groundwater elevation per change in atmospheric pressure

rho - density of water

g - gravity

SECTION 5

calculated from water level data between December 9 and December 11, 1991. All drawdown and recovery data were consequently adjusted for this trend (Appendices E and F).

## 6.0 ANALYSIS OF THE AQUIFER TEST DATA

The groundwater flow system beneath BAAP is unconfined, and receives recharge from direct infiltration of precipitation. The depth to water from ground surface in the vicinity of BCW-3 is approximately 85 feet, and the saturated thickness of the aquifer is approximately 175 feet (see Figure 3-1). The following sections discuss the methods used in the analysis of the drawdown and recovery data to obtain estimates of the hydraulic parameters (e.g., transmissivity and specific yield) of the aquifer.

### 6.1 ANALYSIS OF DRAWDOWN DATA

The following subsections discuss the methods of Boulton (1963) and Jacob (1946) used in the analysis of the drawdown data. Raw and adjusted (for barometric and trend effects) data are included as Appendix E.

#### 6.1.1 Boulton Delayed-Yield Analysis

Drawdown of the aquifer test was analyzed using the Boulton method (1963). Using this method the drawdown data are plotted versus time on a log-log scale; time is plotted horizontally and drawdown is plotted vertically. The Boulton delayed-yield method is based on the Theis method, using curve matching of log-log plots of drawdown versus time. This method takes into account the delayed, gravity drainage of groundwater from aquifer materials within the drawdown depression created by pumping. The time-drawdown curve of a well or piezometer in a pumped, unconfined aquifer exhibiting delayed-yield is composed of three distinct segments:

- 1) early-time data showing a Theis-type curve, which under favorable conditions can be used to compute an early-time storage coefficient ( $S_e$ ) and transmissivity (T). However,  $S_e$  does not represent true aquifer storativity;
- 2) a middle segment of nearly flat slope, which departs from the Theis-type curve as a result of gravity drainage of water from the interstices of the aquifer materials above the drawdown water table; and

## SECTION 6

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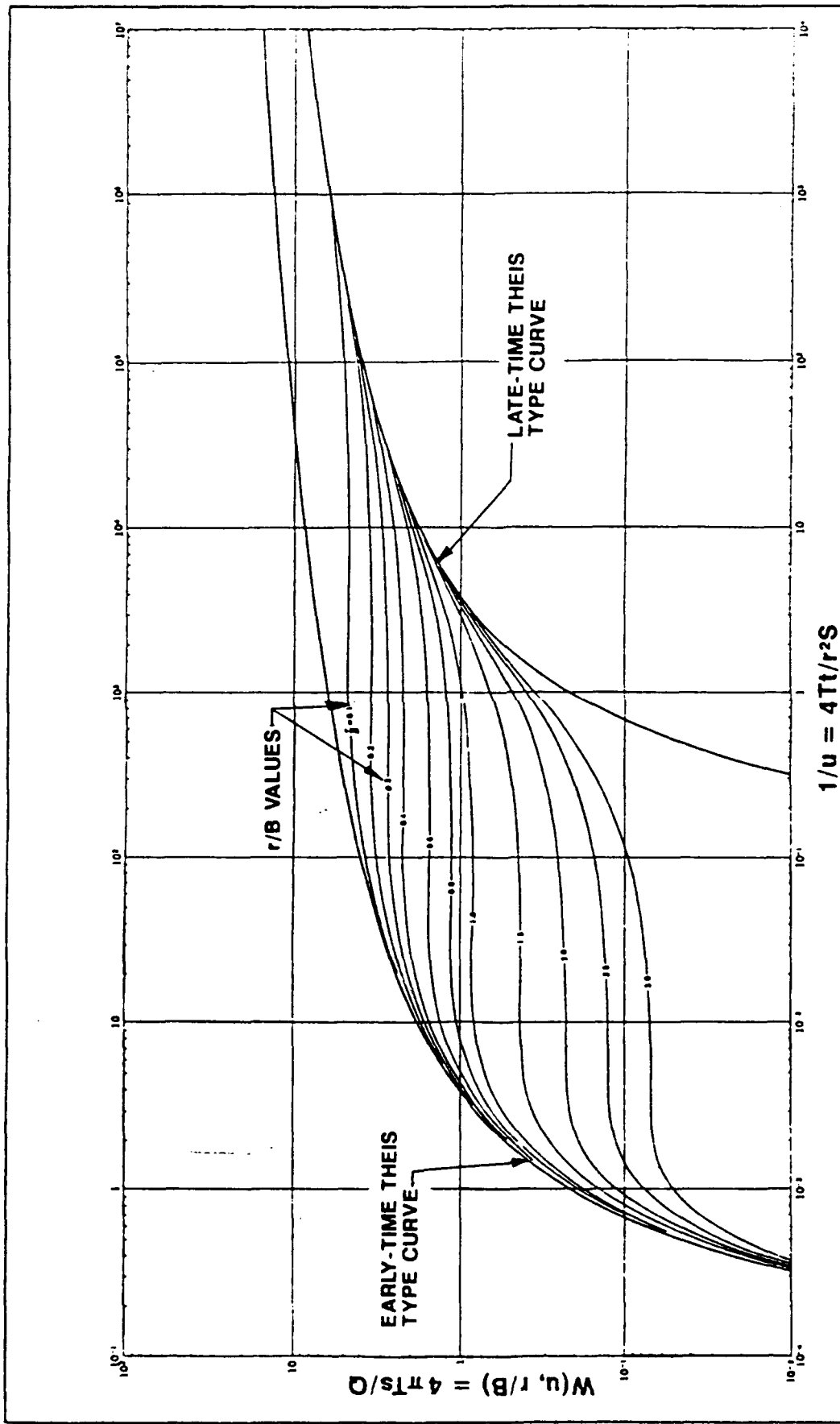
- 3) a late-time segment that gradually returns to the Theis-type curvature, and from which it is possible to obtain estimates of true aquifer storativity ( $S_1$ ) and transmissivity (T).

The three segments are readily apparent in the Boulton delayed-yield type curves (Figure 6-1). Data from the following wells and piezometers were analyzed using the Boulton method: PBP-91-01C,D, PBP-91-02B,C,D, and PBN-91-06C,D. Log-log data plots for these wells, corrected for a general rising water level trend of 0.026 feet/day and fluctuations in barometric pressure, closely resemble and were fitted to, the Boulton delayed-yield type-curves.

The data plot for PBP-91-01B could not be fitted to any Boulton type-curve, and therefore, drawdown data were not analyzed. This well differs from the others in that its screen is vertically directly opposite the screen of the pumped well at a distance of 75 feet, whereas the shortest distance between the pumped well screen and other observation well screens (including PBP-91-01C) is significantly greater. As a result of the relative closeness of the PBP-91-01B screen, drawdown during the crucial first minute is less (by unknown amounts) than the Boulton equation predicts due to vertical components of flow that were created by partial penetration of the aquifer of the pumped well screen. Also, it is likely that the effect on recorded drawdown of pumping rate fluctuation later in the test is greater at the location of the PBP-91-01B well screen than at other observation well screens. Because corrections to the data for pumping rate deviations are not possible, the overall usefulness of the drawdown data in curve matching is further diminished. An example of the Boulton method curve-matching and aquifer hydraulic parameter calculation is illustrated in Figure 6-2. Boulton method analyses for each well or piezometer are provided in Appendix G.

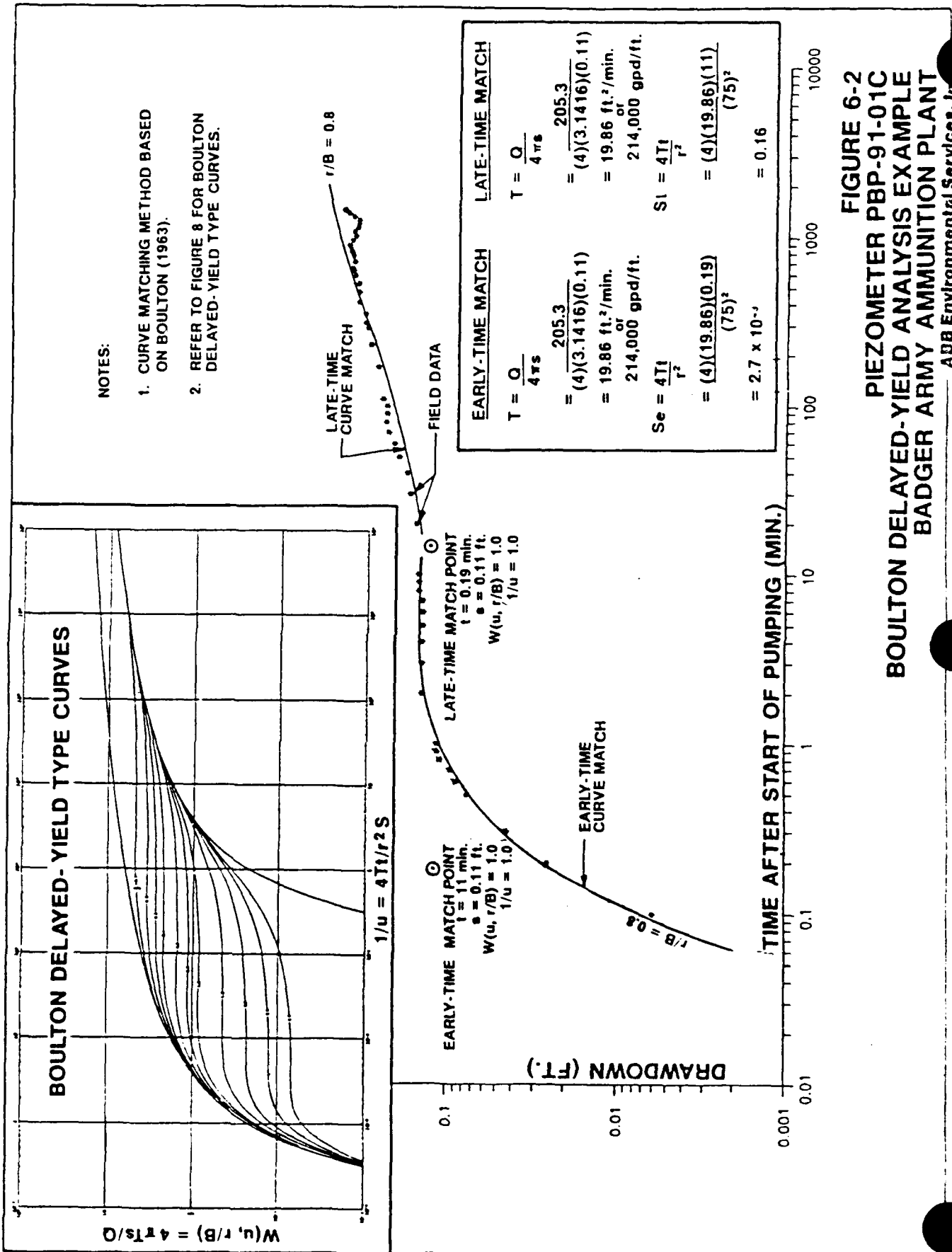
### 6.1.2 Jacob Drawdown Analysis

The late-time drawdown data may also be analyzed by the Cooper and Jacob method (1946), commonly known as the Jacob straight-line method. The drawdown data are plotted versus time on semi-logarithmic paper; time is plotted horizontally on the logarithmic scale and drawdown is plotted vertically on the arithmetic scale. If the test is run long enough and the radial distance from the pumping well is not too great the late-time data will plot along a straight line. The basis for this method is the Theis equations:



**FIGURE 6-1**  
**BOULTON DELAYED-YIELD TYPE CURVES**  
**AQUIFER PUMPING TEST**  
**BADGER ARMY AMMUNITION PLANT**  
 ABB Environmental Services, Inc.

SOURCE: USGS PROFESSIONAL PAPER 708



**NOTES:**

1. CURVE MATCHING METHOD BASED ON BOULTON (1963).
2. REFER TO FIGURE 8 FOR BOULTON DELAYED-YIELD TYPE CURVES.

**BOULTON DELAYED-YIELD TYPE CURVES**

$$W(u, r/B) = 4Ts/Q$$

$$1/u = 4Tt/r^2S$$

EARLY-TIME MATCH POINT  
 $t = 11$  min.  
 $s = 0.11$  ft.  
 $W(u, r/B) = 1.0$   
 $1/u = 1.0$

LATE-TIME MATCH POINT  
 $t = 0.19$  min.  
 $s = 0.11$  ft.  
 $W(u, r/B) = 1.0$   
 $1/u = 1.0$

EARLY-TIME MATCH	LATE-TIME MATCH
$T = \frac{Q}{4\pi s}$	$T = \frac{Q}{4\pi s}$
$= \frac{205.3}{(4)(3.1416)(0.11)}$	$= \frac{205.3}{(4)(3.1416)(0.11)}$
$= 19.86 \text{ ft.}^2/\text{min.}$	$= 19.86 \text{ ft.}^2/\text{min.}$
$214,000 \text{ gpd/ft.}$	$214,000 \text{ gpd/ft.}$
$S_e = \frac{4Tt}{r^2}$	$S_l = \frac{4Tt}{r^2}$
$= \frac{(4)(19.86)(0.19)}{(75)^2}$	$= \frac{(4)(19.86)(11)}{(75)^2}$
$= 2.7 \times 10^{-4}$	$= 0.16$

**FIGURE 6-2  
 PIEZOMETER PBP-91-01C  
 BOULTON DELAYED-YIELD ANALYSIS EXAMPLE  
 BADGER ARMY AMMUNITION PLANT  
 ABB Environmental Services, Inc.**

$$u = \frac{1.87r^2S}{Tt}$$

and

$$W(u) = \frac{s(r,t)T}{114.6 Q}$$

referred to as dimensionless time factor and well function, respectively, where,

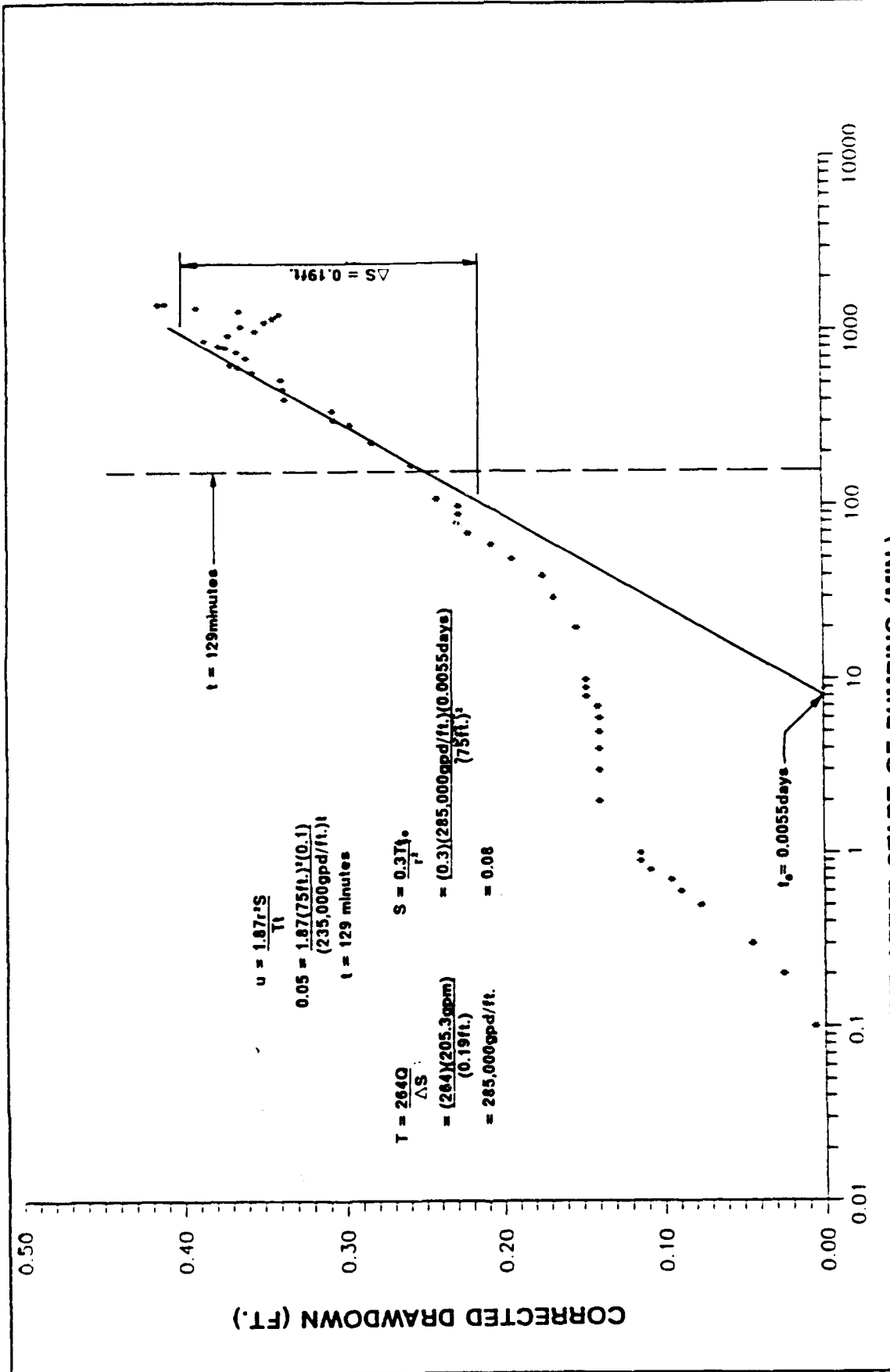
$s(r,t)$	=	drawdown at distance $r$ from pumping well at time $t$ ,
$t$	=	time since pumping started,
$Q$	=	constant well discharge,
$S$	=	storativity (for unconfined aquifers), and
$T$	=	transmissivity.

An example of the Jacob method determination of transmissivity and storativity is illustrated in Figure 6-3. The method is only valid for values of  $u$  less than approximately 0.05. Only data from piezometers PBP-91-01B,C,D were analyzed using this method, because their closeness to the pumping well satisfied the  $u$  criterion. Jacob method analyses for these three piezometers can be found in Appendix H.

## 6.2 ANALYSIS OF RECOVERY DATA

The recovery data were analyzed for transmissivity using the time-ratio method outlined by Driscoll (1986). The residual drawdown data are plotted versus the ratio  $t/t'$  ( $t$  equals time since pumping started,  $t'$  equals time since pumping stopped) on semi-logarithmic paper. The ratio  $t/t'$  is plotted horizontally on the logarithmic scale and residual drawdown is plotted vertically on the arithmetic scale. It has been shown that the residual drawdown ( $s'$ ) is related to the logarithm of the ratio  $t/t'$  as follows (Driscoll, 1986):





**FIGURE 6-3**  
**PIEZOMETER PBP-91-01C**  
**JACOB METHOD ANALYSIS EXAMPLE**  
**AQUIFER PUMPING TEST**  
**BADGER ARMY AMMUNITION PLANT**  
 A30 Environmental Services, Inc.

NOTE:  
 IN DETERMINING  $t_0$  VALUES USED FOR S AND T ARE ESTIMATES BASED  
 ON THE BOULTON DELAYED-YIELD METHOD ANALYSES.

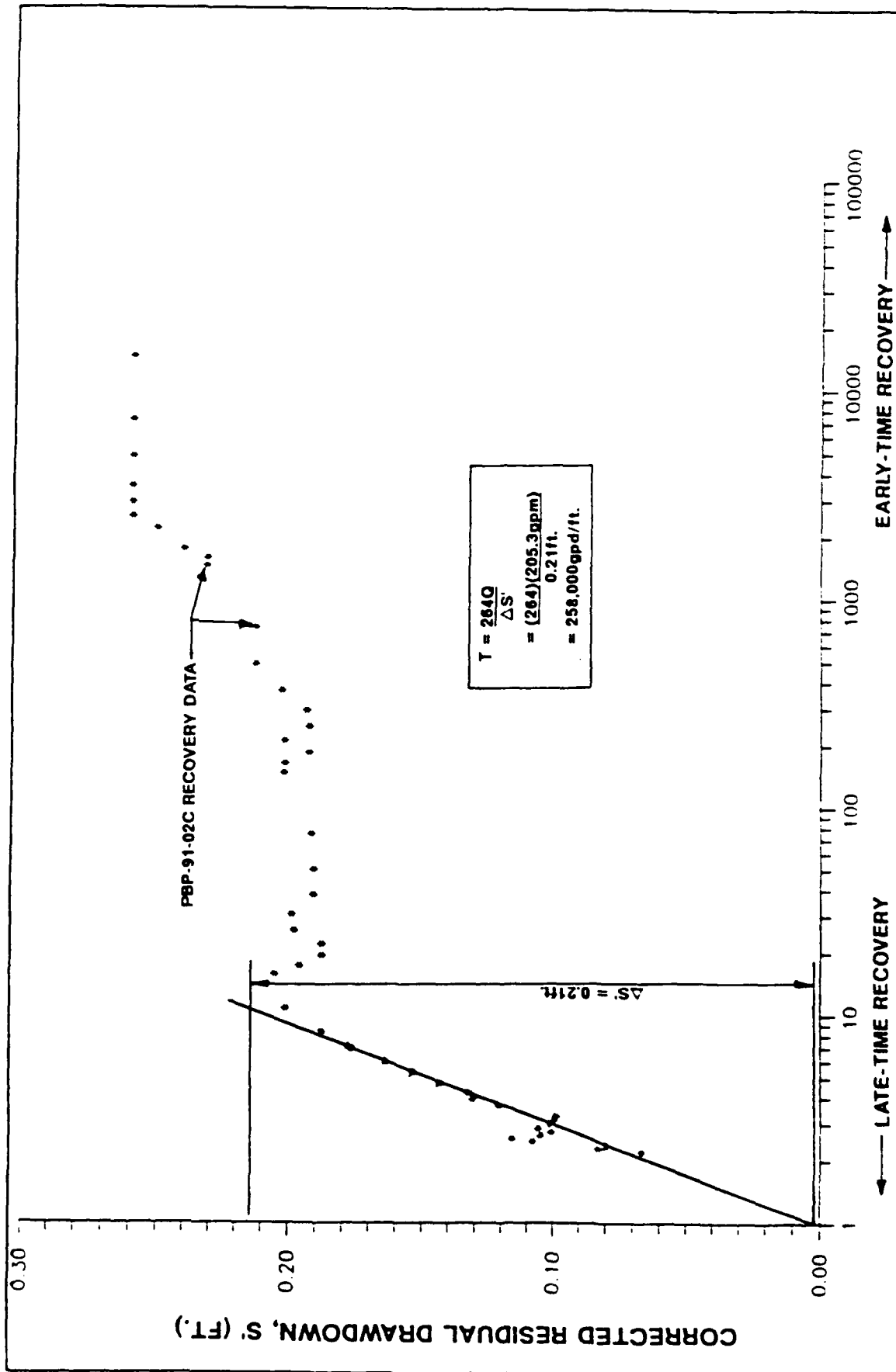
$$s' = \frac{264Q}{T} \log t/t'$$

where:

Q = constant well discharge,  
s' = residual drawdown, and  
T = transmissivity.

When values of  $s'$  are plotted against corresponding values of  $t/t'$  on a semilogarithmic graph, the data points (particularly for late times) should fall along a straight line. Figure 6-4 shows an example of this analytical method and the calculation for transmissivity using corrected residual drawdown data from PBP-91-02C. Note that small values of  $t/t'$  correspond to time periods late in the recovery phase. Analyses for each piezometer and well can be found in Appendix I.

All recovery plots show that between approximately  $t/t' = 1000$  (2 minutes into recovery) and  $t/t' = 10$  (150 minutes into recovery) the rate of recovery is essentially zero. This trend is attributed to changing aquifer storativity in the dewatered zone due to entrapped bubbles of air (Driscoll, 1986).



**FIGURE 6-4**  
**PIEZOMETER PBP-91-02C**  
**RESIDUAL DRAWDOWN ANALYSIS EXAMPLE**  
**AQUIFER PUMPING TEST**  
**BADGER ARMY AMMUNITION PLANT**  
 ABB Environmental Services, Inc.

## 7.0 INTERPRETATION OF THE AQUIFER TEST ANALYSES

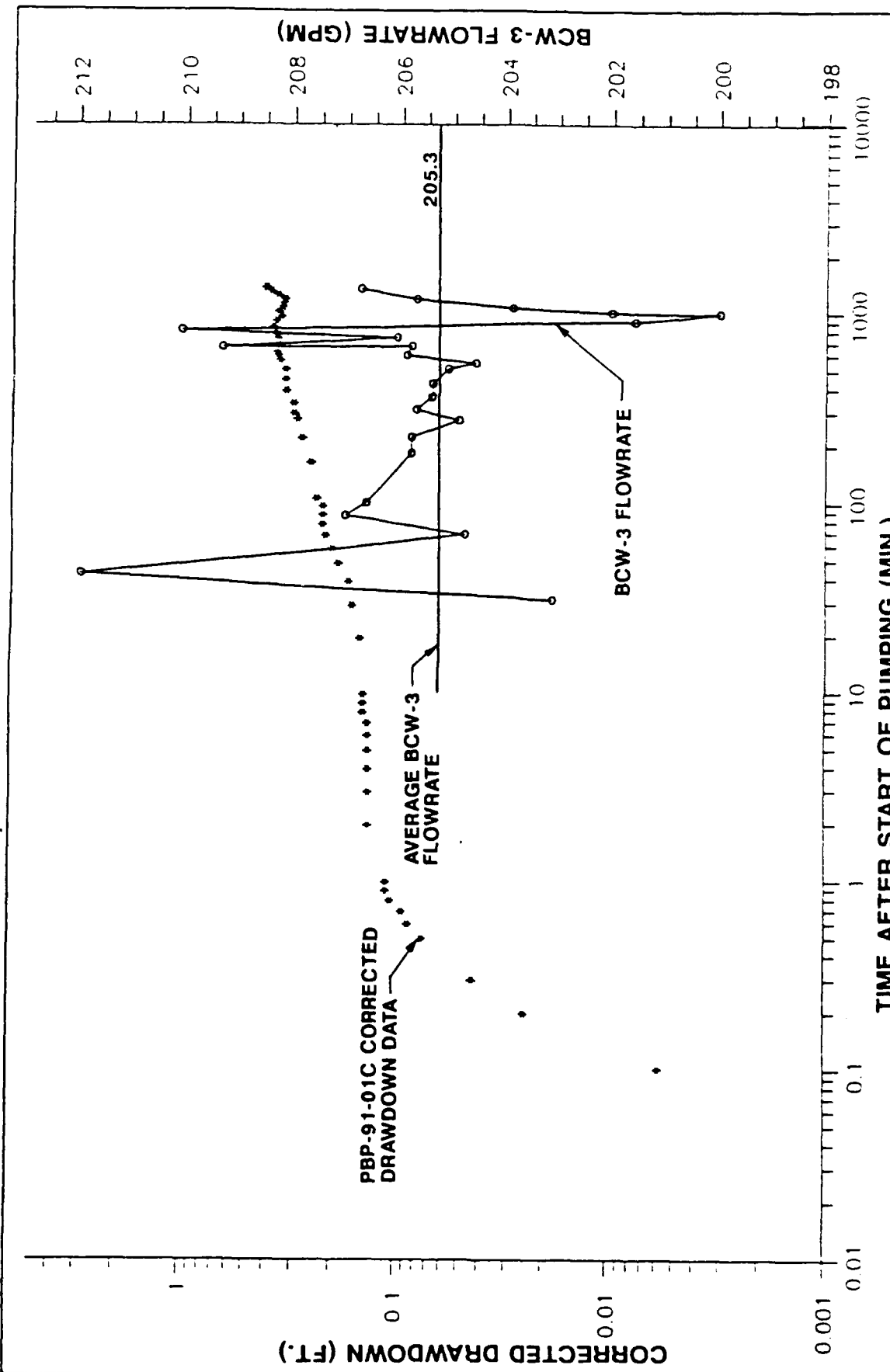
Aquifer tests in unconfined aquifers are commonly run for periods of several days to weeks, but it is evident from the drawdown data that the delayed-yield effect occurred in the very early portion of the test, thus significantly reducing the duration of pumping necessary for calculation of the hydraulic parameters of the aquifer underlying BAAP.

Prior to analysis, data were corrected for a rising water level trend of 0.026 ft/day and changes in barometric pressure. However, during the time period between approximately 900 and 1460 minutes after pumping started at BCW-3, piezometer and well data show a decrease in drawdown (Figure 7-1). The decrease in drawdown is a result of a decrease in flow rate from BCW-3. The effect on the drawdown plots was considered during the Boulton and Jacob methods analyses.

No boundary effects were noticeable in the drawdown data, which is not surprising given evidence from sitewide subsurface explorations data that indicate a relatively uniform overburden thickness and nearly horizontal bedrock surface. In addition, the location and pumping rate of BCW-3 are such that no recharge boundaries from Lake Wisconsin or the Wisconsin River were evidenced in the data plots.

One of the assumptions underlying the Boulton delayed-yield method is that the pumped well penetrates the entire aquifer and thus receives water from the entire thickness of the aquifer by horizontal flow. Within a radius of up to twice the saturated thickness of the aquifer, flowlines created by pumping a partially penetrating pumping well in the aquifer have a component of vertical flow (Kruseman and de Ridder, 1983). Although BCW-3 is a partially-penetrating well, corrections for the effects of partial penetration were not applied in the analysis of the drawdown data because the effects become constant after the early time of the test. These effects are not judged to have a substantive impact on the drawdown data. Furthermore, the early time drawdowns were impacted more by delayed-yield, for which the Boulton analysis does make corrections.

A summary of aquifer hydraulic parameters calculated from the selected analytical methods discussed in Section 6.0 is presented in Table 7-1. The table shows a range in calculated transmissivity from 196,000 to 314,000 gpd/ft. The range for the averages of the three methods used to analyze the data is from 236,000 to 273,000 gpd/ft. In general, the B and D-series wells exhibited higher values of



**FIGURE 7-1**  
**EXAMPLE OF CORRELATION BETWEEN**  
**FLOWRATE AND DRAWDOWN**  
**AQUIFER PUMPING TEST**  
**BADGER ARMY AMMUNITION PLANT**  
 ABB Environmental Services, Inc.

NOTE: DATA POINTS FOR BCW-3 FLOW RATE FROM 567 AND 819 MINUTES (TABLE 4-1) ARE NOT INCLUDED.

TABLE 7-1  
SUMMARY OF CALCULATED AQUIFER HYDRAULIC PARAMETERS  
AQUIFER PUMPING TEST  
BADGER ARMY AMMUNITION PLANT

Well	Radius from Pumping Well r(ft)	BOULTON DELAYED YIELD DRAWDOWN ANALYSES (1)			JACOB DRAWDOWN ANALYSES (2)		RESIDUAL DRAWDOWN (3), (RECOVERY) ANALYSES
		Transmissivity T(gpd/ft)	Early-Time Storage Coefficient (S <sub>e</sub> )	Storativity (S <sub>i</sub> )	Transmissivity T(gpd/ft)	Storativity (S)	Transmissivity T(gpd/ft)
PBP-91-01B	75	-	-	-	223,000	0.07	239,000
PBP-91-01C	75	214,000	2.70E-03	0.16	285,000	0.08	236,000
PBP-91-01D	75	235,000	3.30E-03	0.17	311,000	0.11	257,000
PBP-91-02B	219	261,000	9.11E-04	0.04	-	-	252,000
PBP-91-02C	219	224,000	1.56E-03	0.07	-	-	258,000
PBP-91-02D	219	314,000	9.71E-05	0.06	-	-	313,000
PBN-91-06C	199	205,000	1.07E-03	0.14	-	-	240,000
PBN-91-06D	197	196,000	9.40E-04	0.13	-	-	249,000
Average:		236,000	1.51E-03	0.11	273,000	0.09	255,000

- NOTES:
- 1) Boulton delayed yield method not applicable for PBP-91-01B data.
  - 2) Jacob drawdown analyses not applicable for the more distant wells PBP-91-02 and PBN-91-06.
  - 3) From Driscoll, 1986.

## SECTION 7

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transmissivity than the C-series wells. This implies that the horizontal hydraulic conductivity is greater for these zones, which is supported by boring log data that indicates the presence of gravel layers in the B and D zones (approximate depth interval).

The ratio of vertical to horizontal hydraulic conductivity is assumed to be very close to 1.0. Supporting evidence for this assumption is the lack of significant stratification in the formation and the very short duration of the delayed-yield effect.

Storativity values from the two analytical methods used for analysis of drawdown data range from 0.04 to 0.14, with a range between the averages of the two methods of 0.09 to 0.11 (Table 7-1). These values fall within the range of 0.01 to 0.3 for unconfined aquifers given by Driscoll (1986), but are slightly lower than expected for the BAAP sand and gravel aquifer.

Assuming unconfined conditions in the aquifer, the theoretical specific capacity of pumping well BCW-3 may be computed using the following equation:

$$\frac{Q}{s} = \frac{T}{1500} \quad (\text{Walton, 1987})$$

where:

Q = the pumping rate in gpm  
s = the maximum drawdown in the pumped well in feet  
T = the aquifer transmissivity in gpd/ft

Based on this equation the theoretical specific capacity is:

$$\begin{aligned}\frac{Q}{s} &= \frac{255,000 \text{ gpd/ft}}{1500} \\ &= 170 \text{ gpm/ft of drawdown}\end{aligned}$$

The actual specific capacity of well BCW-3 from field measurements of maximum drawdown during the 24.5-hour pumping test is:

$$\frac{Q}{s} = \frac{205.3 \text{ gpm}}{10.5 \text{ ft}} = 19.6 \text{ gpm/ft of drawdown}$$

The well efficiency can be computed by dividing the actual specific capacity by the theoretical specific capacity: the result is 12 percent. This low efficiency is probably due to several factors, that may include improper well installation and development, and biologic plugging of the screen. A large amount of iron bacteria was evidenced on the drop pipe when the original 100 gpm pump was pulled from BCW-3.

Although the calculated well efficiency for BCW-3 is low, it has no effect on the analysis of the data and the hydraulic aquifer parameter estimates obtained from the analyses since all parameter estimates were based on drawdown measurements in the nearby monitoring wells and piezometers.



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WATER LEVEL DATA FROM MANUAL MEASUREMENTS

Casing Elev: 858.39

MEASURED WATER LEVELS

WELL #: PBN-85-04A

<u>Date</u>	<u>Time</u>	<u>Depth to Water (ft)</u>	<u>Make/Serial # of WL meter</u>
2/5/91	1450	93.90	Solinst/#04912
2/7/91	1545	93.85	" "
2/8/91	1030	93.82	" "
2/9/91	1150	93.82	" "
2/10/91	08:55	93.79	" "
2/11/91	08:59	93.85	Drawdown " "
2/11/91	15:22	93.81	" "
"	16:59	93.85	+0.04 " "
"	18:51	93.87	+0.06 " "
"	20:11	93.88	+0.07 " "
"	23:06	93.88	+0.07 " "
2/12/91	01:12	93.88	+0.07 " "
"	05:09	93.87	+0.06 " "
2/12/91	16:14	93.93	+0.12 " "
2/13/91	09:14	93.88	+0.07 " "

Casing Elev. = 859.25

**MEASURED WATER LEVELS**

WELL # : PBN-89-01

<u>Date</u>	<u>Time</u>	<u>Depth to Water (ft)</u>	<u>Make/Serial # of WL mtd</u>
12/5/91	1450	93.15	Solinst/#04912
12/7/91	1545	93.09	" "
12/8/91	1030	93.05	" "
12/9/91	1150	93.05	" "
12/10/91	09:01	93.03	" "
12/11/91	09:01	93.08	" "
12/11/91	15:24	93.00	<u>Drawdown</u> " "
"	17:08	93.09	+0.04 " "
" "	18:54	93.07	+0.02 " "
" "	20:14	93.11	+0.06 " "
"	23:10	93.12	+0.07 " "
12/12/91	01:15	93.11	+0.06 " "
"	05:16	93.10	+0.05 " "
12/12/91	16:16	93.16	+0.11 " "
12/13/91	09:20	93.12	+0.07 " "

Casing Elev. = 859.70

**MEASURED WATER LEVELS**

WELL # : PBN-89-C41C

<u>Date</u>	<u>Time</u>	<u>Depth to Water (ft)</u>	<u>Make/Serial # of WL meter</u>
2/5/91	1450	94.08	Solinst/#04912
2/7/91	1545	94.05	" "
2/8/91	1030	93.98	" "
2/9/91	1150	93.98	" "
2/10/91	08:57	93.96	" "
2/11/91	09:04	94.00	" "
2/11/91	15:23	93.98	" "
"	#1705 JAB	94.02	Drawdown +0.04
"	18:58	94.01	+0.03 " "
"	20:16	94.05	+0.07 " "
"	23:12	94.06	+0.08 " "
2/12/91	01:18	94.06	+0.08 " "
"	05:13	94.03	+0.05 " "
2/12/91	16:18	94.10	
2/13/91	09:25	94.05	

Casing Elev. = 863.23

MEASURED WATER LEVELS

WELL # : PBM-65-

<u>Date</u>	<u>Time</u>	<u>Depth to Water (ft)</u>	<u>Make/Serial # of WL mo.</u>
12/8/91	1045	96.92	Solinst / # 0491
12/9/91	1200	96.93	" "
12/10/91	09:13	96.91	" "
12/11/91	09:08	96.96	" "
12/11/91	19:03	96.91	" "
12/11/91	23:18	96.91	" "
12/12/91	16:22	96.92	" "
12/13/91	09:31	96.97	" "

Casing Elev. = 546.78

**MEASURED WATER LEVELS**

WELL # : PBM-85-06

<u>Date</u>	<u>Time</u>	<u>Depth to Water (ft)</u>	<u>Make/Serial # of WL meter</u>
12/5/91	15:15	82.95	Solinst / #04912
12/8/91	11:10	82.84	" "
12/9/91	11:25	82.85	" "
2/10/91	08:26	82.83	" "
12/11	08:34	82.87	<u>Drawdown</u> " "
12/11/91	15:19	82.85	-0.02 " "
12/11/91	16:09	82.85	-0.02 " "
12/11/91	18:26	82.91	+0.04 " "
12/11/91	20:01 <del>18</del>	82.93	+0.06 " "
12/11/91	23:00	82.94	+0.07 " "
12/12/91	00:01	82.94	+0.07 " "
12/12/91	02:22	82.94	+0.07 " "
"	05:27	82.94 <sup>100</sup> <sub>2</sub>	+0.05 " "
2/12/91 <del>16:10</del>	16:10	83.02	
2/13/91	09:00	82.90	

Casing Elev. = 849.36

MEASURED WATER LEVELS

WELL # : PBM-89

<u>Date</u>	<u>Time</u>	<u>Depth - Water (ft)</u>	<u>Make/Serial # of WL mot</u>
12/8/91	1040	83.28	Solinst/#04912
12/9/91	1210	83.27	" "
12/10/91	09:07	83.27	" "
12/11/91	09:14	83.29	" "
12/11/91	19:08	83.28	" "
12/11/91	23:25	83.28	" "
12/12/91	16:27	83.30	
12/13/91	09:36	83.31	



Casing Elev. : 855.66

MEASURED WATER LEVELS

WELL# : PBN-89-12A

<u>Date</u>	<u>Time</u>	<u>Depth to Water (ft)</u>	<u>Make/Serial # of WL meter</u>
12/8/91	1100	91.40	Solinst/#04912
12/9/91	1115	91.43	" "
12/10/91	0842	91.38	" "
12/11/91	08:42	91.43	" "
12/11/91	18:33	91.40	" "
12/11/91	23:47	91.38	" "
12/12/91	16:47	91.42	" "
12/13/91	08:49	91.44	" "

Casing Elev.: 856.04

MEASURED WATER LEVELS

WELL #: PBN-89-1

<u>Date</u>	<u>Time</u>	<u>Depth to Water (ft)</u>	<u>Make/Serial # of WL m</u>
12/8/91	1100	91.92'	Solinst/# 04912
12/9/91	1115	91.95	" "
12/10/91	0839	91.91'	" "
12/11/91	08:45	91.95'	" "
12/11/91	18:37	91.91	" "
12/14/91	23:51	91.91	" "
12/12/91	16:48	91.94	" "
12/13/91	08:52	91.95	" "

~~93~~ PIA

MEASURED WATER LEVELS

WELL # : PBN-91-12C

<u>Date</u>	<u>Time</u>	<u>Depth to Water (ft)</u>	<u>Make/Serial # of WL meter</u>
12/8/91	1100	90.22	Solinst /# 04912
12/9/91	1115	90.26	" "
12/10/91	08:45	90.21	" "
12/11/91	09:49	90.25	" "
12/11/91	18:40	90.24	" "
12/11/91	23:54	90.22	" "
12/12/91	16:50	90.25	" "
12/13/91	08:54	90.25	" "

MEASURED WATER LEVELS

WELL # : PBN-91-1

<u>Date</u>	<u>Time</u>	<u>Depth to Water (ft)</u>	<u>Make/Serial # of WL me:</u>
12/8/91	1100	89.15	Solinst / #04912
12/9/91	1115	89.18	" "
12/10/91	08:48	89.15	" "
12/11/91	08:52	89.19	" "
12/11/91	18:42	89.15	" "
12/11/91	23:57	89.15	" "
12/13/91	16:52	89.17	" "
12/13/91	08:56	89.18	" "

APPENDIX B

BORING LOGS AND PIEZOMETER/WELL CONSTRUCTION DIAGRAMS

<b>FIELD BORING LOG</b>			Boring No. <u>P8P-91-01</u> B, C, D	
Project No. <u>06553-03</u>		Project Name <u>RADGER AAP</u>		Page <u>1</u> of <u>4</u>
Contractor <u>LAYNE</u>		Driller <u>G. BRAWLIZ</u>		Date started <u>10-12-91</u> completed <u>10-13-91</u>
Method <u>WAL WALL</u>	Casing Size <u>9" OD.</u>	HNU <u>11.71102</u>	Protection Level <u>&gt;</u>	
Ground El	Soil Drilled <u>253.5'</u>	<u>±</u> below ground <u>95'</u>	Total Depth <u>253.5'</u>	
Logged by <u>RJR</u>		Checked by <u>DRP</u>		Date <u>10/16/91</u>

Sample No	Depth in Feet	Blows per 6 inches	Pen Rec	Description	Comments on Advance of Boring	Monitoring	
						HNU	LEL
	0-10'			BROWN <u>SILT</u> , SOME CLAY, TR. F SAND, PUD. (ML)	DID NOT HAVE FUNCTIONING TIP OR HNU	JAR	ATR
	10-20'			LT BROWN <u>SAND</u> , PUD, F, LITTLE M SAND, TR SILT, TR COBBLES	(SP)		
	20-30'			LT BROWN <u>SAND</u> , F-M, PUD, LITTLE C SAND, TR F GRAV., TR SILT, TR COBBLES	(SP)		
	30-40'			LT BROWN <u>SAND</u> , PUD, F, SOME M SAND, LITTLE SILT, LITTLE C SAND, TR F GRAVEL.	(SP)		
	40-50'			40-43': LT BROWN <u>SAND</u> PUD, M, SOME F SAND, LITTLE C SAND, TR GRAV. TR SILT.	(SP) ✓ CHANGE		
	50-60'			43-50: LT BROWN <u>SAND</u> : GRAVEL, WGD, F GRAVEL, LITTLE C GRAVEL, M-C SAND, LITTLE F SAND.	(SW)		
				50-53: SAME AS ABOVE			
				53-55: BROWN GRAVELLY <u>SAND</u> , WGD, C, GRAVEL: F	(SW)		
				55-60: LT BROWN <u>SAND</u> , WGD, C, SOME F GRAVEL, LITTLE M SAND, TR F SAND, TR COBBLES	(SW)		

FIELD BORING LOG			Boring No. PSP-91-0	
Project No. 06853-03	Project Name BANGER AAP		Page 2 of 4	
Contractor LAYNE	Driller RODRIGUEZ	Date started 10-12-91 completed 10-13-91		
Method DUAL WALL	Casing Size 9" O.D.	MNU 11.71102	Protection Level 1	
Ground El	Soil Drilled 253.5	± below ground 95'	Total Depth 253.5'	
Logged by RRR	Checked by DRP	Date 10/16/91		

Sample No	Depth in Feet	Blows per 6 inches	Pen REC	Description	Comments on Advance of Boring	Monitoring	
						MNU	LEL
	60-70'			LT BROWN GRAVELLY SAND, WLD, C, F GRAVEL, LITTLE M SAND, TR C SAND <sup>RE</sup> GRAVEL TR. COBBLES.	(SW)	JAR	ATF
	70-80'			70-73' SAME AS ABOVE 73-80' LT BROWN SAND, WLD, C, LITTLE M SAND, LITTLE F GRAVEL, LITTLE <del>F GRAVEL</del> COBBLES, TR F SAND. INTERBEDS OF LARGE COBBLES (4"-6" IN DIAM)	(SW) ✓ CHANGE		
	80-90'			80-83': SAME AS ABOVE 83-90': LT BROWN SAND PGD, F, SOME SILT, TR M SAND, TR F GRAVEL	(SP)		
	90-100'			SAME AS ABOVE	(EP) → 92.8		
	100-110			SAME AS ABOVE	(SP)		
	110-120			LT BROWN SAND, PGD, M, SOME F SAND, TR C SAND, TR F GRAVEL, TR SILT	(SP)		
	120-130'			120-129' LT BROWN SAND WLD, M, SOME C, LITTLE F SAND, TR F GRAVEL. 129-130: LT BROWN SAND, WLD, M, SOME C, LITTLE F SAND, LITTLE F GRAV. TR GRAVEL COBBLES	(SW) (SW)		
	130-140			130-138 SAME AS 129-130	10-12-91 10-13-91		

FIELD BORING LOG			Boring No. P3P-91-01	
Project NO06853-03		Project Name <u>BADGER AAP</u>		Page <u>3</u> of <u>4</u>
Contractor <u>LAYNE</u>		Driller <u>G. RODRIGUEZ</u>	Date started <u>10-12-91</u> completed <u>10-13-91</u>	
Method <u>DUAL WALL</u>	Casing Size <u>9" o.d.</u>	HNU <u>11.7/10.2</u>	Protection Level <u>D</u>	
Ground El	Soil Drilled <u>253.5</u>	<u>2</u> below ground <u>95'</u>	Total Depth <u>253.5'</u>	
Logged by <u>TRR</u>		Checked by <u>DRP</u>	Date <u>10/16/91</u>	

Sample No	Depth in Feet	Blows per 8 inches	Pen Rec	Description	Comments on Advance of Boring	Monitoring	
						HNU	LEL
	138-140			138-140: LT BR SAND, PUD, M-C, LITTLE F, TR F GRAV, TR SILT	(SP)	JAR	ATR
	140-150			140-146: LT BROWN SAND, PUD, F, SOME M, TR C, TR SILT	(SP)	0	0
	=			146-150: LT BROWN SAND, F, WLD, SOME M, LITTLE C, TR F GRAVEL, TR SILT	(SW)		
	150-160			LT BROWN SAND, WLD, M, SOME C, LITTLE F GRAV, LITTLE F SAND, TR SILT	(SW)	0	0
	160-170			SAME AS ABOVE	(SW)	0	0
	170-180			SAME AS ABOVE	(SW)	0	0
	180-190			180-185: SAME AS ABOVE	(SW)	0	0
				185-190: LT BROWN SAND, WLD, M-C, SOME F GRAVEL, TR C GRAVEL, TR COBBLES, TR SILT, TR F SAND	(SW)		
	190-200			190-193: SAME AS ABOVE	(SW)	0	0
				193-198: LT BROWN GRAVELLY SAND, WLD, SAND, M-C, GRAVEL, C,			
				198-200: LT BROWN SANDY GRAVEL, WLD, F-M, SAND, M-C, TR COBBLES, TR F SAND, TR SILT	(GW)		

NOTE: IT IS A DIFFICULT DISTINCTION BTWN PUD AND WLD IN THESE SEDIMENTS



FIELD BORING LOG				Boring No. P3P-91	
Project No. 06253-03		Project Name BADGER AAP		Page 4 of 4	
Contractor LAYNE		Driller G. RODRIGUEZ	Date started 10-12-91	completed 10-13-91	
Method DUAL WALL	Casing Size 9" O.D.	HNU 11.7/10.2	Protection Level D		
Ground El	Soil Drilled 253.5	± below ground 95'	Total Depth 253.5'		
Logged by TCR		Checked by DRP	Date 10/16/91		

Sample No	Depth in Feet	Blows per 6 inches	Pen Rec	Description	Comments on Advance of Boring	Monitoring	
						HNU	LEL
	200-210			200-205: LT BROWN GRAVELLY SAND, WGD, M-C, LITTLE F SAND, TR SILT GRAVEL F-M, TR COBBLES	(SW)	JAR	ATF
	210-220			210-216: LT BROWN GRAVELLY SAND, WGD. SAME AS ABOVE 216-220: LT BROWN SANDY GRAVEL, WGD, F-M, SOME C GRAVEL, SAND: M-C, TR COBBLES, TR F SAND, TR SILT.	(SW) (SW)		
	220-230			220-223: LT BROWN GRAVELLY SAND, WGD, M-C, LITTLE F SAND, TR SILT, TR COBBLES, GRAVEL F-M. 223-230: LT BROWN, PWD SAND, M, LITTLE C, LITTLE F, TR F GRAVEL TR SILT	(SW) ✓ CHANGE (SP)		
	230-240			SAME AS ABOVE	(SP)		
	240-250			240-247: LT BROWN SAND, PWD, M, LITTLE C, TR F GRAVEL 247-250, LT BROWN SANDY GRAVEL, WGD, F-M, SAND: C-M, TR SILT, LITTLE COBBLES	(SP) ✓ CHANGE (LW)		
				B.O.B. - 253.5'			

FIELD BORING LOG				Boring No. <u>PB7-91-03</u> <u>B, C, D</u>	
Project No. <u>6853-03</u>		Project Name <u>BADGER AAP</u>		Page <u>1</u> of <u>4</u>	
Contractor <u>LAYNE</u>		Driller <u>G RODRIGUEZ</u>		Date started <u>10-13-91</u> completed <u>10-14-91</u>	
Method <u>DUAL WALL</u>		Casing Size <u>9" O.D.</u>		HNU <u>11.7110.2</u>	
Ground El		Soil Drilled <u>253.5'</u>		Protection Level <u>D</u>	
Logged by <u>TKL</u>		Checked by <u>DRP</u>		Date <u>10/16/91</u>	
		Total Depth <u>253.5'</u>			

Sample No	Depth in Feet	Blows per 6 inches	Pen Rec	Description	Comments on Advance of Boring	Monitoring	
						HNU	LEL
	0-10'			BROWN CLAYEY SILT, P&D LITTLE F SAND	(ML)		
	10-20'			LT BROWN SAND, P&D, F, LITTLE SILT, LITTLE M, TR COARSE, TR F GRAVEL, GRADUALLY CHANGING TO LT BROWN SAND, P&D, M, LITTLE F, TR C, TR GRAVEL COARSE GRAVEL - COBBLE ZONE, W&D, AT 12-13'	DONT HAVE FUNCTIONING HNU (SP)		
	20-30'			20-24': LT BROWN SAND, W&D, M, P&D, AS ABOVE 24-30': LT BROWN SAND, W&D, M, LITTLE C, LITTLE F SAND, TR F GRAVEL, TR SILT	(RA) (SP) ✓ CHANGE (SW)		
	30-40'			LT BROWN SAND, W&D, M, SOME C, LITTLE F, TR F GRAVEL, TR C GRAVEL, TR SILT	(SW)		
	40-50'			40-46': LT BROWN SAND, W&D, M-C, SOME F GRAVEL, LITTLE F SAND, TR SILT 46-50': LT BROWN GRAVELLY SAND, W&D, C, SOME M, GRAVEL F, TR C, TR COBBLES.	(SW)		
	50-60'			50-55: BROWN SANDY GRAVEL, W&D, F, LITTLE C, SAND: C, LITTLE M, TR F, TR SILT 55-60: BROWN SANDY GRAVEL, W&D, C, SOME F, SAND: C SOME M, TR F.	(SW)		

FIELD BORING LOG			Boring No. <sup>PSP-91</sup> B.C.P.	
Project No. 0685303	Project Name <u>BADGER AAP</u>	Page <u>2</u> of <u>4</u>		
Contractor <u>LAYNE</u>	Driller <u>G RODRIGUEZ</u>	Date started <u>10-14-91</u>	completed <u>10-15-91</u>	
Method <u>DUAL WALL</u>	Casing Size <u>9" O.D.</u>	HNJ <u>11.71102</u>	Protection Level <u>D</u>	
Ground El.	Soil Drilled <u>253.5'</u>	<u>2</u> below ground <u>95'</u>	Total Depth <u>253.5'</u>	
Logged by <u>RRR</u>	Checked by <u>DRP</u>	Date <u>10/16/91</u>		

Sample No	Depth in Feet	Blows per 8 inches	Pen Rec	Description	Comments on Advance of Boring	Monitoring		
						HNU	TEL	CEL
	60-70			60-67': LT BROWN SAND WGD, C, SOME M, SOME F GRAVEL, TR C GRAVEL	(SW)			C
				67-70': LT BROWN SAND WGD TO PUD, M-C, TR F SAND, TR SILT, TR F GRAVEL, TR COBBLES.	TRIP OUT TO CHANGE FROM A CROWD-OUT TO A CROWD- IN BIT.			0
	70-80			LT BROWN SAND, WGD, C, SOME M SAND, LITTLE F SAND, LITTLE F GRAVEL, TR COBBLES	(SW)			0
	80-90'			(RB) LT BROWN SANDS ET PUD, M, LITTLE C, LITTLE F, TR F GRAVEL, TR COBBLES, TR SILT	(SP)			C
	90-100'			LT BROWN SAND, PUD, F-M, LITTLE SILT, TR C SAND.	(SP)			0
	100-110			SAME AS 90-100'	(SP)			0
	110-120			LT BROWN SAND, PUD, M, LITTLE C, LITTLE F, TR F GRAVEL. (SP)	STARTED USING WATER DOWN CASING AT THIS POINT.			0
	120-130			120-122: SAME AS 110-120' 122-127: LT BROWN SAND WGD, M, SOME C, LITTLE F, LITTLE F GRAVEL, TR COBBLES. 127-128': COBBLE-BOULDER ZONE. 128-130': LT BROWN GRAVELY SAND, WGD, M-C, LITTLE F, GRAVEL: F-M, LITTLE COBBLES	✓ CHANGE (SW)			0

FIELD BORING LOG			Boring No. <u>PBP-91-02</u> <u>B,C,D</u>	
Project No <u>0685303</u>		Project Name <u>SANGER AAP</u>		Page <u>3</u> of <u>4</u>
Contractor <u>LAYNE</u>		Driller <u>G RODRIGUEZ</u>	Date started <u>10-14-91</u> completed <u>10-15-91</u>	
Method <u>DUAL WALL</u>	Casing Size <u>9" O.D</u>	HNU <u>11.7/10.2</u>	Protection Level <u>1</u>	
Ground El	Soil Drilled <u>253.5</u>	<u>7</u> below ground <u>95'</u>	Total Depth <u>253.5</u>	
Logged by <u>DRP</u>		Checked by <u>DRP</u>	Date <u>10/16/91</u>	

Sample No	Depth in Feet	Blows per 8 inches	Pen Rec	Description	Comments on Advance of Boring	Monitoring	
						HNU	CEL
	130-140			130-136': LT BROWN GRAVELLY SAND AS ABOVE	(SW)	JAR	ATF
	140-150			136-140': LT BROWN SAND, WGD, M-C, SOME F GRAVEL, LITTLE C GRAVEL, TR F SAND, TR SILT TR COBBLES	(SW)		
	150-160		150-156	SANDY GRAVEL, WGD, BROWN, F, SOME C GRAVEL, SAND: M-C, TR FINE, TR SILT	(SW)		
	160-170			156-160': LT BROWN GRAVELLY SAND, WGD, M-C, LITTLE F, GRAVEL: F, TR COBBLES	(SW)		
	170-180			LT BROWN SAND, P.G.D, M, SOME F, TR C, TR SILT	(SP)		
	180-190			SAME AS 160-170	(SP)		
	190-200			180-184': LT BROWN SAND, P.G.D, M, SOME C, TR F GRAVEL, TR F SAND.	(SP)		
				184-190': LT BROWN SAND, WGD, M-C, LITTLE F GRAVEL, TR F SAND, TR SILT.	(SW)		
				190-197': SAND, WGD AS ABOVE.			
				197-200': LT BROWN SAND, WGD, C, SOME M, SOME F GRAVEL, TR C GRAVEL, TR COBBLES, TR F SAND, TR SILT	(SW)		
	200-210			SAME AS 197-200	(SW)		

FIELD BORING LOG			Boring No. P8P-91 B.C.12	
Project No 06853-03		Project Name BANGER AAP		Page 4 of 4
Contractor LAYNE		Driller G. BOROWITZ		Date started 10-14-91 completed 10-15-91
Method DUALWALL	Casing Size 9" O.D.	HNU 11.7/10.2	Protection Level D	
Ground El	Soil Drilled 253.3	± below ground 95	Total Depth 253.5	
Logged by RRC		Checked by DRP	Date 10/16/91	

Sample No	Depth in Feet	Blows per 6 inches	Pen Rec	Description	Comments on Advance of Boring	Monitoring	
						HNU	LE
	210-220			210-215': LT BROWN GRAVELLY SAND, WGD, C. SOME M, LITTLE F, TR SILT. LITTLE COBBLES GRAVELLY F, LITTLE C. 215-220: LT BROWN SAND WGD, C, SOME M, SOME F GRAVEL, LITTLE F SAND TR SILT. TR COBBLES.	(SW)	JAR	ATP
	220-230			SAME AS 215-220	(SW) ✓ CHANGE		
	230-240			LT BROWN SAND, PGT, M, SOME C, LITTLE F SAND, TR F GRAVEL, TR SILT.	(SP)		
	240-250			240-248: SAME AS 230-240. 248-253: COBBLE-GRAVEL ZONE.	(SP) ✓ CHANGE (GW)		
				TSOB = 253.5			

FIELD BORING LOG				Boring No. P3N-91-06C	
Project: NO 06 853-03		Project Name: <u>BADGER ASP</u>		Page <u>1</u> of <u>2</u>	
Contractor: <u>LAYNE</u>		Driller: <u>G. RODRIGUEZ</u>		Date started: <u>10-16-91</u> completed: <u>10-22-91</u>	
Method: <u>DUAL WALL</u>		Casing Size: <u>9" O.D.</u>		HNU: <u>11.7110.2</u> Protection Level: <u>D</u>	
Ground El:		Soil Drilled: <u>220'</u>		<u>±</u> below ground <u>90'</u> Total Depth: <u>220'</u>	
Logged by: <u>RRR</u>		Checked by: <u>DRP</u>		Date: <u>10/24/91</u>	

Sample No	Depth in Feet	Blows per 6 inches	Pen Rec	Description	Comments on Advance of Boring	Monitoring	
						NNU	CEL
	0-10'			BROWN CLAYEY SILT, PGD, TR F SAND, COHESIVE	(MD)	JAN 1991	0 0
	10-20'			LT BROWN SAND, WGD, M, SOME F, SOME C, LITTLE F GRAVEL, TR SILT	(SW)		0 0
	20-30'			INTERBEDDED LT BROWN SAND, WGD, C, SOME M, LITTLE F GRAVEL, TR SILT, TR C GRAVEL, TR F SAND; AND, LT BROWN SAND, PGD M, LITTLE C, LITTLE F, TR SILT.	(SW) (SP)		0 0
	30-40'			SIMILAR TO 30-40'	(SW)/(SP)		0 0
	40-50'		40-44	LT BROWN SAND, WGD, C, SOME F GRAVEL, LITTLE C GRAVEL, LITTLE M SAND, TR F, TR SILT.	(SW)		0 0
			44-50	BROWN GRAVELY SAND, WGD, C, SOME M, TR F, TR SILT, GRAVEL: F, LITTLE C, TR COBBLES			
	50-60'		50-54 54-58	SAME AS 44-50' LT BROWN SAND, WGD, C, SOME F GRAVEL, LITTLE M SAND, TR C GRAVEL, TR F SAND, TR SILT	(SW)		0 0
			58-60	GRAVELY SAND AS 54-58'			
	60-70'			INTERBEDS OF LT BROWN SAND, WGD, C, SOME M, SOME F GRAVEL, LITTLE C GRAVEL AND; COBBLE ZONES	(SW)		0 0

<b>FIELD BORING LOG</b>			Boring No. <u>P3W-9</u>	
Project: <u>NOUG853-03</u>   Project Name: <u>TRADERS AAP</u>		Page <u>2</u> of <u>2</u>		
Contractor: <u>LAYNE</u>		Driller: <u>G RODRIGUEZ</u>	Date started: <u>10-16-91</u> completed: <u>10-22-91</u>	
Method: <u>DUAL WALL</u>	Casing Size: <u>9" O.D.</u>	MHU: <u>11.7/102</u>	Protection Level: <u>  </u>	
Ground El.:	Soil Drilled: <u>220'</u>	± below ground: <u>90'</u>	Total Depth: <u>220'</u>	
Logged by: <u>TBR</u>		Checked by: <u>DRP</u>	Date: <u>10/24/91</u>	

Sample No	Depth in Feet	Blows per 6 inches	Pen REC	Description	Comments on Advance of Boring	Monitoring	
						MNU	EE
	70-80			LT BROWN SAND, WGD, C, SOME M, LITTLE F GRAVEL, TR F SAND, TR SILT TR COBBLES	(SW)		
	80-90		81-88 88-90	SAME AS 70-80 LT BROWN SAND, WGD, M, LITTLE C, LITTLE F, TR SILT	(SW) (SP) ✓ ▼ 90'		
	90-100			SAME AS 88-90	(SP)		
	100-110			" " "	(SP)		
	110-120			LT BR SAND, WGD, M, SOME C, SOME F, TR F GRAVEL TR SILT TR COBBLES	(SW)		
	120-130			BROWN SAND, WGD, C, SOME F GRAVEL, SOME M SAND, LITTLE C GRAVEL, M COBBLES TR F SAND	(SW)		
	130-140			SAME AS 120-130	(SW)		
	140-150			BROWN GRAVELY SAND, WGD, C, SOME M, LITTLE F, GRAVEL; F, LITTLE TR COBBLES, TR SILT	(SW)		
	150-160			LT BROWN SAND, WGD, C, SOME M, LITTLE F, LITTLE F GRAVEL, TR SILT	(SW) WATER BECOMES DARK BROWN		
	160-170			SAME AS 150-160	(SW)		
	170-180		170-176 176-180	SAME AS ABOVE LT BROWN SAND WGD, C, SOME F GRAVEL, SOME M SAND, LITTLE F SAND, LITTLE C GRAVEL, TR COBBLES, TR SILT	(SW)		
	180-190			SAME AS 176-180	(SW)		
	190-200			SAME AS ABOVE	(SW)		
	200-210			BROWN GRAVELY SAND, WGD, C, SOME M, LITTLE F, TR COBBLES, GRAVEL: F, LITTLE C	(SW)		
	210-220			NO SAMPLE			

BCE = 220

FIELD BORING LOG			Boring No. <u>PRW-91-062</u>	
Project No. <u>06553-03</u>	Project Name <u>BANDER AAP</u>		Page <u>1</u> of <u>3</u>	
Contractor <u>LAYNE</u>	Driller <u>G. R. RIVISE</u>	Date started <u>10-12-91</u> completed <u>10-12-91</u>		
Method <u>DUAL WALL</u>	Casing Size <u>9" OD</u>	HNU <u>11.7/10.2</u>	Protection Level <u>D</u>	
Ground El	Soil Drilled <u>251'</u>	<u>±</u> below ground <u>83'</u>	Total Depth <u>251'</u>	
Logged by <u>RRR</u>	Checked by <u>DRP</u>	Date <u>10/14/91</u>		

Sample No	Depth in Feet	Blows per 6 inches	Pen Rec	Description	Comments on Advance of Boring	Monitoring		
						HNU	LEL	
S-1	0-10'			BROWN CLAYEY SILT, WGD, SOFT, MODERATE PLASTIC	(ML)			
S-2	10-20'			10-12': SAME AS S-1 12-20': LT BROWN SAND PGD, F, LITTLE M SAND, TR COARSE SAND, TR SILT, INTERBEDS OF SILT LENSES	(SP)			
S-3	20-30'			LT BROWN SAND, PGD, F, LITTLE M SAND, TR COARSE, TR F GRAVEL, TR SILT	(SP)			
S-4	30-40'			SAME AS S-3	(SP)			
S-5	40-50'			LT BROWN GRAVELLY SAND WGD, M-C SAND, F-M GRAVEL, TR FINE SAND TR SILT.	(SW)			
S-6	50-60'			LT BROWN SAND, WGD, M-C, SOME FINE GRAVEL, TR F SAND	(SW)			
S-7	60-70'			SAME AS S-6	(SW)			
S-8	70-80'			70-73: 73-76: SAME AS S-6 73-76: COBBLE + BOULDER ZONE, 2"-6" DIAMETER, SOME FINE SAND 76-80: LT BROWN SANDS PGD, F, TR M SAND, TR SILT.	(SP)			
S-9	80-90'			LT BROWN SAND, PGD, F, LITTLE M, TR COARSE SAND, TR F-M GRAVEL, TR SILT	(SP) <u>83'</u>			



FIELD BORING LOG				Boring No. P13N-91	
Project No. 06853-03		Project Name <u>BADGER AAP</u>		Page <u>2</u> of <u>3</u>	
Contractor <u>LAYNE</u>		Driller <u>G. RODRIGUEZ</u>		Date started <u>10-11-91</u> completed <u>10-11-91</u>	
Method <u>DUAL WALL</u>		Casing Size <u>9" O.D.</u>		HNU <u>11.7102</u> Protection Level <u>D</u>	
Ground El		Soil Drilled <u>251'</u>		<u>±</u> below ground <u>83'</u> Total Depth <u>251'</u>	
Logged by <u>TRR</u>		Checked by <u>DRP</u>		Date <u>10/14/91</u>	

Sample No	Depth in Feet	Blows per 6 inches	Pen Rec	Description	Comments on Advance of Boring	Monitoring		
						HNU	LEL	
S-10	90-100'			SAME AS S-9	(SP)			
S-11	100-110'			LT BROWN SAND, PGD, F, LITTLE M, LITTLE SILT	(SP)	0	0	0
S-12	110-120			110-117 = SAME AS S-9 117-120 = LT BROWN SAND PGD, F-M, TR COARSE, TR F-M GRAVEL, TR COBBLES.	(SP)	0	0	0
S-13	120-130			120-122: SAME AS S-12 122-130: LT BROWN SANDY GRAVEL, WGD, F-M GRAVEL, M-C SAND, TRACE SILT LITTLE COBBLES.	(GW)	0	0	0
S-14	130-140			130-137: LT BROWN SAND, PGD, F-M, LITTLE SILT.	(SP)	0	0	0
<del>S-15</del>				137-140: LT BROWN SAND PGD, F-M, LITTLE COARSE, LITTLE F GRAVEL, TR COBBLES, TR SILT	(SP)			
S-15	140-150			LT BROWN SAND, WGD, M, SOME FINE, LITTLE C, LITTLE F GRAVEL, TR COBBLES, TR SILT.	(SW)	0	0	0
S-16	150-160			LT BROWN SAND, PGD, F-M, SOME C, TR F GRAVEL, TR SILT.	(SP)	0	0	0
S-17	160-170			SAME AS S-16	(SP)	0	0	0
S-18	170-180			LT BROWN SAND, WGD, M-C, SOME F SAND, LITTLE F GRAVEL, TR SILT.	(SW)			

FIELD BORING LOG				Boring No. <u>PDN-91-065</u>	
Project No <u>06853-03</u>	Project Name <u>ISAUER AAP</u>		Page <u>3</u> of <u>3</u>		
Contractor <u>LAYNE</u>	Driller <u>G RODRIGUEZ</u>	Date started <u>10-11-91</u>	completed <u>10-11-91</u>		
Method <u>DUAL WALL</u>	Casing Size <u>9" O.D.</u>	HNU <u>11.7110.2</u>	Protection Level <u>D</u>		
Ground El	Soil Drilled <u>251'</u>	<u>2</u> below ground <u>83'</u>	Total Depth <u>251'</u>		
Logged by <u>TZR</u>	Checked by <u>DAP</u>	Date <u>10/14/91</u>			

Sample No	Depth in Feet	Blows per 6 inches	Pen Rec	Description	Comments on Advance of Boring	Monitoring		
						HNU	LEL	
S-19	180-190			SAME AS S-18 (SW)	WATER IS DARK BROWN DUE TO SILT CONTENT	0	0	0
S-20	190-200			SAME AS S-18 (SW)		0	0	0
S-21	200-210			200-206: LT BROWN SAND (SP) P.G.D., M, SOME F, LITTLE C SANDS, TR GRAVEL, TR SILT		0	0	0
				206-210: LT BROWN SAND (SW) W.G.D., M-C, SOME F GRAVEL TR F SAND, TR SILT		0	0	0
S-22	210-220			LT BROWN SAND, P.G.D., F.M. (SP) LITTLE COARSE SAND, TR F GRAVEL, TR SILT		0	0	0
S-23	220-230			LT BROWN SAND, P.G.D., M (SP) SOME C SANDS, LITTLE F SANDS, TR SILT, TR GRAVEL		0	0	0
S-24	230-240			LT BROWN SAND, P.G.D. (SP) F, LITTLE M SAND, TR COARSE SAND, LITTLE SILT.		0	0	0
S-25	240-250			240-245: SAME AS S-24 (SP) 245-250: LT BROWN GRAVELY SANDS, W.G.D., M-C, LITTLE F SAND, GRAVEL IS F-C, TR (SW) LARGE COBBLES, TR SILT.		0	0	0
				BOE 250'				

# FIELD BORING LOG

Boring No. PBN-9

Project: No. <u>0653-03</u>	Project: Name <u>BADGE 2 AAP</u>	Page <u>1</u> of <u>3</u>
Contractor <u>LAYNE</u>	Driller <u>G. RODRIGUEZ</u>	Date started <u>10-23-91</u> , completed <u>10-23-91</u>
Method <u>DUAL WALL</u>	Casing Size <u>9" O.D.</u>	HNU <u>71.7/10.2</u>   Protection Level <u>D</u>
Ground El. _____	Soil Drilled <u>200'</u>	$\pm$ below ground <u>10'</u>   Total Depth <u>200'</u>
Logged by <u>DRP</u>	Checked by <u>DRP</u>	Date <u>10/26/91</u>

Sample No	Depth in Feet	Blows per 6 inches	Pen rec	Description	HNU Jar	Comments on Advance of Boring	Monitoring	HNU File
0-10'		0-9'		BROWN CLAYEY SILT P.D., TR F SAND, COHESIVE.		(ML)	0	0
		9-10'		LT BROWN SAND, WGD, C, SOME M, LITTLE F, LITTLE F GRAVEL, TR SILT. THIN INTERBODS OR C GRAVEL AND CORIBLES		(SW)		
10-20				SAME AS ABOVE W/ THE THIN INTERBODS OR CORIBLES ENDING AT 14'		(SW)	0	0
20-30				LT BROWN SAND, P.D. C, SOME M, SOME F, TR SILT, LITTLE F GRAVEL		(SP) ✓		
30-40				<del>30-32'</del> - LT BROWN SAND, WGD, C, SOME M, SOME F GRAVEL, LITTLE M SAND.		(SW)		
				<u>32-40'</u> - LT BROWN SAND, P.D, M, SOME C, TR F GRAVEL, TR F SAND, TR SILT		(SP)		
40-50		40-44		SAME AS 32-40'		<del>(SP)</del> (SP) ✓	0	0
		44-50		LT BROWN SAND, WGD, C, SOME M, LITTLE F GRAVEL, TR C GRAV, TR F SAND, TR SILT		(SW)		
50-60				<del>LT</del> DARK BROWN SANDY GRAVEL; WGD, F, LITTLE C, SAND: C, SOME M, TR F. CHANGING TO GRAVELY SAND		(LW)  (SW)	0	0

# FIELD BORING LOG

Boring No. 78V-41-12C

Project: NO 06853-03		Project: Name BADGER AAP		Page 2 of 3	
Contractor LAYNE		Driller G. RODRIGUEZ		Date started 10-23-91 completed 10-23-91	
Method DUAL WALL		Casing Size 9" O.D.		HNU 11.7102 Protection Level D	
Ground El		Soil Drilled 200'		± below ground, 0' Total Depth 200'	
Logged by LCR		Checked by DRP		Date 10/26/91	

Sample No	Depth in Feet	Blows per 6 inches	Pen rec	Description	HNU Jar	Comments on Advance of Boring	Monitoring	
							HNU	EL
60-70				LT BROWN SAND, WGD M-C, LITTLE F GRAVEL TR F SANDS.		(SW)	0	0
70-80		70-75		LT BROWN SAND, PGD, M, LITTLE C, TR F		(SP) ✓	0	0
		75-80		LT BROWN SAND, WGD, C, SOME M, LITTLE TO SOME F GRAVEL, TR COBBLES, TR CGRAV		(SW)		
80-90		80-84		SAME AS 75-80		(SW) ✓	0	0
		84-90		LT BROWN SAND, PGD M, SOME F, LITTLE C.		(SP)		
90-100				LT BROWN SAND, PGD, F, SOME M LITTLE SILT		(SP)	0	0
100-110				SAME AS 90-100		(SP)	0	0
110-120				" " "		(SP)	0	0
120-130				" " "		(SP)	0	0
130-140				LT BROWN TO BROWN SANDY GRAVEL, AND GRAVELY SAND, WGD GRAVEL: F SOME TO LITTLE C, TR COBBLES SAND: M-C, LITTLE TO TR F, TR SILT		(SW) (SW)	0	0
140-150				LT BROWN SAND, WGD, C, SOME M, LITTLE F, LITTLE F GRAVEL.		(SW)	0	0
150-160				SAME AS ABOVE		(SW)	0	0
<del>170-180</del> 160-170	RR			" " "		(SW)	0	0

# FIELD BORING LOG

Boring No. PBN-91

Project: No 06853-03		Project: Name <u>BADGER AAP</u>		Page <u>3</u> of <u>3</u>	
Contractor <u>LAYNE</u>		Driller <u>G RODRIGUEZ</u>		Date started <u>10-23-91</u> completed <u>10-23-91</u>	
Method <u>DUAL WALL</u>	Casing Size <u>9" O.D</u>	HAU <u>11.71/0.2</u>	Protection Level <u>D</u>		
Ground El	Soil Drilled <u>200</u>	± below ground <u>10'</u>		Total Depth <u>200'</u>	
Logged by <u>JRR</u>		Checked by <u>DRP</u>		Date <u>10/26/91</u>	

Sample No	Depth in Feet	Blows per 6 inches	Pen Rec	Description	HAU or	Comments on Advance of Boring	Monitoring	
							HAU	EL
	170-180			LT BROWN SAND, WGS, M-C, LITTLE F, LITTLE F GRAVEL, TR SILT	(SW)	WATER IS DARK BROWN DUE TO SILT CONTENT	0	C
	180-190			SAME AS ABOVE	(SW)		0	C
	190-200			SAME AS ABOVE CHANGING TO LT BROWN SAND, FGD. M-F, LITTLE C	(SP)		0	C

BOE = 200' BGS

FIELD BORING LOG			Boring No. <u>PSN-91-12</u>	
Project: <u>NO6853-03</u>   Project Name: <u>TRACER AAP</u>		Page <u>1</u> of <u>3</u>		
Contractor: <u>LAYNE</u>		Driller: <u>G. RODRIGUEZ</u>	Date started: <u>10-15-91</u> completed: <u>10-16-91</u>	
Method: <u>DUALWALL</u>	Casing Size: <u>9" O.D.</u>	HNU: <u>11.7/10.2</u>	Protection Level: <u>D</u>	
Ground El:	Soil Drilled: <u>231'</u>	± below ground: <u>10'</u>	Total Depth: <u>231.0</u>	
Logged by: <u>KRIC</u>		Checked by: <u>DRP</u>	Date: <u>10/24/91</u>	

Sample No	Depth in Feet	Blows per 6 inches	Pen rec	Description	Comments on Advance of Boring	Monitoring	
						HNU	TEL
S-1	0-10'			0-5': <u>BROWN SILT</u> , PGD, LITTLE F SANDS, TR COBBLES COHESIVE 5-10': <u>LT BROWN SAND</u> , WGD, M, SOME F SAND, SOME C, LITTLE F GRAVEL, TR COBBLES	(ML)  (SW)	0	0
S-2	10-20'			<u>LT BROWN SAND</u> , WGD, M-C, SOME F, LITTLE F GRAVEL, TR COBBLES, TR SILT.	(SW)	0	0
S-3	20-30'			<u>LT BROWN SAND</u> , M-C, PGD, LITTLE F, TR F GRAVEL	(SP)	0	0
S-4	30-40'			<u>LT BROWN SAND</u> , FBOR TO MOD GRADED, SIMILAR TO S-3. THIN INTERBEDS OF GRAVEL.	(SP)	0	0
S-5	40-50'	40-47':		<u>LT BROWN SAND</u> , PGD, M, SOME C, LITTLE F, TR F GRAVEL.	(SP)	0	0
		47-50':		<u>BROWN SANDY GRAVEL</u> WGD, F, LITTLE C (RR) <del>SAND: SOME C, M, SOME F, SOME M, LITTLE F</del>	✓ (GW)	0	0
S-6	50-60'	50-55':		SAME AS 47-50'		0	0
		55-60':		<u>LT BROWN GRAVELY SANDS</u> , WGD, C, SOME M, LITTLE F, GRAVEL: FINE, TR C GRA, TR SILT.	(SW)	0	0
S-7	60-70'			<u>LT BROWN SAND</u> , WGD, C, SOME M, SOME F GRV, LITTLE F SAND, TR SILT, TR COBBLES.	(SW)	0	0

FIELD BORING LOG				Boring No. PBW-91-	
Project: NOC653-03		Project Name: BARCLER AAP		Page 2 of 3	
Contractor: LAYNE		Driller: G. RODRIGUEZ		Date started: 10-25-91 completed: 10-16-91	
Method: WALL WALL		Casing Size: 9" O.D.		HNU: 11.7102	
Ground El:		Soil Drilled: 231'		± below ground/bi: Total Depth: 231'	
Logged by: TCR		Checked by: DRP		Date: 10/24/91	

Sample No	Depth in Feet	Blows per 6 inches	Pen rec	Description	Comments on Advance of Boring	Monitoring	
						HNU	LE
S-8	70'-80'	70	77'	LT BROWN SAND, PUD, C, SOME M, TR F SAND.	(SP)	0	GARAGE
		77	80	LT BROWN SAND, WGD, C, SOME F GRAVEL, LITTLE M SAND, TR COBBLE, TR F SAND, TR SILT.	(SW)		
S-9	80-90'			LT BROWN SAND, PUD, GRADING FROM M TO F W/ DEPTH, LITTLE TO TR C SAND, TR COBBLES, LITTLE SILT.	(SP) CHANGE BITS	0	
S-10	90-100'			LT BROWN SAND, PUD, F, LITTLE M, LITTLE SILT, TR C, WLT	(SP) 101'	0	
S-11	100-110'			LT BROWN SAND, PUD, F, LITTLE SILT, LITTLE M SANDS	(SP)	0	
S-12	110-120			SAME AS 100-110'	(SP)	0	
S-13	120-130			LT BROWN SAND, PUD, M, SOME F, LITTLE C, TR F GRAVEL	(SP) START PUMPING	0	
S-14	130-140			BROWN SANDY GRAVEL, WGD, F, LITTLE C GRAVEL GRADING TO SOME C GRAVEL. SAND: C, LITTLE M, LITTLE SILT, TR COBBLES.	(FW) WATER HAS BROWN COLOR	0	
S-15	140-150			LT BROWN SAND, WGD, C, SOME M, LITTLE F GRAVEL, TR F SAND, TR SILT	(SW)	0	
S-16	150-160	150-155		SAME AS 140-150	(SW)	0	
		155-160		LT BROWN SAND, WGD, C, LITTLE M, SOME F GRAVEL, TR F SAND, TR SILT			
S-17	160-170			SAME AS 155-160	(SW)	0	
S-18	170-180			LT BROWN SAND, WGD, C, SOME M, LITTLE F GRAVEL, TR F SAND, TR SILT	(SW)	0	
S-19	180-190			SAME AS S-19	(SW)	0	

FIELD BORING LOG			Boring No. PBW-91-126	
Project No 06453-03		Project Name TSANGLER AAP		Page 3 of 3
Contractor LAYNE		Driller G RODRIGUEZ		Date started 10-15-91 completed 10-16-91
Method DUAL WALL		Casing Size 9" O.D.	MNU 11.7110.2	Protection Level 8
Ground El		Soil Drilled 231'	2 below ground 101'	Total Depth 231'
Logged by KRR		Checked by DRP		Date 10/24/91

Sample No	Depth in Feet	Blows per 6 inches	Pen Rec	Description	Comments on Advance of Boring	Monitoring	
						MNU	LE
S-20	190-200			SAME AS S-18		JAR	ATR
S-21	200-210			LT BROWN SAND, P.G.D, M-C TR F GRAVEL, TR F SAND TR SILT	(S)	0	
S-22	210-220		210-216 216-220	SAME AS S-21 BROWN GRAVELY SAND, W.G.D. C. SOME M, TR F, TR SILT TR COBBLES. GRAVEL: F, LITTLE C	(S)	0	
S-23	220-230			LT BROWN SAND, W.G.D, M-C SOME F GRAVEL, TR SILT LITTLE F SAND, TR C GRAVEL	PROBLEM WITH HEAVING SANDS (SW)	0	
				BOE = 231'			



# FIELD BORING LOG

BORING NO. PBM-89-07

PROJECT NO.: 5753-	PROJECT NAME: USATHAMA- BAAP	PAGE 1	OF 1
DRILLING CONTRACTOR: LAYNE-NORTHWEST	DRILLER: Dallas	DATE STARTED 3/2/89	COMPLETED 3/3
METHOD: HSA	CASING SIZE: 6.25"	TIP EV:	PROTECTION LEVEL: D
GROUND ELEV.: 846.6	SOIL DRILLED: 95 feet	WATER LEVEL: 77.2 feet bgs	TOTAL DEPTH: 95 feet
LOGGED BY: B.K.B.	CHECKED BY:	DATE:	

SAMPLE NO.	DEPTH : FEET	BLOWS PER 6-INCHES	PEN.		DESCRIPTION	COMMENTS ON ADVANCE OF BORING	MONITOR	
			REC.				TOP	
					0-2' bgs: black organic rich <u>topsoil</u> .			
					2-14' bgs: brown, sticky silt and fine sand. Moist <u>LOESS</u>			
					14-95' Well to Poorly graded fine to med. sand with little gravel - <u>outwash</u>			
					Note overdrilled to 110'			

FIELD BORING LOG

BORING NO. FSN-27-12B

PROJECT NO.: 5753 | PROJECT NAME: USATHAMA- BAAP | PAGE 1 OF 2  
 DRILLING CONTRACTOR: LAYNE-NORTHWEST | DRILLER: G. Rodriguez | DATE STARTED 4/14/89 | COMPLETED 4/15/89  
 METHOD: AP-1000 | CASING SIZE: 9 in | TIP SV: | PROTECTION LEVEL: D  
 GROUND ELEV.: 85.6 | SOIL DRILLED: 140 ft | WATER LEVEL: 85 ft | TOTAL DEPTH: 140 ft  
 LOGGED BY: JAE | CHECKED BY: SJP 4/26/89 | DATE: 4/14/89

SAMPLE NO.	DEPTH IN FEET	BLOWS PER 5-INCHES	PEN. REC.	DESCRIPTION	COMMENTS ON ADVANCE OF BORING	MONITORING	
						TIP	CEL
S1	0-10 ft			light brown to tan fm-coarse SAND w/ little fine angular gravel + silt. Dry	0-5.0 TOP SOIL		0.0
S2	10-20			light brown fm-med SAND w/ little coarse sand + fm-med Gravel - Moist. (SP)			0.0
S3	20-30			Tan fine SAND w/ trace coarse sand + fine gravel slightly moist. (SP)			0.0
S4	30-40			Same as S3 (SP)			0.0
S5	40-50			Same as S3 dry (SP)			0.0
S6	50-60			light brown fm-med SAND w/ little coarse sand + fine gravel. slightly moist-dry (SP)			0.0
S7	60-70			Same as S6 (SP)			0.0
S8	70-80			light brown fm-med SAND, occasional Gravel (SP) slightly moist-dry			0.0
S-9	80-90			light brown med-coarse SAND w/ Gravel + some fm sand. dry grading to moist-wet below 25 ft. (SP)			0.0

FIELD BORING LOG

BORING NO. SN-39-122

PROJECT NO.: 5753-00 PROJECT NAME: USATHAMA-BAAP PAGE 2 OF 2  
 DRILLING CONTRACTOR: LAYNE-NORTHWEST DRILLER: Bill Melhorne DATE STARTED 4/14/89 COMPLETED 4/16  
 METHOD: AP-1000 CASING SIZE: 9" TIP SV: PROTECTION LEVEL: D  
 GROUND ELEV.: 88.6 SOIL DRILLED: 140' WATER LEVEL: 85' TOTAL DEPTH: 140'  
 LOGGED BY: B.S. CHECKED BY: J.P. DATE: 4/26/89

SAMPLE NO.	DEPTH IN FEET	BLOCS PER 6-INCHES	PEN. REC.	DESCRIPTION	COMMENTS ON ADVANCE OF BORING	MONITOR	
						TIP	LOG
S 10	90-100			Brown Fine-med SAND Trace Crse Sand WET (SP)			CC
S 11	100-110			Same as S 10	(SP)		
S 12	110-120			Same as S 10	(SP)		
S 13	120-130			Same as S 10	(SP)		
S 14	130-140			Same as S 10 130-133 133-140 Crse SAND and Sn-Crse Gravel (SP)			
				140' BOE			

FIELD BORING LOG

BORING NO. PBN-89-04C

PROJECT NO.: 5753-08 | PROJECT NAME: USATHAMA-BAAP | PAGE 1 OF 2  
 DRILLING CONTRACTOR: LAYNE-NORTHWEST | DRILLER: G. ROQUEZ | DATE STARTED 4/15/89 | COMPLETED 4/16/89  
 METHOD: AP-1000 <sup>DUAL WALL</sup> | CASING SIZE: 9.0" | TIP EV: TE 10.6EV | PROTECTION LEVEL: D  
 GROUND ELEV.: 857.7 | SOIL DRILLED: 190' | WATER LEVEL: ± 87' | TOTAL DEPTH: 190'  
 LOGGED BY: BUSS | CHECKED BY: JSL | DATE: 4/26/89

SAMPLE NO.	DEPTH IN FEET	BLOWS PER 6-INCHES	PEN.		DESCRIPTION	COMMENTS ON ADVANCE OF BORING	MONITORING	
			REV.	REC.			TIP	REL.
S#1	0-10				Black organic silty topsoil and Brown silt (loess) to SST, Tan Sn Sand wt/ occ gravel to DST moist	TIP BKgd = 0.0-0.5		0.1
S#2	10-20				Sn-med SAND wt/ some crse sand + Sn-med gravel dry-moist (SP)			0.0
S#3	20-30				Tan Sn-med SAND wt occasional gravel (well rounded) dry-moist. (SP)			0.2
S#4	30-40				Same as S#3 (SP)			0.0
S#5	40-50				Same as S#3 (SP)			0.1
S#6	50-60				light brown Sn-Crse Sand wt/ Trace fine gravel dry-moist (SP)	↓ coarsening downward		0.3
S#7	60-70				brown Med to Crse SAND wt/ some Sn Sand + Trace fine gravel (SP)	↓		0.1
S#8	70-80				brown Med-Crse Sand and Med to Crse Gravel well rounded dry-moist (SP)	↓		0.0
S#9	80-90				brown Med Sand wt some Crse Sand + occ. gravel + fine Sand (SP)			0.0

FIELD BORING LOG

BORING NO. PBN-89-042

PROJECT NO.: 5753-06 | PROJECT NAME: USATHAMA-BAAP | PAGE 2 OF 2  
 DRILLING CONTRACTOR: LAYNE-NORTHWEST | DRILLER: G. RODRIGUEZ | DATE STARTED 4/15/89 | COMPLETED 4/15  
 METHOD: AP-1000 | CASING SIZE: 9" | TIP EV: TE 10.6CV | PROTECTION LEVEL: D  
 GROUND ELEV.: 857.7 | SOIL DRILLED: 190' | WATER LEVEL: ~87 ft | TOTAL DEPTH: 190'  
 LOGGED BY: Bues | CHECKED BY: JRL 4/26/89 | DATE: 4/15/89

SAMPLE NO.	DEPTH IN FEET	BLOWS PER 6-INCHES	PEN. REC.	DESCRIPTION	COMMENTS ON ADVANCE OF BORING	MONITOR.	
						TIP	LE
S 10	90-100			Same as S#9 wet (SP)		0.0	
S 11	100-110			Brown fn-med SAND Tree silt. (SP)		0.0	
S# 12	110-120			Same as S#11 (SP)		0.0	
S# 13	120-130			Same as S#11 (SP)		0.0	
S# 14	130-140			brown fn-med SAND w/ occasional angular gravel cobbles at 140 ft	v change @ 140	0.0	
S# 15	140-150			Coarse - fn. Gravel w/ cobbles + a little <del>sa</del> crse Sand wet. (SP)		0.0	
S# 16	150-160			Coarse Sand and gravel to 155 ft grades to Brown med-fn SAND w/ Tree crse SAND (SP)	v change @ 165'	0.0	
S# 17	160-170			Brown Med-fn SAND with some crse Sand and fine gravel at 168-170 ft. (SP)		0.0	
S# 18	<del>165-170</del> 170-180			Brown fine Sand with some Med. Sand + Tree silt. (SP)		0.0	
S# 19	180-190			Brown Med Sand w/ some fine crse Sand + occasional gravel. (SP)		0.0	

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

(The proponent of this form is HSHB-ES)

PROJECT Badger AAP DATE 28 Sep 85  
 LOCATION South of Procellant DRILLERS 20th Eng Bde.  
Burning Ground Geologist - Fox  
 DRILL RIG Failing 1500 BORE HOLE PBM-85-05

(Feet) DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
0		Silt, dark brown	
		Silt, with clay and sand, fine grained, tan	
10		Sand, medium to coarse grained, with gravel	
20			
		Sand, medium to coarse grained and fine gravel	
30			

AEHA Form 130, 1 Nov 82

Replaces HSHB Form 18, 1 Jun 80, which will be used.

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

(The proponent of this form is HSHB-ES)

PROJECT Badger AAP DATE 28 Sep 85  
 LOCATION South of Propellant DRILLERS 20th Eng Bde.  
Burning Ground Geologist - Fox  
 DRILL RIG Failing 1500 BORE HOLE PBM-85-05

(Feet) DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
30		Same as above	
40		Coarse to fine gravel, and sand, medium to coarse grained	
50			
60		Gravel, coarse to fine, sand, fine to coarse grained and occasional cobbles	

AEHA Form 130, 1 Nov 82

Replaces HSHB Form 78, 1 Jun 80, which will be used.

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

(The predecessor of this form is MSHB-ES)

PROJECT Badger AAP DATE 28 Sep 85  
 LOCATION South of Propellant DRILLERS 20th Eng Bde.  
Burning Ground Geologist - Fox  
 DRILL RIG Falling 1500 BORE HOLE PBM-85-05

(Feet) DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
60			
		Gravel, coarse to fine and sand coarse to fine grained	
70			
80			
		Sand, fine to coarse grained with fine gravel	
90			

AEHA Form 130, 1 Nov 82

Replaces MSHB Form 78, 1 Jun 80, which will be used.



US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

*(The proponent of this form is HSMB-ES)*

PROJECT Badger AAP DATE 28 Sep 85  
 LOCATION South of Propellant DRILLERS 20th Eng Bde.  
Burning Ground Geologist - Fox  
 DRILL RIG Failing 1500 BORE HOLE PBM-85-05

(Feet) DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
90		Same as above	
100			
110		Bottom of Hole	
120			

AEHA Form 130, 1 Nov 82

*Replaces HSMB Form 78, 1 Jun 80, which will be used.*

Facility/Project Name <b>BADGER AAP</b>	Grid Location ft. <input type="checkbox"/> N. <input type="checkbox"/> S. ft. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name <b>PBP-91-01B</b>
Factory License, Permit or Monitoring Number		Well Unique Well Number
Type of well Water Table Observation Well <input type="checkbox"/> II Piezometer <input checked="" type="checkbox"/>	Section Location <b>NE 1/4 of NW 1/4 of Section 23</b>	Date well installed <b>10/13/91</b>
Distance well is from waste source boundary <b>NA</b> ft.	T <input checked="" type="checkbox"/> N <input type="checkbox"/> R <input type="checkbox"/> W <input type="checkbox"/> E <input type="checkbox"/> W	Well installed by: (Person's Name and Firm) <b>G. RODRIGUEZ</b>
Is well a point of enforcement out Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of well relative to waste source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidewater <input checked="" type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	<b>LAYNE</b>

A. Protective pipe, top elevation <b>850.60</b> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <b>850.53</b> ft. MSL	2. Protective cover pipe: a. Inside diameter: <b>06.00</b> b. Length: <b>06.00</b> c. Material: <b>Steel</b>
C. Land surface elevation <b>848.3</b> ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: <b>BUCKING POSTS</b>
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: <b>Bentonite</b> <input type="checkbox"/> <b>Concrete</b> <input checked="" type="checkbox"/> <b>Other</b> <input type="checkbox"/>
12. USCS classification of soil near screen: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input checked="" type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	4. Material between well casing and protective pipe: <b>Bentonite</b> <input type="checkbox"/> <b>Annular space seal</b> <input checked="" type="checkbox"/> <b>Other</b> <input type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: ____ Lbs/gal mud weight ... <b>Bentonite-sand slurry</b> <input type="checkbox"/> ____ Lbs/gal mud weight ... <b>Bentonite slurry</b> <input type="checkbox"/> <b>10 % Bentonite</b> ... <b>Bentonite-cement grout</b> <input type="checkbox"/> <b>150</b> Ft <sup>3</sup> volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 <b>DUAL WALL</b> Other <input type="checkbox"/>	How installed: <b>Tremie pumped</b> <input type="checkbox"/> <b>Gravity</b> <input checked="" type="checkbox"/>
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	6. Bentonite seal: <b>Bentonite granules</b> <input type="checkbox"/> <b>1/4 in. 3/8 in. 1/2 in. Bentonite pellets</b> <input type="checkbox"/> <b>BENTONITE POWDER</b> Other <input type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe <b>N/A</b>	7. Fine sand material: Manufacturer, product name and mesh size Volume added _____ ft <sup>3</sup>
17. Source of water (attach analysis): <b>PRODUCED WELL #2</b>	8. Filter pack material: Manufacturer, product name and mesh size <b>COLORADO SILICA SAND #4</b> Volume added <b>16</b> ft <sup>3</sup>
E. Bentonite seal, top _____ ft. MSL or _____ ft.	9. Well casing: <b>Flush threaded PVC schedule 40</b> <input checked="" type="checkbox"/> 20 <b>Flush threaded PVC schedule 50</b> <input type="checkbox"/> 24 Other <input type="checkbox"/>
F. Fine sand, top _____ ft. MSL or _____ ft.	10. Screen material: <b>SCU 40 PVC</b> Screen type: <b>Factory cut</b> <input checked="" type="checkbox"/> 11 <b>Continuous slot</b> <input type="checkbox"/> 01 Other <input type="checkbox"/>
G. Filter pack, top <b>724.3</b> ft. MSL or <b>124.0</b> ft.	Manufacturer <b>TIMCO</b> Slot size: <b>0.010</b> in. Slotted length: <b>12.0</b> ft.
H. Well screen, top <b>714.3</b> ft. MSL or <b>134.0</b> ft.	11. Backfill material (below filter pack): <b>None</b> <input checked="" type="checkbox"/> Other <input type="checkbox"/>
I. Well screen, bottom <b>704.3</b> ft. MSL or <b>144.0</b> ft.	
J. Filter pack, bottom <b>704.3</b> ft. MSL or <b>144.0</b> ft.	
K. Borehole, bottom <b>593.5</b> ft. MSL or <b>253.0</b> ft.	
L. Borehole, diameter <b>09.0</b> in.	
M. O.D. well casing <b>04.35</b> in.	
N. I.D. well casing <b>04.10</b> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature *[Handwritten Signature]*

Firm **ABB-ES**

Facility/Project Name <u>RANGER AAP</u>	Grid Location ft. <input type="checkbox"/> N. <input type="checkbox"/> S. ft. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name <u>PBP-91-01C</u>
Facility License, Permit or Monitoring Number		Well Unique Well Number <u>01C</u>
Type of well: Water Table Observation Well <input type="checkbox"/> II Piezometer <input checked="" type="checkbox"/> II	Section Location <u>NE 1/4 of NW 1/4 of Section 23</u>	Date well installed <u>10/13/91</u>
Distance well is from waste/source boundary <u>NA</u> ft.	T. <u>10</u> N. <u>6</u> E. <input type="checkbox"/> W. <input type="checkbox"/>	Well installed by: (Person's Name and Firm) <u>G. RODRIGUEZ</u>
Is well a Point of Enforcement Dist. Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of well relative to Waste/Source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input checked="" type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	<u>LAYNE</u>

A. Protective pipe, top elevation 350.60 ft. MSL

B. Well casing, top elevation 850.53 ft. MSL

C. Land surface elevation 848.3 ft. MSL

D. Surface seal bottom \_\_\_\_\_ ft. MSL or \_\_\_\_\_ ft.

1. Cap and lock?  Yes  No

2. Protective cover pipe:  
a. Inside diameter: 0.0  
b. Length: 0.0  
c. Material: Steel  
d. Additional protection?  Yes  No  
If yes, describe: Buckling Posts

3. Surface seal: Bentonite  
Concrete  
Other

4. Material between well casing and protective pipe:  
Bentonite  
Annular space seal  
Other

5. Annular space seal:  
Granular Bentonite  
Lbs/gal mud weight: \_\_\_\_\_ Bentonite sand slurry  
Lbs/gal mud weight: \_\_\_\_\_ Bentonite slurry  
10 % Bentonite \_\_\_\_\_ Bentonite-cement grout  
150 Ft<sup>3</sup> volume added for any of the above  
How installed: Tremie  
Tremie pumped  
Gravity

6. Bentonite seal: Bentonite granules  
 1/4 in.  3/8 in.  1/2 in. Bentonite pellets  
BENTONITE POWDER Other

7. Fine sand material: Manufacturer, product name and type  
Volume added \_\_\_\_\_ ft<sup>3</sup>

8. Filter pack material: Manufacturer, product name and type  
COLORADO SILICA SAND #4  
Volume added 10 ft<sup>3</sup>

9. Well casing: Flush threaded PVC schedule 40  
Flush threaded PVC schedule 30  
Other

10. Screen material: SCH 40 PVC  
Screen type: Factory cut  
Continuous slot  
Other

11. Backfill material (below filter pack): None  
Other

12. USCS classification of soil near screen:  
 GP  GM  GC  GW  SW  SP  
 SM  SC  ML  MH  CL  CH  
 Bedrock

13. Sieve analysis attached?  Yes  No

14. Drilling method used: Rotary  50  
Hollow Stem Auger  41  
DUAL WALL Other  \_\_\_\_\_

15. Drilling fluid used: Water  02 Air  01  
Drilling Mud  03 None  99

16. Drilling additives used?  Yes  No

Describe \_\_\_\_\_

17. Source of water (attach analysis):  
PRODUCTION WELL #2

E. Bentonite seal top 688.3 ft. MSL or 160.0 ft.

F. Fine sand, top \_\_\_\_\_ ft. MSL or \_\_\_\_\_ ft.

G. Filter pack top 678.3 ft. MSL or 170.0 ft.

H. Well screen top 668.3 ft. MSL or 180.0 ft.

I. Well screen bottom 658.3 ft. MSL or 190.0 ft.

J. Filter pack bottom 658.3 ft. MSL or 190.0 ft.

K. Borehole bottom 595.3 ft. MSL or 253.0 ft.

L. Borehole diameter 0.90 in.

M. O.D. well casing 0.25 in.

N. I.D. well casing 0.10 in.

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [Signature] Date ABB-ES

Facility/Project Name <b>TSADGER AAP</b>	Grid Location ft. <input type="checkbox"/> N. <input type="checkbox"/> S. ft. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name <b>PTBP-91-01D</b>
Factory License, Permit or Monitoring Number		Well Unique Well Number
Type of Well Water Table Observation Well <input type="checkbox"/> II Piezometer <input checked="" type="checkbox"/> II	Section Location <b>NE 1/4 of NW 1/4 of Section 23</b>	Date well installed <b>10/13/91</b>
Distance well is from watersource boundary <b>NA</b> ft.	T <b>10</b> N <b>R 10</b> <input type="checkbox"/> E <input type="checkbox"/> W	Well installed by: (person's Name and firm) <b>G. RODRIGUEZ</b>
Is Well A Point of Enforcement or Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of well relative to waste/source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input checked="" type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	<b>LAYNE</b>

A. Protective pipe, top elevation <b>850.60</b> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <b>850.53</b> ft. MSL	2. Protective cover pipe: a. Inside diameter: <b>06.00</b> b. Length: <b>06.00</b> c. Material: <b>Steel</b>
C. Land surface elevation <b>848.3</b> ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: <b>BUCKING POSTS</b>
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: <b>Bentonite</b> <input type="checkbox"/> <b>Concrete</b> <input checked="" type="checkbox"/> <b>Other</b> <input type="checkbox"/>
12. USCS classification of soil near screen: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input checked="" type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	4. Material between well casing and protective pipe: <b>Bentonite</b> <input type="checkbox"/> <b>Annular space seal</b> <input checked="" type="checkbox"/> <b>Other</b> <input type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: <b>Granular Bentonite</b> <input type="checkbox"/> <b>Lbs/gal mud weight</b> _____ <b>Bentonite sand slurry</b> <input type="checkbox"/> <b>Lbs/gal mud weight</b> _____ <b>Bentonite slurry</b> <input type="checkbox"/> <b>10 % Bentonite</b> _____ <b>Bentonite-cement grout</b> <input checked="" type="checkbox"/> <b>150</b> Ft <sup>3</sup> volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 <b>DUAL WALL</b> Other <input checked="" type="checkbox"/>	How installed: <b>Frame</b> <input type="checkbox"/> <b>Frame pumped</b> <input type="checkbox"/> <b>Gravity</b> <input checked="" type="checkbox"/>
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	6. Bentonite seal: <b>Bentonite granules</b> <input type="checkbox"/> <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. <b>Bentonite pellets</b> <input type="checkbox"/> <b>BENTONITE POWDER</b> Other <input checked="" type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7. Fine sand material: Manufacturer, product name and mesh size Volume added _____ ft <sup>3</sup>
Describe _____	8. Filter pack material: Manufacturer, product name and mesh size <b>COLORADO SILICA SAND #4</b> Volume added <b>16</b> ft <sup>3</sup>
17. Source of water (attach analysis): <b>#2 PRODUCTION PUMP</b>	9. Well casing: <b>Flush threaded PVC schedule 40</b> <input checked="" type="checkbox"/> 20 <b>Flush threaded PVC schedule 30</b> <input type="checkbox"/> 24 <b>Other</b> <input type="checkbox"/>
E. Bentonite seal, top <b>627.3</b> ft. MSL or <b>221.0</b> ft.	10. Screen material: <b>SCH 40 PVC</b> Screen type: <b>Factory cut</b> <input checked="" type="checkbox"/> 17 <b>Continuous slot</b> <input type="checkbox"/> 01 <b>Other</b> <input type="checkbox"/>
F. Fine sand, top _____ ft. MSL or _____ ft.	Manufacturer <b>TIMCO</b> Slot size: <b>0.0100</b> Slotted length: <b>10.95</b>
G. Filter pack, top <b>617.3</b> ft. MSL or <b>231.0</b> ft.	11. Backfill material (below filter pack): <b>None</b> <input checked="" type="checkbox"/> <b>Other</b> <input type="checkbox"/>
H. Well screen, top <b>605.8</b> ft. MSL or <b>242.5</b> ft.	
I. Well screen, bottom <b>595.8</b> ft. MSL or <b>252.5</b> ft.	
J. Filter pack, bottom <b>595.3</b> ft. MSL or <b>253.0</b> ft.	
K. Borehole, bottom <b>595.3</b> ft. MSL or <b>253.0</b> ft.	
L. Borehole, diameter <b>9.0</b> in.	
M. O.D. well casing <b>1.25</b> in.	
N. I.D. well casing <b>1.10</b> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.  
Signature \_\_\_\_\_ Firm \_\_\_\_\_

Facility/Project Name <b>BADGER AAP</b>	Grid Location ft. <input type="checkbox"/> N. <input type="checkbox"/> S.	Well Name <b>PBP-91-028</b>
Factory License, Permit or Monitoring Number	ft. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Unique Well Number
Type of Well Water Table Observation Well <input type="checkbox"/> <input checked="" type="checkbox"/> Piezometer	Section Location <b>NE 1/4 of NW 1/4 of Section 25</b>	Date well installed <b>10/15/96</b>
Distance well is from waste source boundary <b>N/A</b> ft.	T <b>10</b> N. R. <b>6</b> <input checked="" type="checkbox"/> E <input type="checkbox"/> W	Well installed by: (Person's Name and Firm) <b>G. RODRIGUEZ</b>
Is well a Point of Enforcement Site Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of Well relative to Waste/Source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input checked="" type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	<b>LAYNE</b>

A. Protective pipe, top elevation <b>850.10</b> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes
B. Well casing, top elevation <b>850.09</b> ft. MSL	2. Protective cover pipe: a. Inside diameter: _____ b. Length: _____ c. Material: _____
C. Land surface elevation <b>847.6</b> ft. MSL	d. Additional protection? <input checked="" type="checkbox"/> Yes If yes, describe: <b>BACKFILL POSTS</b>
D. Surface seal bottom _____ ft. MSL or _____ ft.	3. Surface seal: _____ Concrete <input type="checkbox"/> Other <input type="checkbox"/>
12. USCS classification of soil near screen: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input checked="" type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> Annular space seal <input type="checkbox"/> Other <input type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: Granular Bentonite <input type="checkbox"/> Lbs/gal mud weight: _____ Bentonite-sand slurry Lbs/gal mud weight: _____ Bentonite slurry <b>10%</b> Bentonite _____ Bentonite-cement grout <b>150</b> Ft <sup>3</sup> volume added for any of the above How installed: _____ Tremie <input type="checkbox"/> Tremie pumped <input type="checkbox"/> Gravy <input type="checkbox"/>
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 <b>DUAL WALL</b> Other <input type="checkbox"/>	6. Bentonite seal: _____ Bentonite granules <input type="checkbox"/> <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <b>BENTONITE POWDER</b> Other <input type="checkbox"/>
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	7. Fine sand material: _____ Manufacturer, product name and _____ Volume added _____ ft <sup>3</sup>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	8. Filter pack material: _____ Manufacturer, product name and _____ <b>COLORADO SILICA SAND</b> Volume added <b>10</b> ft <sup>3</sup>
Describe _____	9. Well casing: _____ Flush threaded PVC schedule 40 <input type="checkbox"/> Flush threaded PVC schedule 30 <input type="checkbox"/> Other <input type="checkbox"/>
17. Source of water (attach analysis): <b>PRODUCTION WELL #2</b>	10. Screen material: <b>SCH 40 PVC</b> Screen type: _____ Factory cut <input type="checkbox"/> Continuous slot <input type="checkbox"/> Other <input type="checkbox"/>
E. Bentonite seal, top <b>NONE</b> ft. MSL or <b>NONE</b> ft.	Manufacturer <b>TIMCO</b> Slot size: _____ Slotted length: _____
F. Fine sand, top <b>NONE</b> ft. MSL or <b>NONE</b> ft.	11. Backfill material (below filter pack): _____ None <input type="checkbox"/> Other <input type="checkbox"/>
G. Filter pack, top <b>727.6</b> ft. MSL or <b>120.0</b> ft.	
H. Well screen, top <b>717.3</b> ft. MSL or <b>130.3</b> ft.	
I. Well screen, bottom <b>707.3</b> ft. MSL or <b>140.3</b> ft.	
J. Filter pack, bottom <b>706.6</b> ft. MSL or <b>141.0</b> ft.	
K. Borehole, bottom <b>594.1</b> ft. MSL or <b>253.5</b> ft.	
L. Borehole, diameter <b>09.0</b> in.	
M. O.D. well casing <b>01.25</b> in.	
N. I.D. well casing <b>01.00</b> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Paul R. [Signature] Firm: ABB-ES

Factory/Project Name <b>BADGER AAP</b>	Grid Location ft. <input type="checkbox"/> N. <input type="checkbox"/> S. ft. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name <b>PISP-91-02C</b>
Factory License Number or Monitoring Number		Well Unique Well Number
Type of Well: Water Table Observation Well <input type="checkbox"/> II Piezometer <input checked="" type="checkbox"/>	Section Location <b>NE 1/4 of SW 1/4 of Section 23</b>	Date well installed <b>10/14/91</b>
Distance well is from water source boundary <b>NA</b> ft.	T <u>10</u> N <u>3</u> E <u>6</u> W	Well installed by: (Person's Name and Firm) <b>G. RODRIGUEZ</b>
Is well a Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of Well relative to Waste Source: <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	<b>LAYNE</b>

A. Protective pipe, top elevation <b>850.20</b> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <b>850.09</b> ft. MSL	2. Protective cover pipe: a. Inside diameter: <b>06.00</b> b. Length: <b>06.00</b> c. Material: <b>Steel</b>
C. Land surface elevation <b>847.6</b> ft. MSL	d. Additional protection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: <b>BURNING POSTS</b>
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: <b>Bentonite</b> <input type="checkbox"/> <b>Concrete</b> <input checked="" type="checkbox"/> <b>Other</b> <input type="checkbox"/>
12. USCS classification of soil near screen: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input checked="" type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	4. Material between well casing and protective pipe: <b>Bentonite</b> <input type="checkbox"/> <b>Annular space seal</b> <input checked="" type="checkbox"/> <b>Other</b> <input type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: <b>Granular Bentonite</b> <input type="checkbox"/> <b>Lbs/gal mud weight . . . . . Bentonite-sand slurry</b> <input type="checkbox"/> <b>Lbs/gal mud weight . . . . . Bentonite slurry</b> <input type="checkbox"/> <b>10 % Bentonite . . . . . Bentonite-cement grout</b> <input checked="" type="checkbox"/> <b>150</b> Ft <sup>3</sup> volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 <b>DUAL WALL</b> Other <input type="checkbox"/>	How installed: <b>Tremie</b> <input type="checkbox"/> <b>Tremie pumped</b> <input type="checkbox"/> <b>Gravity</b> <input checked="" type="checkbox"/>
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	6. Bentonite seal: <b>Bentonite granules</b> <input type="checkbox"/> <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> <b>BENTONITE POWDER</b> <input checked="" type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7. Fine sand material: <b>Manufacturer, product name and mesh size</b> <b>Volume added _____ ft<sup>3</sup></b>
Describe _____	8. Filter pack material: <b>Manufacturer, product name and mesh size</b> <b>COLORADO SILICA SAND</b> <b>Volume added 16 ft<sup>3</sup></b>
17. Source of water (attach analysis): <b>PRODUCTION WELL #2</b>	9. Well casing: <b>Flush threaded PVC schedule 40</b> <input checked="" type="checkbox"/> <b>Flush threaded PVC schedule 30</b> <input type="checkbox"/> <b>Other</b> <input type="checkbox"/>
E. Bentonite seal, top <b>687.6</b> ft. MSL or <b>160.0</b> ft.	10. Screen material: <b>5cm 40 PVC</b> Screen type: <b>Factory cut</b> <input checked="" type="checkbox"/> <b>Continuous slot</b> <input type="checkbox"/> <b>Other</b> <input type="checkbox"/>
F. Fine sand, top _____ ft. MSL or _____ ft.	Manufacturer <b>TYMCO</b> Slot size: <b>0.018 in</b> Slot length: <b>18.00</b>
G. Filter pack, top <b>677.6</b> ft. MSL or <b>170.0</b> ft.	11. Backfill material (below filter pack): <b>None</b> <input checked="" type="checkbox"/> <b>Other</b> <input type="checkbox"/>
H. Well screen, top <b>667.3</b> ft. MSL or <b>180.3</b> ft.	
I. Well screen, bottom <b>657.3</b> ft. MSL or <b>190.3</b> ft.	
J. Filter pack, bottom <b>657.0</b> ft. MSL or <b>190.0</b> ft.	
K. Borehole, bottom <b>594.1</b> ft. MSL or <b>253.5</b> ft.	
L. Borehole, diameter <b>09.0</b> in.	
M. O.D. well casing <b>01.35</b> in.	
N. I.D. well casing <b>01.10</b> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: **Paul R. Kumbow** Firm: **ATSS-ES**

Facility/Project Name <u>BADGER LAMP</u>	Grid Location ft. <input type="checkbox"/> N <input type="checkbox"/> S	Well Name <u>PBP-91-02D</u>
Facility License, Permit or Monitoring Number	ft. <input type="checkbox"/> E <input type="checkbox"/> W	Well Unique Well Number
Type of Well Water Table Observation Well <input type="checkbox"/> II Piezometer <input checked="" type="checkbox"/> II	Section Location <u>NE 1/4 of 447/4 of Section 23</u>	Date well installed <u>10/14/91</u>
Distance Well is from water source boundary <u>NA</u> ft.	T <u>10</u> N <u>10</u> E <input type="checkbox"/> W	Well installed by: (person's name and firm) <u>G RODRIGUEZ</u>
Is well A Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of Well relative to Waste Source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input checked="" type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	<u>LAYNE</u>

A. Protective pipe, top elevation <u>850.10</u> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <u>850.09</u> ft. MSL	2. Protective cover pipe: a. Inside diameter: <u>0.9</u> b. Length: <u>0.1</u> c. Material: _____ Size: _____ Other: _____
C. Land surface elevation <u>842.6</u> ft. MSL	d. Additional protection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: <u>BUCKING POSTS</u>
D. Surface seal bottom _____ ft. MSL or _____ ft.	3. Surface seal: _____ Bentonite <input type="checkbox"/> Concrete <input type="checkbox"/> Other <input type="checkbox"/>
12. USCS classification of soil near screens: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input checked="" type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> Annular space seal <input type="checkbox"/> Other <input type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: Granular Bentonite <input type="checkbox"/> ____ Lbs/gal mud weight ... Bentonite sand slurry <input type="checkbox"/> ____ Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> <u>10</u> % Bentonite ... Bentonite-cement grout <input type="checkbox"/> <u>150</u> Ft <sup>3</sup> volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 <u>DUAL WALL</u> Other <input type="checkbox"/> _____	How installed: _____ Tremie <input type="checkbox"/> Tremie pumped <input type="checkbox"/> Gravity <input type="checkbox"/>
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	6. Bentonite seal: _____ Bentonite granules <input type="checkbox"/> <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> <u>BENTONITE POWDER</u> Other <input type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7. Fine sand material: Manufacturer, product name and grade Volume added _____ ft <sup>3</sup>
Describe _____	8. Filter pack material: Manufacturer, product name and grade <u>COLORADO SILICA SAND #1</u> Volume added <u>10</u> ft <sup>3</sup>
17. Source of water (attach analysis): <u>PRODUCTION WELL #2</u>	9. Well casing: _____ Flush threaded PVC schedule 40 <input type="checkbox"/> Flush threaded PVC schedule 30 <input type="checkbox"/> Other <input type="checkbox"/>
E. Bentonite seal, top <u>627.6</u> ft. MSL or <u>220.0</u> ft.	10. Screen material: <u>PVC SCH 40</u> Screen type: _____ Factory cut <input checked="" type="checkbox"/> Continuous slot <input type="checkbox"/> Other <input type="checkbox"/>
F. Fine sand, top _____ ft. MSL or _____ ft.	Manufacturer <u>TIMCO</u> Slot size: _____ 0.9" Slotted length: <u>10</u>
G. Filter pack, top <u>617.6</u> ft. MSL or <u>230.0</u> ft.	11. Backfill material (below filter pack): _____ None <input type="checkbox"/> Other <input type="checkbox"/>
H. Well screen, top <u>605.8</u> ft. MSL or <u>241.8</u> ft.	
I. Well screen, bottom <u>595.8</u> ft. MSL or <u>251.8</u> ft.	
J. Filter pack, bottom <u>594.1</u> ft. MSL or <u>253.5</u> ft.	
K. Borehole, bottom <u>594.1</u> ft. MSL or <u>253.5</u> ft.	
L. Borehole, diameter <u>07.0</u> in.	
M. O.D. well casing <u>01.25</u> in.	
N. I.D. well casing <u>01.10</u> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Th. R. Russell

Firm ABB - ES

(10-23-91)

Factory/Project Name <b>ISADLER AAP</b>	Grid Location ft. <input type="checkbox"/> N <input type="checkbox"/> S ft. <input type="checkbox"/> E <input type="checkbox"/> W	Well Name <b>PBN-91-06C</b>
Factory License, Permit or Monitoring Number		Well Unique well Number SNA well Number
Type of well: Water Table Observation Well <input type="checkbox"/> / Piezometer <input checked="" type="checkbox"/>	Section Location <b>NE 1/4 of NW 1/4 of Section 23</b>	Date well installed <b>10/22/91</b>
Distance well is from water source boundary <b>NA</b> ft.	Location of well relative to Waste Source T <u>10</u> N <u>0</u> E <u>0</u> W	Well installed by: Person's Name and Firm <b>GABBY RODRIGUEZ</b> <b>LATNE</b>
Is Well A Point of Enforcement Sta. Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of well relative to Waste Source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input checked="" type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	

A. Protective pipe, top elevation <b>848.43</b> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <b>848.29</b> ft. MSL	2. Protective cover pipe: a. Inside diameter: <b>06.0</b> in. b. Length: <b>06.0</b> ft. c. Material: <b>Steel</b> <input checked="" type="checkbox"/> <b>Other</b> <input type="checkbox"/>
C. Land surface elevation <b>846.1</b> ft. MSL	d. Additional protection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: <b>4 BUCKING POSTS</b>
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: <b>Bentonite</b> <input type="checkbox"/> <b>Concrete</b> <input checked="" type="checkbox"/> <b>Other</b> <input type="checkbox"/>
12. USCS classification of soil near screen: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input checked="" type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	4. Material between well casing and protective pipe: <b>Bentonite</b> <input type="checkbox"/> <b>Annular space seal</b> <input checked="" type="checkbox"/> <b>Other</b> <input type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: Granular Bentonite <input type="checkbox"/> <b>10</b> Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> <b>300</b> Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> <b>10</b> % Bentonite ... Bentonite-cement grout <input checked="" type="checkbox"/> <b>300</b> Ft <sup>3</sup> volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 <b>WAL WALL</b> Other <input checked="" type="checkbox"/>	How installed: Tremie <input type="checkbox"/> Tremie pumped <input type="checkbox"/> Gravity <input checked="" type="checkbox"/>
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 02 Air <input checked="" type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	6. Bentonite seal: <b>Bentonite granules</b> <input type="checkbox"/> <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> <b>BENTONITE POWDER</b> Other <input checked="" type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7. Fine sand material: Manufacturer, product name and mesh size <b>NONE</b>
Describe _____	Volume added _____ ft <sup>3</sup>
17. Source of water (attach analysis): <b>PRODUCTION WELL #2</b>	8. Filter pack material: Manufacturer, product name and mesh size <b>COLORADO SILICA SAND #4</b>
	Volume added <b>24</b> ft <sup>3</sup>
E. Bentonite seal, top <b>688.1</b> ft. MSL or <b>158.0</b> ft.	9. Well casing: Flush threaded PVC schedule 40 <input type="checkbox"/> <b>Flush threaded PVC schedule 30</b> <input checked="" type="checkbox"/> Other <input type="checkbox"/>
F. Fine sand, top _____ ft. MSL or _____ ft.	10. Screen material: <b>SCM 80 PVC</b>
G. Filter pack, top <b>668.1</b> ft. MSL or <b>178.0</b> ft.	Screen type: Factory cut <input checked="" type="checkbox"/> Continuous slot <input type="checkbox"/> Other <input type="checkbox"/>
H. Well screen, top <b>655.3</b> ft. MSL or <b>790.8</b> ft.	Manufacturer <b>MOHOFLEX</b>
I. Well screen, bottom <b>645.3</b> ft. MSL or <b>200.8</b> ft.	Slot size: <b>0.010</b> in.
J. Filter pack, bottom <b>645.1</b> ft. MSL or <b>201.6</b> ft.	Slotted length: <b>10.0</b> ft.
K. Borehole, bottom <b>626.1</b> ft. MSL or <b>220.0</b> ft.	11. Backfill material (below filter pack): None <input type="checkbox"/> <b>SURROUNDING SEDIMENT</b> Other <input checked="" type="checkbox"/>
L. Borehole diameter <b>09.0</b> in.	
M. O.D. well casing <b>04.25</b> in.	
N. I.D. well casing <b>03.75</b> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Paul R. Ruston Firm ABB-ES



Family/Project Name <b>BADGER GAP</b>	Grid Location ft. <input type="checkbox"/> N. <input type="checkbox"/> S. ft. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name <b>PBN-91-06D</b>
Factory License, Permit or Monitoring Number <b>41</b>		Well Unique Well Number
Type of Well: Water Table Observation Well <input type="checkbox"/> <input checked="" type="checkbox"/> Piezometer <input type="checkbox"/>	Section Location <b>NE 1/4 of NW 1/4 of Section 23</b>	Date well installed <b>10/12/7</b>
Distance well is from water source boundary <b>NA</b> ft.	T <input checked="" type="checkbox"/> N <input type="checkbox"/> R <input type="checkbox"/> E <input type="checkbox"/> W	Well installed by: (person's Name and firm) <b>G RODRIGUEZ</b>
Is well a Point of Enforcement Site Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of well relative to water source: <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input checked="" type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	<b>LAYNE</b>

A. Protective pipe, top elevation <b>847.69</b> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes
B. Well casing, top elevation <b>847.50</b> ft. MSL	2. Protective cover pipe: a. Inside diameter: _____ b. Length: _____ c. Material: _____
C. Land surface elevation <b>845.8</b> ft. MSL	d. Additional protection? <input checked="" type="checkbox"/> Yes If yes, describe <b>4 BUCKING POSTS</b>
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: _____ Concrete Other _____

12. USCS classification of soil near screens:  
 GP  GM  GC  GW  SW  SP  
 SM  SC  ML  MH  CL  CH  
 Bedrock

13. Sieve analysis attached?  Yes  No

14. Drilling method used: Rotary  50  
 Hollow Stem Auger  41  
**DUAL WALL** Other

15. Drilling fluid used: Water  02 Air  01  
 Drilling Mud  03 None  99

16. Drilling additives used?  Yes  No

Describe \_\_\_\_\_

17. Source of water (attach analysis):  
**PRODUCTION WELL #2**

E. Bentonite seal, top <b>640.8</b> ft. MSL or <b>205.0</b> ft.	6. Bentonite seal: Bentonite granules <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <b>BENTONITE POWDER</b> Other _____
F. Fine sand, top _____ ft. MSL or _____ ft.	7. Fine sand material: Manufacturer, product name and type <b>BENTONITE POWDER</b> Other _____
G. Filter pack, top <b>620.8</b> ft. MSL or <b>225.0</b> ft.	Volume added <b>20</b> ft <sup>3</sup>
H. Well screen, top <b>604.8</b> ft. MSL or <b>241.0</b> ft.	8. Filter pack material: Manufacturer, product name and type <b>COLORADO SILVER SANDS #4</b>
I. Well screen, bottom <b>594.8</b> ft. MSL or <b>251.0</b> ft.	Volume added <b>20</b> ft <sup>3</sup>
J. Filter pack, bottom <b>594.8</b> ft. MSL or <b>251.2</b> ft.	9. Well casing: Flush threaded PVC schedule 40 <input type="checkbox"/> Flush threaded PVC schedule 30 <input type="checkbox"/> Other <input type="checkbox"/>
K. Borehole, bottom <b>594.8</b> ft. MSL or <b>251.0</b> ft.	10. Screen material: <b>SCW 80 PVC</b> Screen type: Factory cut <input type="checkbox"/> Continuous slot <input type="checkbox"/> Other <input type="checkbox"/>
L. Borehole, diameter <b>0.90</b> in.	Manufacturer <b>MONOFLEX</b>
M. O.D. well casing <b>0.45</b> in.	Slot size: _____ Slotted length: _____
N. I.D. well casing <b>0.375</b> in.	11. Backfill material (below filter pack): None <input type="checkbox"/> Other _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature *Paul Roberts* Firm *ABB-ES*

Facility/Project Name <u>Bridges Army Ammunition Plant</u>	Grid Location <u>4,501,326.7</u>	M <input checked="" type="checkbox"/> N <input type="checkbox"/> S	Well Name <u>PBN-59-124</u>
Facility License, Permit or Monitoring Number <u>279,058.9</u>	<u>279,058.9</u>	E <input checked="" type="checkbox"/> E <input type="checkbox"/> W	Wis. Unique Well Number DNR Well Number
Type of Well Water Table Observation Well <input checked="" type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	Section Location 1/4 of _____ 1/4 of Section _____	Date Well Installed <u>02/02/89</u>	
Distance Well Is From Waste/Source boundary <u>NA</u> ft.	T _____ N, R _____ <input type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: (Person's Name and firm) <u>Brian Butler / E.C. Jordan Co.</u>	
Is Well A Point of Enforcement Sta. Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of Well Relative to Waste/Source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input type="checkbox"/> Downgradient <input type="checkbox"/> Not Known		

A. Protective pipe, top elevation <u>855.21</u> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <u>855.66</u> ft. MSL	2. Protective cover pipe: a. Inside diameter: <u>6.0</u> in. b. Length: <u>2.0</u> ft. c. Material: <u>Steel</u> <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/> --
C. Land surface elevation <u>852.6</u> ft. MSL	d. Additional protection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: <u>4 bucking ribs</u>
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: <u>Grout</u> Bentonite <input type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input checked="" type="checkbox"/> --
12. USCS classification of soil near screen: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input checked="" type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	4. Material between well casing and protective pipe: <u>Grout</u> Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/> -- Other <input checked="" type="checkbox"/> --
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: <u>Grout</u> Granular Bentonite <input type="checkbox"/> 33 Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> 35 Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> 31 <u>5</u> % Bentonite ... Bentonite-cement grout <input checked="" type="checkbox"/> 50 <u>± 800 gal</u> volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/> --	How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input checked="" type="checkbox"/> 02 Gravity <input type="checkbox"/> 03
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	6. Bentonite seal: Bentonite granules <input type="checkbox"/> 33 <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input checked="" type="checkbox"/> 32 Other <input type="checkbox"/> --
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7. Fine sand material: Manufacturer, product name and mesh size <u>NA</u> Volume added <u>NA</u> ft <sup>3</sup>
Describe _____	8. Filter pack material: Manufacturer, product name and mesh size <u>Red Flush Silver Filter Sand</u> Volume added <u>± 24</u> ft <sup>3</sup>
17. Source of water (attach analysis): <u>PW #2</u>	9. Well casing: Flush threaded PVC schedule 40 <input type="checkbox"/> 23 Flush threaded PVC schedule 80 <input checked="" type="checkbox"/> 24 Other <input type="checkbox"/> --
E. Bentonite seal, top <u>281.2</u> ft. MSL or <u>70.9</u> ft.	10. Screen material: <u>Schedule 80 PVC</u> Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/> --
F. Fine sand, top <u>NA</u> ft. MSL or <u>NA</u> ft.	Manufacturer <u>Linco</u> Slot size: <u>0.010</u> in. Slotted length: <u>20.0</u> ft.
G. Filter pack, top <u>276.5</u> ft. MSL or <u>76.1</u> ft.	11. Backfill material (below filter pack): None <input type="checkbox"/> <u>Water Cure</u> Other <input checked="" type="checkbox"/>
H. Well screen, top <u>271.9</u> ft. MSL or <u>80.7</u> ft.	
I. Well screen, bottom <u>751.9</u> ft. MSL or <u>100.7</u> ft.	
J. Filter pack, bottom <u>254.6</u> ft. MSL or <u>98.0</u> ft.	
K. Borehole, bottom <u>242.6</u> ft. MSL or <u>105.0</u> ft.	
L. Borehole, diameter <u>9.5</u> in.	
M. O.D. well casing <u>4.5</u> in.	
N. I.D. well casing <u>4.0</u> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [Signature] Firm E.C. Jordan Co.

Please complete and return both sides of this form as required by chs. 144, 147, and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with s. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5,000 for each day of violation. In accordance with s. 147, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5,000 for each day of violation.

Facility/Project Name <u>Bader Sewer Treatment Plant</u>	Grid Location <u>4, 501, 365.5</u> <input checked="" type="checkbox"/> N <input type="checkbox"/> S <u>277, 059.5</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W	Well Name <u>PBW-89-12C</u>
Facility License, Permit or Monitoring Number		Wis. Unique Well Number <u>UNK Well No.</u>
Type of Well Water Table Observation Well <input type="checkbox"/> 11 Piezometer <input checked="" type="checkbox"/> 12	Section Location 1/4 of _____ 1/4 of Section _____	Date Well Installed <u>6/4/89</u>
Distance Well is From Waste Source Boundary <u>NA</u> ft.	T _____ N, R _____ <input type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: (Person's Name and Firm) <u>Jim Buss / E.C. Jordan Co.</u>
Is Well A Point of Enforcement Site Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of Well Relative to Waste Source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	

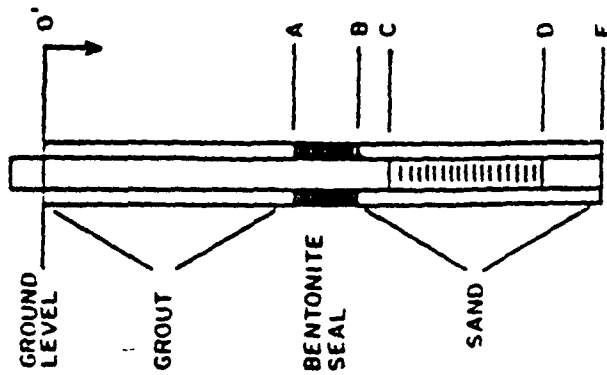
A. Protective pipe, top elevation <u>856.33</u> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <u>856.04</u> ft. MSL	2. Protective cover pipe: a. Inside diameter: _____ b. Length: _____ c. Material: _____ Steel <input checked="" type="checkbox"/> Other <input type="checkbox"/>
C. Land surface elevation <u>852.6</u> ft. MSL	d. Additional protection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: <u>4 backing rods</u>
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: _____ Bentonite <input type="checkbox"/> Concrete <input type="checkbox"/> Other <input checked="" type="checkbox"/> <u>Grout</u>
12. USCS classification of soil near screen: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input checked="" type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	4. Material between well casing and protective pipe: _____ Bentonite <input type="checkbox"/> _____ Annular space seal <input type="checkbox"/> _____ Other <input checked="" type="checkbox"/> <u>Grout</u>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: _____ Granular Bentonite <input type="checkbox"/> _____ Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> _____ Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> <u>5</u> % Bentonite ... Bentonite-cement grout <input checked="" type="checkbox"/> <u>± 300 gal</u> volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 <u>Dead Well</u> Other <input checked="" type="checkbox"/>	How installed: _____ Tremie <input type="checkbox"/> _____ Tremie pumped <input checked="" type="checkbox"/> _____ Gravity <input type="checkbox"/>
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input checked="" type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	6. Bentonite seal: _____ Bentonite granules <input type="checkbox"/> <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> _____ Other <input type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7. Fine sand material: Manufacturer, product name and mesh <u>NA</u> Volume added <u>NA</u> ft <sup>3</sup>
Describe _____	8. Filter pack material: Manufacturer, product name and mesh <u>Red Flint Silica Filter sand</u> Volume added <u>≈ 1.5</u> ft <sup>3</sup>
17. Source of water (attach analysis): <u>PW #2</u>	9. Well casing: _____ Flush threaded PVC schedule 40 <input type="checkbox"/> _____ Flush threaded PVC schedule 80 <input checked="" type="checkbox"/> _____ Other <input type="checkbox"/>
E. Bentonite seal, top <u>738.6</u> ft. MSL or <u>LL4.0</u> ft.	10. Screen material: <u>Schedule 80 02</u> Screen type: _____ Factory cut <input checked="" type="checkbox"/> _____ Continuous slot <input type="checkbox"/> _____ Other <input type="checkbox"/> Manufacturer <u>Timco</u> Slot size: _____ 0.020 Slotted length: _____ 5.0
F. Fine sand, top <u>NA</u> ft. MSL or <u>NA</u> ft.	11. Backfill material (below filter pack): _____ None <input type="checkbox"/> <u>Native cover</u> Other <input checked="" type="checkbox"/>
G. Filter pack, top <u>728.6</u> ft. MSL or <u>124.0</u> ft.	
H. Well screen, top <u>719.6</u> ft. MSL or <u>133.0</u> ft.	
I. Well screen, bottom <u>714.6</u> ft. MSL or <u>138.0</u> ft.	
J. Filter pack, bottom <u>714.6</u> ft. MSL or <u>138.0</u> ft.	
K. Borehole, bottom <u>712.6</u> ft. MSL or <u>140.0</u> ft.	
L. Borehole, diameter <u>9.5</u> in.	
M. O.D. well casing <u>4.5</u> in.	
N. I.D. well casing <u>4.0</u> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [Signature] Firm E.C. Jordan Co.

US ARMY ENVIRONMENTAL HYGIENE AGENCY  
GROUNDWATER MONITOR WELL SUMMARY

PROJECT Badger AAP DATE 9 Sep - 9 Oct 85



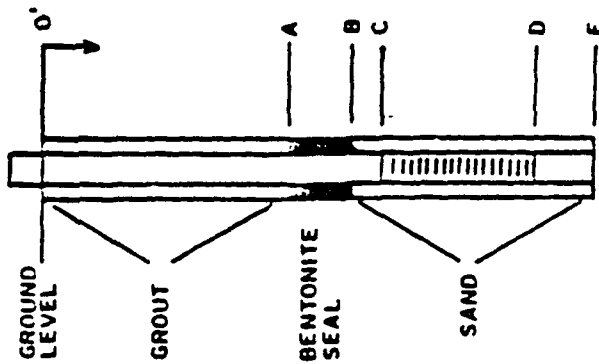
- A - TOP OF BENTONITE SEAL
- B - TOP OF SAND
- C - TOP OF WELL SCREEN
- D - TOP OF SEDIMENT TRAP
- E - TOTAL WELL DEPTH

All measurements in feet except as noted

WELL NO.	PBM-85-01	PBM-85-02	PBM-85-03	PBM-85-04	PBM-85-05	PBM-85-06
A	36.0	31.0	63.0	88.0	77.0	67.0
B	42.0*	40.0*	70.0*	94.0	83.0	73.0
C	108.4	88.9	135.7	112.0	94.9	85.2
D	117.4	97.9	144.7	121.0	103.9	94.2
E	118.4	98.9	145.7	122.0	104.9	95.2
GROUT THICKNESS	36.0	31.0	63.0	88.0	77.0	67.0
BENTONITE SEAL THICKNESS	6.0	9.0	7.0	6.0	6.0	6.0
LENGTH OF STEEL STANDPIPE	3.9	3.3	3.4	3.7	3.6	3.3
LENGTH OF SCREEN	9.0	9.0	9.0	9.0	9.0	9.0
LENGTH OF SEDIMENT TRAP	1.0	1.0	1.0	1.0	1.0	1.0
SCREEN SLOT SIZE (IN)	.010	.010	.010	.010	.010	.010
Water Level from Top Steel Casing	90.5	77.0	114.2	95.9	94.1	79.5
Water Level from Ground Surface	86.6	73.7	110.8	92.2	90.5	76.2
Elevation Top Steel Casing	861.72	847.80	884.75	865.74	863.23	846.78
REMARKS	*Gravel and cobbles collapsed into the borehole					

US ARMY ENVIRONMENTAL HYGIENE AGENCY  
GROUNDWATER MONITOR WELL SUMMARY

PROJECT BARREL A&P DATE 9 Sep - 9 Oct 85



- A - TOP OF BENTONITE SEAL
- B - TOP OF SAND
- C - TOP OF WELL SCREEN
- D - TOP OF SEDIMENT TRAP
- E - TOTAL WELL DEPTH

All measurements in feet except as noted

WELL NO.	PBN-85-01A	PBN-85-02A	PBN-85-03A	PBN-85-04A
A	35.0	60.0	66.0	84.0
B	41.0*	66.0	72.0	90.0
C	108.7	125.1	81.7	99.5
D	117.7	134.1	90.7	108.5
E	118.7	135.1	91.7	109.5
GROUT THICKNESS	35.0	60.0	66.0	84.0
BENTONITE SEAL THICKNESS	6.0	6.0	6.0	6.0
LENGTH OF STEEL STANDPIPE	3.6	3.4	3.3	3.3
LENGTH OF SCREEN	9.0	9.0	9.0	9.0
LENGTH OF SEDIMENT TRAP SCREEN	1.0	1.0	1.0	1.0
SLOT SIZE (IN)	.010	.010	.010	.010
Water level from Top Steel Casing	102.4	127.5	79.2	90.1
Water level from Ground Surface	98.8	124.1	75.9	86.8
Elevation Top Steel Casing	877.11	897.60	852.76	858.39
REMARKS	*Gravel and cobbles collapsed in borehole			

Facility/Project Name <b>BADGER AAP</b>	Grid Location ft. <input type="checkbox"/> N. <input type="checkbox"/> S. ft. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name <b>PBN-91-12C</b>
Factory License, Permit or Monitoring Number		Well Unique Well Number
Type of Well: Water Table Observation Well <input type="checkbox"/> 11 Piezometer <input checked="" type="checkbox"/> 12	Section Location <b>NE 1/4 of NW 1/4 of Section 23</b>	Date well installed <b>10/24/91</b>
Distance well is from waste source boundary <b>NA</b> ft.	<b>T 10 N R 6</b> <input checked="" type="checkbox"/> E <input type="checkbox"/> W	Well installed by: (Person's Name and Firm) <b>LAYNE ENVIRONMENTAL</b>
Is Well A Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of well relative to Waste Source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input checked="" type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	<b>G RODRIGUEZ</b>

A. Protective pipe, top elevation <b>854.49</b> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <b>854.42</b> ft. MSL	2. Protective cover pipe: a. Inside diameter: <b>06.0</b> b. Length: <b>06.0</b> c. Material: <b>Steel</b> <input checked="" type="checkbox"/> Other <input type="checkbox"/>
C. Land surface elevation <b>852.2</b> ft. MSL	d. Additional protection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes describe: <b>BUCKING PESTS GRAV. PRO.</b>
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: <b>Bentonite</b> <input type="checkbox"/> <b>Concrete</b> <input checked="" type="checkbox"/> Other <input type="checkbox"/>
12. USCS classification of soil near screen: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input checked="" type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	4. Material between well casing and protective pipe: <b>Bentonite</b> <input type="checkbox"/> <b>Annular space seal</b> <input checked="" type="checkbox"/> Other <input type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: Lbs/gal mud weight ... <b>Bentonite sand slurry</b> <input type="checkbox"/> Lbs/gal mud weight ... <b>Bentonite slurry</b> <input type="checkbox"/> <b>10</b> % Bentonite ... <b>Bentonite-cement grout</b> <input checked="" type="checkbox"/> <b>250</b> Ft <sup>3</sup> volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 <b>DUAL WALL</b> Other <input checked="" type="checkbox"/>	How installed: <b>Tremie</b> <input type="checkbox"/> <b>Tremie pumped</b> <input type="checkbox"/> <b>Gravity</b> <input checked="" type="checkbox"/>
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 02 Air <input checked="" type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	6. Bentonite seal: <b>Bentonite granules</b> <input type="checkbox"/> <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> <b>BENTONITE POWDER</b> Other <input checked="" type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7. Fine sand material: Manufacturer, product name and mesh size <b>NONE</b>
Describe _____	Volume added _____ ft <sup>3</sup>
17. Source of water (attach analysis): <b>PRODUCTION WELL # 2</b>	8. Filter pack material: Manufacturer, product name and mesh size <b>CSSI SILICA SAND # 4</b>
	Volume added <b>10</b> ft <sup>3</sup>
E. Bentonite seal, top <b>722.2</b> ft. MSL or <b>130.0</b> ft.	9. Well casing: <b>Flush threaded PVC schedule 40</b> <input type="checkbox"/> <b>Flush threaded PVC schedule 30</b> <input checked="" type="checkbox"/> Other <input type="checkbox"/>
F. Fine sand, top _____ ft. MSL or _____ ft.	10. Screen material: <b>SCH 80 PVC 4"</b>
G. Filter pack, top <b>702.2</b> ft. MSL or <b>150.0</b> ft.	Screen type: <b>Factory cut</b> <input checked="" type="checkbox"/> <b>Continuous slot</b> <input type="checkbox"/> Other <input type="checkbox"/>
H. Well screen, top <b>678.8</b> ft. MSL or <b>173.4</b> ft.	Manufacturer <b>MONOFLEX</b>
I. Well screen, bottom <b>668.8</b> ft. MSL or <b>183.4</b> ft.	Slot size: <b>0.010</b> in.
J. Filter pack, bottom <b>668.8</b> ft. MSL or <b>183.4</b> ft.	Slotted length: <b>10.0</b> in.
K. Borehole, bottom <b>652.2</b> ft. MSL or <b>200.0</b> ft.	11. Backfill material (below filter pack): <b>None</b> <input type="checkbox"/> <b>SURROUNDING SEDIMENT</b> Other <input checked="" type="checkbox"/>
L. Borehole, diameter <b>09.0</b> in.	
M. O.D. well casing <b>04.25</b> in.	
N. I.D. well casing <b>03.75</b> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: **Paul R. Kuntz** Firm: **ABB-ES**

Facility/Project Name <b>BADGER AAP</b>	Grid Location ft. <input type="checkbox"/> N. <input type="checkbox"/> E. <input type="checkbox"/> S. <input type="checkbox"/> W.	Well Name <b>PBN-91-12D</b>
Facility License, Permit or Monitoring Number	ft. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Unique Well Number
Type of well: Water Table Observation Well <input checked="" type="checkbox"/> Piezometer <input checked="" type="checkbox"/>	Section Location <b>NE 1/4 of NW 1/4 of Section 23</b>	Date well installed <b>10/26/91</b>
Distance well is from waste source boundary <b>NA</b> ft.	T. <input checked="" type="checkbox"/> N. <input checked="" type="checkbox"/> S. <input type="checkbox"/> W.	Well installed by (person's name and firm) <b>G. RODRIGUEZ</b>
Is well a point of enforcement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of well relative to waste source: <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input checked="" type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	<b>LAYNE</b>

A. Protective pipe, top elevation <b>853.48</b> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/>
B. Well casing, top elevation <b>853.29</b> ft. MSL	2. Protective cover pipe: a. Inside diameter: <b>0.6</b> b. Length: <b>0.6</b> c. Material: <b>Steel</b> d. Additional protection? <input checked="" type="checkbox"/> If yes, describe: <b>4 Bucking Posts</b>
C. Land surface elevation <b>851.2</b> ft. MSL	3. Surface seal: <input type="checkbox"/> Bentonite <input type="checkbox"/> Concrete <input type="checkbox"/> Other
D. Surface seal, bottom _____ ft. MSL or _____ ft.	4. Material between well casing and protective pipe: <input type="checkbox"/> Bentonite <input type="checkbox"/> Annular space seal <input type="checkbox"/> Other
12. USCS classification of soil near screen: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input checked="" type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	5. Annular space seal: <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite-sand slurry <input type="checkbox"/> Bentonite slurry <input checked="" type="checkbox"/> 10% Bentonite <input type="checkbox"/> Bentonite-cement grout <b>400</b> Ft <sup>3</sup> volume added for any of the above How installed: <input type="checkbox"/> Tremie <input type="checkbox"/> Tremie pumped <input checked="" type="checkbox"/> Gravity
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Bentonite seal: <input type="checkbox"/> Bentonite granules <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input checked="" type="checkbox"/> <b>BENTONITE POWDER</b> Other
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 <b>DUAL WALL</b> Other <input checked="" type="checkbox"/>	7. Fine sand material: Manufacturer, product name and mesh Volume added _____ ft <sup>3</sup>
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	8. Filter pack material: Manufacturer, product name and mesh <b>COLORADO SILICA SAND #4</b> Volume added <b>26</b> ft <sup>3</sup>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	9. Well casing: <input type="checkbox"/> Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> Flush threaded PVC schedule 30 <input type="checkbox"/> Other
Describe _____	10. Screen material: <b>PVC SCH 80</b> Screen type: <input checked="" type="checkbox"/> Factory cut <input type="checkbox"/> Continuous slot <input type="checkbox"/> Other
17. Source of water (attach analysis): <b>PRODUCTION WELL #2</b>	Manufacturer: <b>MONOLLEX</b> Slot size: <b>0.010</b> Slotted length: <b>10.0</b>
E. Bentonite seal, top <b>674.2</b> ft. MSL or <b>197.0</b> ft.	11. Backfill material (below filter pack): <input type="checkbox"/> None <input checked="" type="checkbox"/> Other
F. Fine sand, top _____ ft. MSL or _____ ft.	
G. Filter pack, top <b>654.2</b> ft. MSL or <b>197.0</b> ft.	
H. Well screen, top <b>630.2</b> ft. MSL or <b>221.0</b> ft.	
I. Well screen, bottom <b>620.2</b> ft. MSL or <b>231.0</b> ft.	
J. Filter pack, bottom <b>620.2</b> ft. MSL or <b>231.0</b> ft.	
K. Borehole, bottom <b>620.2</b> ft. MSL or <b>231.0</b> ft.	
L. Borehole, diameter <b>09.0</b> in.	
M. O.D. well casing <b>04.25</b> in.	
N. I.D. well casing <b>03.75</b> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Rod R. Rector Firm: ABB-ES

Facility/Project Name <u>Beecher Army Ammunition Plant</u>	Grid Location <u>41, 501, 794.0</u> <u>226, 910.3</u>	Well Name <u>FBM-89-07</u>
Facility License, Permit or Monitoring Number	<u>226, 910.3</u>	Wis. Unique Well Number <u>        </u> DNK Well Number <u>        </u>
Type of Well Water Table Observation Well <input type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	Section Location <u>        </u> 1/4 of <u>        </u> 1/4 of Section <u>        </u>	Date Well Installed <u>03/03/89</u>
Distance Well is from Waste/Source Boundary <u>NA</u> ft.	T <u>        </u> N, R <u>        </u> <input type="checkbox"/> E <input type="checkbox"/> W	Well installed By: (Person's Name and Firm) <u>Bruce Butler / E.C. Jordan Co.</u>
Is Well A Point of Enforcement Sta. Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of Well Relative to Waste/Source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	

A. Protective pipe, top elevation <u>849.56</u> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <u>849.36</u> ft. MSL	2. Protective cover pipe: a. Inside diameter: <u>6.0</u> in. b. Length: <u>2.0</u> ft. c. Material: Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/> <u>        </u>
C. Land surface elevation <u>846.6</u> ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: <u>4 bucking pins</u>
D. Surface seal, bottom <u>        </u> ft. MSL or <u>        </u> ft.	3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input checked="" type="checkbox"/> <u>Grout</u>
12. USCS classification of soil near screen: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input checked="" type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/> <u>        </u> Other <input checked="" type="checkbox"/> <u>Grout</u>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: Granular Bentonite <input type="checkbox"/> 33 Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 Lbs/gal mud weight . . . . . Bentonite slurry <input type="checkbox"/> 31 <u>5</u> % Bentonite . . . . . Bentonite-cement grout <input checked="" type="checkbox"/> 50 <u>+400 gal/ft</u> volume added for any of the above How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input checked="" type="checkbox"/> 02 Gravity <input type="checkbox"/> 03
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/> <u>        </u>	6. Bentonite seal: Bentonite granules <input type="checkbox"/> 33 <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 Other <input type="checkbox"/> <u>        </u>
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	7. Fine sand material: Manufacturer, product name and mesh size <u>NA</u> Volume added <u>NA</u> ft <sup>3</sup>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	8. Filter pack material: Manufacturer, product name and mesh size <u>Red flash silica sand</u> Volume added <u>2.9</u> ft <sup>3</sup>
Describe <u>        </u>	9. Well casing: Flush threaded PVC schedule 40 <input type="checkbox"/> 23 Flush threaded PVC schedule 80 <input checked="" type="checkbox"/> 24 Other <input type="checkbox"/> <u>        </u>
17. Source of water (attach analysis): <u>PW #2</u>	10. Screen material: <u>Schedule 80 PVC</u> Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/> <u>        </u> Manufacturer <u>Tiwo</u> Slot size: <u>0.200</u> in. Slotted length: <u>20.0</u> ft.
E. Bentonite seal, top <u>784.6</u> ft. MSL or <u>620</u> ft.	11. Backfill material (below filter pack): None <input type="checkbox"/> <u>        </u> Other <input checked="" type="checkbox"/> <u>Redwood trees</u>
F. Fine sand, top <u>NA</u> ft. MSL or <u>NA</u> ft.	
G. Filter pack, top <u>780.1</u> ft. MSL or <u>66.5</u> ft.	
H. Well screen, top <u>764.1</u> ft. MSL or <u>82.5</u> ft.	
Well screen, bottom <u>754.1</u> ft. MSL or <u>92.5</u> ft.	
Filter pack, bottom <u>754.1</u> ft. MSL or <u>92.5</u> ft.	
I. Borehole, bottom <u>751.6</u> ft. MSL or <u>95.0</u> ft.	
J. Borehole, diameter <u>9.5</u> in.	
K. O.D. well casing <u>9.5</u> in.	
L. I.D. well casing <u>4.0</u> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.  
Signature [Signature] Firm E.C. Jordan Co.

Use complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with 144, Wis. Stats., failure to file this form may result in a fine of not less than \$10, nor more than \$5,000 for each day of violation. In accordance



Facility/Project Name <u>Buckner Army Ammunition Plant</u>	Grid Location <u>4, 801, 952.3</u>	Well Name <u>PBN-89-0415</u>
Facility License, Permit or Monitoring Number <u>299,000.5</u>	<input checked="" type="checkbox"/> N. <input type="checkbox"/> S. <input checked="" type="checkbox"/> E. <input type="checkbox"/> W.	Wis. Unique Well Number <u>DNK well</u>
Type of Well Water Table Observation Well <input type="checkbox"/> 11 Piezometer <input checked="" type="checkbox"/> 12	Section Location 1/4 of _____ 1/4 of Section _____	Date Well Installed <u>03/10/80</u>
Distance Well is from Waste/Source boundary <u>NA</u> ft.	T _____ N, R _____ <input type="checkbox"/> E <input type="checkbox"/> W	Well installed by: (Person's Name and Firm) <u>P. Bolmer / E.C. Jordan Co.</u>
Is Well A Point of Enforcement Sta. Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of Well Relative to Waste/Source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	

A. Protective pipe, top elevation <u>859.40</u> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <u>859.23</u> ft. MSL	2. Protective cover pipe: a. Inside diameter: <u>6</u> b. Length: <u>2</u> c. Material: <u>Steel</u> d. Additional protection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: <u>4 backing fabric</u>
C. Land surface elevation <u>856.9</u> ft. MSL	3. Surface seal: <u>Grout</u> Bentonite <input type="checkbox"/> Concrete <input type="checkbox"/> Other <input type="checkbox"/>
D. Surface seal, bottom _____ ft. MSL or _____ ft.	4. Material between well casing and protective pipe: <u>Grout</u> Bentonite <input type="checkbox"/> Annular space seal <input type="checkbox"/> Other <input type="checkbox"/>
12. USCS classification of soil near screen: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input checked="" type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	5. Annular space seal: <u>Grout</u> Granular Bentonite <input type="checkbox"/> Lbs/gal mud weight . . . Bentonite-sand slurry Lbs/gal mud weight . . . . . Bentonite slurry <u>5</u> % Bentonite . . . . . Bentonite-cement grout <u>310 gal</u> volume added for any of the above How installed: Tremie <input type="checkbox"/> Tremie pumped <input checked="" type="checkbox"/> Gravity <input type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Bentonite seal: Bentonite granules <input type="checkbox"/> <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> <u>Bentonite Slurry</u> Other <input checked="" type="checkbox"/>
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	7. Fine sand material: Manufacturer, product name and met <u>NA</u> Volume added <u>NA</u> ft <sup>3</sup>
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	8. Filter pack material: Manufacturer, product name and met <u>Red Clay Silica Sand</u> Volume added <u>~2.1</u> ft <sup>3</sup>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	9. Well casing: Flush threaded PVC schedule 40 <input type="checkbox"/> Flush threaded PVC schedule 50 <input checked="" type="checkbox"/> Other <input type="checkbox"/>
Describe _____	10. Screen material: <u>Schedule 80 pipe</u> Screen type: Factory cut <input checked="" type="checkbox"/> Continuous slot <input type="checkbox"/> Other <input type="checkbox"/>
17. Source of water (attach analysis): <u>PW # 2</u>	Manufacturer <u>11-60</u> Slot size: _____ 0.01 Slotted length: <u>5</u>
E. Bentonite seal, top <u>737.1</u> ft. MSL or <u>119.8</u> ft.	11. Backfill material (below filter pack): <u>Native Soil</u> None <input type="checkbox"/> Other <input type="checkbox"/>
F. Fine sand, top <u>NA</u> ft. MSL or <u>NA</u> ft.	
G. Filter pack, top <u>732.1</u> ft. MSL or <u>124.8</u> ft.	
H. Well screen, top <u>717.9</u> ft. MSL or <u>139.0</u> ft.	
I. Well screen, bottom <u>712.9</u> ft. MSL or <u>144.0</u> ft.	
J. Filter pack, bottom <u>712.9</u> ft. MSL or <u>144.0</u> ft.	
K. Borehole, bottom <u>706.9</u> ft. MSL or <u>150.0</u> ft.	
L. Borehole, diameter <u>9.5</u> in.	
M. O.D. well casing <u>9.5</u> in.	
N. I.D. well casing <u>9.0</u> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature P. Bolmer Firm E.C. Jordan Co.

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5,000 for each day of violation. In accordance with ch. 160, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5,000 for each day of violation.

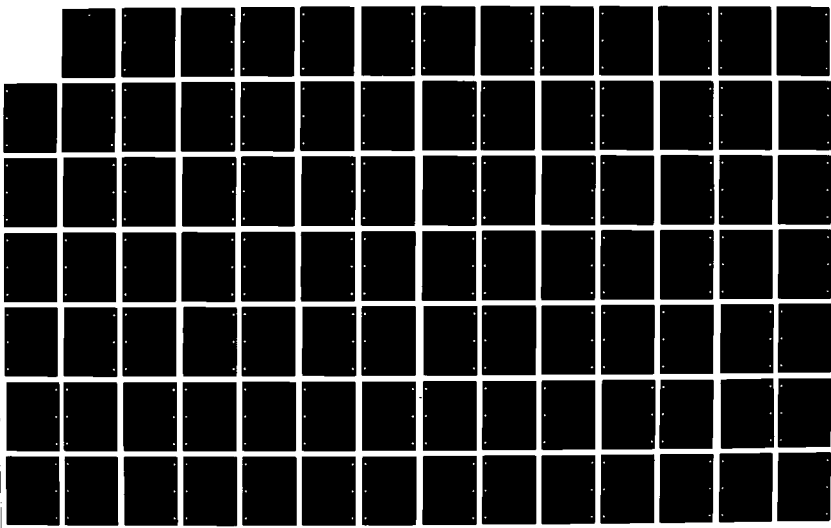
AD-A266 438

REMEDIAL INVESTIGATION BADGER ARMY AMMUNITION PLANT  
BARABOO WISCONSIN VOLUME 3 APPENDICES G THROUGH J(U)  
ABB ENVIRONMENTAL PORTLAND ME 1991 XA-USATHAMA

9/12

UNCLASSIFIED

DAAA15-91-D-0008



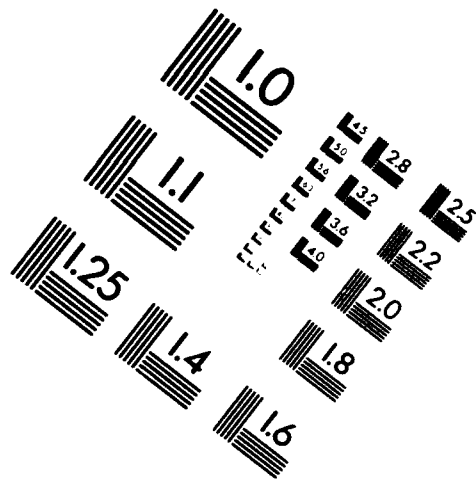
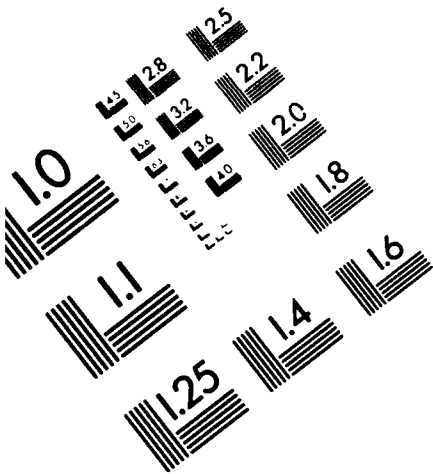


**AIM**

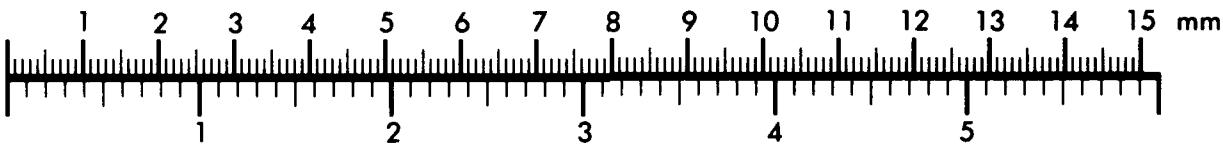
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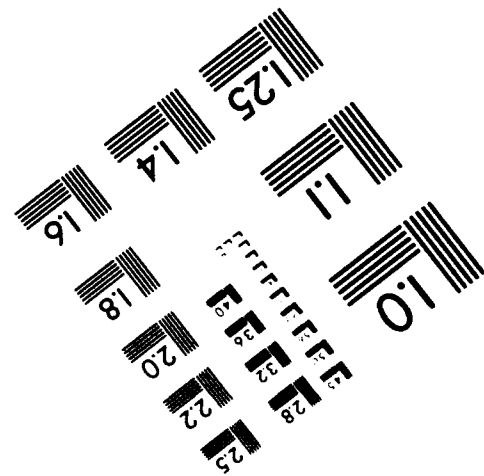
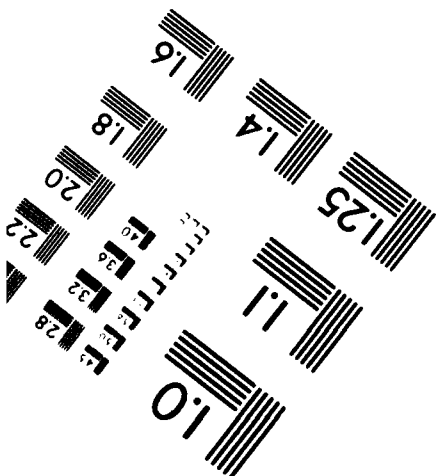
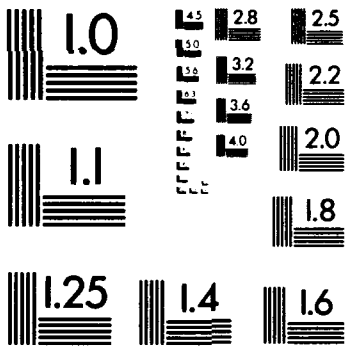
301/587-8202



**Centimeter**



**Inches**



MANUFACTURED TO AIM STANDARDS  
BY APPLIED IMAGE, INC.

Facility/Project Name <u>Berkley Area Ammunition Plant</u>	Grid Location <u>4,801,795.2</u> <u>277,150.6</u>	Well Name <u>PBW-89-041C</u>
Facility License: Permit or Monitoring Number	<input checked="" type="checkbox"/> N. <input type="checkbox"/> S. <input checked="" type="checkbox"/> E. <input type="checkbox"/> W	Wis. Unique Well Number DNR Well Number
Type of Well: Water Table Observation Well <input type="checkbox"/> 11 Piezometer <input checked="" type="checkbox"/> 12	Section Location 1/4 of _____ 1/4 of Section _____	Date Well Installed <u>04/16/89</u>
Distance Well is from Waste/Source boundary <u>NA</u> ft.	T _____ N. R. _____ <input type="checkbox"/> E <input type="checkbox"/> W	Well Installed by: (Person's Name and firm) <u>J. Buss / E.C. Jordan Co</u>
Is Well A Point of Enforcement Sta. Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of Well Relative to Waste/Source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input type="checkbox"/> Downgradient <input type="checkbox"/> Not Known	

A. Protective pipe, top elevation <u>860.51</u> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <u>859.70</u> ft. MSL	2. Protective cover pipe: a. Inside diameter: <u>6.0</u> in. b. Length: <u>2.0</u> ft. c. Material: Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/>
C. Land surface elevation <u>852.7</u> ft. MSL	d. Additional protection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: <u>4 backing posts</u>
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input checked="" type="checkbox"/>
12. USCS classification of soil near screen: <input type="checkbox"/> GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input checked="" type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/> Other <input checked="" type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: Granular Bentonite <input type="checkbox"/> 35 Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 Lbs/gal mud weight . . . Bentonite slurry <input type="checkbox"/> 31 <u>5</u> % Bentonite . . . Bentonite-cement grout <input checked="" type="checkbox"/> 50 <u>5</u> <u>400 gal</u> volume added for any of the above How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input checked="" type="checkbox"/> 02 Gravity <input type="checkbox"/> 03
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 <u>Drill Well</u> Other <input checked="" type="checkbox"/>	6. Bentonite seal: Bentonite granules <input type="checkbox"/> 30 <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 <u>Bentonite Slurry</u> Other <input checked="" type="checkbox"/>
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	7. Fine sand material: Manufacturer, product name and mesh size <u>NA</u> Volume added <u>NA</u> ft <sup>3</sup>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	8. Filter pack material: Manufacturer, product name and mesh size <u>Red Shell, Silica sand</u> Volume added <u>2.25</u> ft <sup>3</sup>
Describe _____	9. Well casing: Flush threaded PVC schedule 40 <input type="checkbox"/> 23 Flush threaded PVC schedule 80 <input checked="" type="checkbox"/> 24 Other <input type="checkbox"/>
17. Source of water (attach analysis): <u>PW #2</u>	10. Screen material: <u>Schedule 80 pipe</u> Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
E. Bentonite seal, top <u>712.2</u> ft. MSL or <u>140.0</u> ft.	Manufacturer <u>Tibro</u> Slot size: <u>0.010</u> in. Slotted length: <u>5.0</u> ft.
F. Fine sand, top <u>NA</u> ft. MSL or <u>NA</u> ft.	11. Backfill material (below filter pack): None <input type="checkbox"/> <u>Drill Fill</u> Other <input checked="" type="checkbox"/>
G. Filter pack, top <u>692.2</u> ft. MSL or <u>165.0</u> ft.	
H. Well screen, top <u>682.2</u> ft. MSL or <u>175.5</u> ft.	
I. Well screen, bottom <u>672.2</u> ft. MSL or <u>180.5</u> ft.	
J. Filter pack, bottom <u>662.2</u> ft. MSL or <u>190.0</u> ft.	
K. Borehole, bottom <u>662.2</u> ft. MSL or <u>190.0</u> ft.	
L. Borehole, diameter <u>4.5</u> in.	
M. O.D. well casing <u>4.5</u> in.	
N. I.D. well casing <u>4.0</u> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.  
Signature: [Signature] Firm: E.C. Jordan Co

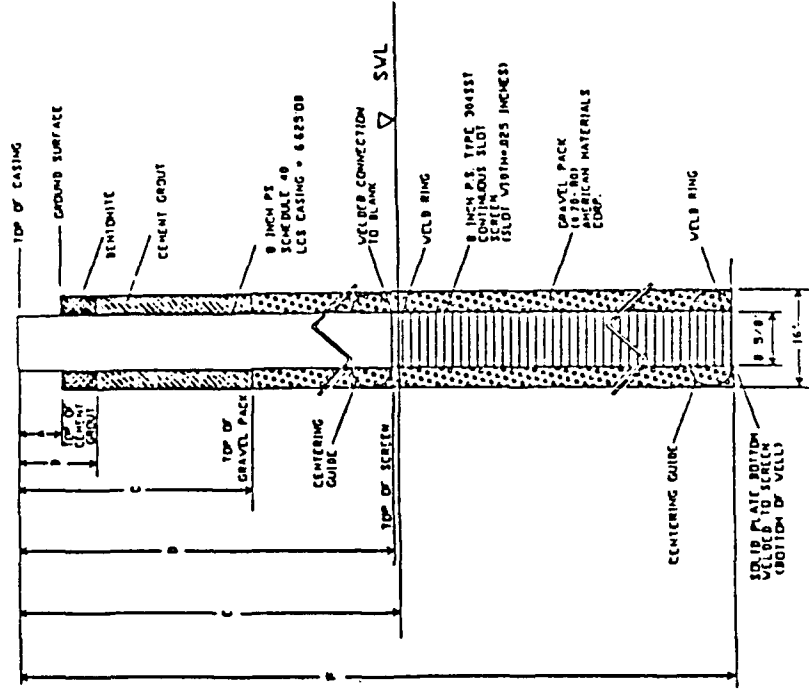
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# EXTRACTION WELL DETAIL

(BCW-3)

(1) (2) (3)	DNV SOURCE CONTROL WELL 1	BOUNDARY CONTROL WELL 2	BOUNDARY CONTROL WELL 3
TOP OF CASING (ELEV. FEET)	878	855	858
DIMENSIONS (FT)			
A	2	2	2
B	18	18	18
C	79	60	55
D	99	80	75
E	104	85	80
F	104	165	160

- DIMENSIONS INDICATE DISTANCE IN FEET FROM THE T.D.C. TO THE REFERENCE POINT DEPICTED ON THE FIGURE.
- T.D.C. AND STATIC WATER LEVEL ELEVATIONS WERE PROVIDED FROM TOPOGRAPHIC AND WATER LEVEL CONTROL POINTS. DIMENSIONS ARE SUBJECT TO CHANGE BASED UPON ACTUAL MEASUREMENTS ACQUIRED IN THE FIELD.
- SCREEN AND GRAVEL PACK DESIGN ARE SUBJECT TO CHANGE BASED ON FIELD DATA ACQUIRED DURING DRILLING.
- SCREEN AND CASING JOINTS WILL BE WELDED TOGETHER.



BAROMETRIC PRESSURE DATA

BAROMETRIC DATA FROM THE NATIONAL  
WEATHER SERVICE IN MADISON, WI

ON SITE  
BAROMETRIC PROBE DATA

ELAPSED TIME SINCE 11/27/91 @1700HRS	BAROMETRIC PRESSURE (psi)	ELAPSED TIME SINCE 11/27/91 @1700HRS	BAROMETRIC PRESSURE (psi)
52	14.69234	0	14.077
109	14.70685	120	14.075
170	14.70685	240	14.040
230	14.72135	360	14.020
290	14.72135	480	14.029
353	14.73586	600	14.046
409	14.75036	720	14.105
470	14.75036	840	14.118
591	14.73586	960	14.131
653	14.72135	1080	14.153
713	14.70685	1200	14.122
771	14.67784	1320	14.075
829	14.64883	1440	14.051
892	14.57631	1560	14.057
1010	14.57631	1680	14.051
1071	14.56181	1800	14.036
1131	14.54731	1920	14.046
1190	14.54731	2040	14.027
1311	14.51830	2160	14.016
1430	14.48929	2280	14.049
1551	14.46028	2400	14.044
1670	14.44578	2520	14.042
1790	14.40227	2640	14.003
1910	14.38776	2760	13.964
2031	14.35876	2880	13.925
2151	14.32975	3000	13.882
2274	14.21372	3120	13.834
2330	14.17021	3240	13.786
2449	14.05418	3360	13.758
2570	13.93815	3480	13.763
2632	13.88013	3600	13.817
2697	13.82212	3720	13.914
2750	13.74960	3840	14.001
2810	13.70609	3960	14.064
2872	13.60456	4080	14.096
2934	13.50303	4200	14.140
2992	13.47403	4320	14.163
3051	13.47403	4440	14.144
3171	13.56105	4560	14.127
3292	13.74960	4680	14.103
3413	14.01067	4800	14.066
3532	14.25723	4920	14.023
3652	14.41677	5040	14.005
3770	14.51830	5160	13.986
3890	14.63433	5280	13.984
4011	14.73586	5400	14.051
4129	14.85189	5520	14.094
4249	14.88089	5640	14.429
4369	14.92441	5760	14.085
4490	14.90990	5880	14.070
4610	14.92441	6000	14.044
4731	14.92441	6120	14.020
4849	14.89540	6240	14.027
4971	14.89540	6360	14.033
5092	14.77937	6480	14.046
5210	14.70685	6600	14.033
5329	14.69234	6720	14.051
5448	14.72135	6840	14.066
5569	14.73586	6960	14.053
5690	14.77937	7080	14.012
5810	14.83738	7200	13.973

BAROMETRIC DATA FROM THE NATIONAL  
WEATHER SERVICE IN MADISON, WI

ON SITE  
BAROMETRIC PROBE DATA

ELAPSED TIME SINCE 11/27/91 @1700HRS	BAROMETRIC PRESSURE (psi)	ELAPSED TIME SINCE 11/27/91 @1700HRS	BAROMETRIC PRESSURE (psi)
5929	14.80837	7320	13.966
6049	14.82288	7440	13.955
6171	14.77937	7560	13.945
6289	14.73586	7680	13.955
6410	14.75036	7800	13.958
6530	14.66334	7920	13.962
6649	14.51830	8040	13.968
6770	14.47479	8160	13.981
6892	14.37326	8280	13.973
7008	14.31525	8400	13.964
7071	14.25723	8520	13.975
7188	14.15570	8640	13.992
7310	14.12670	8760	14.012
7431	14.12670	8880	14.033
7549	14.12670	9000	14.059
7610	14.12670	9120	14.077
7729	14.15570	9240	14.109
7790	14.15570	9360	14.131
7911	14.12670	9480	14.159
8031	14.08318	9600	14.185
8154	14.09769	9720	14.192
8270	14.12670	9840	14.192
8392	14.18471	9960	14.194
8512	14.24273	10080	14.213
8631	14.32975	10200	14.209
8750	14.41677	10320	14.218
8872	14.50380	10440	14.220
8999	14.57631	10560	14.205
9110	14.69234	10680	14.192
9233	14.79387	10800	14.146
9354	14.82288	10920	14.116
9472	14.82288	11520	13.811
9600	14.83738	11640	13.575
9710	14.86639	11760	13.290
9832	14.85189	11880	13.032
10012	14.89540	12000	12.688
10133	14.89540	12120	12.231
10250	14.83738	12240	11.571
10373	14.77937	12360	12.896
10492	14.64883	12480	13.508
10613	14.53280	12600	14.056
10733	14.44578	12720	14.110
10852	14.30074	12840	14.052
10975	14.24273	12960	13.917
11091	14.28624	13080	14.010
11213	14.40227	13200	14.030
11332	14.50380	13320	14.032
11452	14.57631	13440	14.026
11574	14.66334	13560	14.030
11691	14.69234	13680	14.043
11814	14.67784	13800	14.052
11931	14.69234	13920	14.075
12051	14.67784	14040	14.121
12173	14.66334	14160	14.114
12291	14.54731	14280	14.123
12410	14.40227	14400	14.104
12531	14.25723	14520	14.112
12591	14.18471	14640	14.097
12771	14.05418	14760	14.086
12891	14.01067	14880	14.071
13011	13.96715	15000	14.060



BAROMETRIC DATA FROM THE NATIONAL  
WEATHER SERVICE IN MADISON, WI

ON SITE  
BAROMETRIC PROBE DATA

ELAPSED TIME SINCE 11/27/91 @1700HRS	BAROMETRIC PRESSURE (psi)	ELAPSED TIME SINCE 11/27/91 @1700HRS	BAROMETRIC PRESSURE (psi)
13132	13.96715	15120	14.043
13193	13.98166	15240	14.036
13311	13.98166	15360	14.039
13431	14.05418	15480	14.039
13552	14.11219	15600	14.045
13672	14.17021	15720	14.067
13790	14.12670	15840	14.091
13914	14.18471	15960	14.125
13973	14.18471	16080	14.153
14091	14.21372	16200	14.168
14212	14.21372	16320	14.162
14330	14.18471	16440	14.114
14452	14.15570	16560	14.019
14574	14.09769	16680	13.989
14693	14.03967	16800	14.173
14813	14.03967	16920	14.205
14931	14.01067	17040	14.203
15172	13.93815	17160	14.264
15295	13.96715	17280	14.264
15410	14.05418	17400	14.255
15530	14.18471	17520	14.255
15652	14.31525	17640	14.270
15771	14.38776	17760	14.262
15890	14.46028	17880	14.253
16012	14.53280	18000	14.227
16133	14.54731	18120	14.201
16251	14.53280	18240	14.194
16371	14.53280	18360	14.227
16495	14.54731	18480	14.223
16613	14.50380	18600	14.223
16731	14.44578	18720	14.227
16851	14.47479	18840	14.229
16972	14.53280	18960	14.236
17091	14.54731	19080	14.244
17213	14.57631	19200	14.251
17330	14.57631	19320	14.201
17452	14.56181	19440	14.158
17573	14.53280	19560	14.177
17692	14.48929	19680	14.227
17815	14.44578	19800	14.346
17932	14.43128	19920	14.372
18052	14.35876	20040	14.374
18170	14.28624	20160	14.344
18291	14.30074	20280	14.298
18413	14.34425	20400	14.244
18532	14.40227	20520	14.229
18653	14.46028	20640	14.205
18772	14.51830	20760	14.201
18892	14.57631	20880	14.160
19014	14.60532	21000	14.125
19134	14.64883	21120	14.060
19252	14.72135	21240	14.017
19494	14.76486	21360	13.980
19551	14.75036	21480	13.989
19612	14.72135	21600	14.024
19672	14.72135	21720	14.067
19732	14.70685	21840	14.106
19791	14.67784	21960	14.130
19852	14.70685	22080	14.145
19912	14.70685	22200	14.153
19970	14.69234	22320	14.142

BAROMETRIC DATA FROM THE NATIONAL  
WEATHER SERVICE IN MADISON, WI

ON SITE  
BAROMETRIC PROBE DATA

ELAPSED TIME SINCE 11/27/91 @1700HRS	BAROMETRIC PRESSURE (psi)	ELAPSED TIME SINCE 11/27/91 @1700HRS	BAROMETRIC PRESSURE (psi)
20034	14.67784	22440	14.110
20090	14.64883	22560	14.166
20150	14.61983	22680	14.223
20210	14.59082	22800	14.223
20272	14.51830	22920	14.231
20333	14.47479	23040	14.205
20392	14.41677	23160	14.175
20414	14.38776	23280	14.160
20453	14.32975	23400	14.156
20513	14.25723	23520	14.160
20571	14.19922	23640	14.151
20631	14.14120	23760	14.052
20691	14.05418	23880	13.952
20728	13.98166	24000	13.952
20751	13.93815	24120	14.026
20810	13.86563	24240	14.093
20870	13.77861	24360	14.117

ANTECEDENT WATER LEVEL DATA

ADGER ARMY AMMUNITION PLANT  
 QUIFER PUMPING TEST  
 DECEMBER 1991  
 BP-91-01B,C,D  
 PRECEDENT MONITORING

ELAPSED TIME SINCE 1200hrs ON 12/5/92 (minutes)	PBP-91-01B		PBP-91-01C		PBP-91-01D	
	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)
0	85.104	765.426	85.120	765.410	85.097	765.433
60	85.123	765.407	85.138	765.392	85.110	765.420
120	85.123	765.407	85.132	765.398	85.103	765.427
180	85.123	765.407	85.151	765.379	85.116	765.414
240	85.130	765.400	85.157	765.373	85.122	765.408
300	85.142	765.388	85.170	765.360	85.135	765.395
360	85.148	765.382	85.176	765.354	85.147	765.383
420	85.148	765.382	85.176	765.354	85.147	765.383
480	85.148	765.382	85.183	765.347	85.154	765.376
540	85.148	765.382	85.176	765.354	85.147	765.383
600	85.155	765.375	85.183	765.347	85.154	765.376
660	85.148	765.382	85.176	765.354	85.147	765.383
720	85.142	765.388	85.164	765.366	85.135	765.395
780	85.136	765.394	85.170	765.360	85.135	765.395
840	85.130	765.400	85.157	765.373	85.128	765.402
900	85.123	765.407	85.151	765.379	85.122	765.408
960	85.117	765.413	85.138	765.392	85.110	765.420
1020	85.111	765.419	85.138	765.392	85.103	765.427
1080	85.130	765.400	85.145	765.385	85.116	765.414
1140	85.130	765.400	85.138	765.392	85.110	765.420
1200	85.111	765.419	85.126	765.404	85.097	765.433
1260	85.117	765.413	85.132	765.398	85.103	765.427
1320	85.111	765.419	85.120	765.410	85.097	765.433
1380	85.092	765.438	85.107	765.423	85.084	765.446
1440	85.054	765.476	85.063	765.467	85.040	765.490
1500	85.066	765.464	85.082	765.448	85.046	765.484
1560	85.041	765.489	85.056	765.474	85.027	765.503
1620	85.041	765.489	85.056	765.474	85.027	765.503
1680	85.035	765.495	85.050	765.480	85.021	765.509
1740	85.022	765.508	85.044	765.486	85.008	765.522
1800	85.029	765.501	85.044	765.486	85.015	765.515
1860	85.035	765.495	85.056	765.474	85.034	765.496
1920	85.029	765.501	85.037	765.493	85.015	765.515
1980	85.029	765.501	85.037	765.493	85.015	765.515
2040	85.022	765.508	85.037	765.493	85.015	765.515
2100	85.035	765.495	85.044	765.486	85.021	765.509
2160	85.029	765.501	85.044	765.486	85.015	765.515
2220	85.029	765.501	85.044	765.486	85.021	765.509
2280	85.048	765.482	85.063	765.467	85.040	765.490
2340	85.041	765.489	85.056	765.474	85.034	765.496
2400	85.048	765.482	85.063	765.467	85.040	765.490
2460	85.048	765.482	85.069	765.461	85.046	765.484
2520	85.060	765.470	85.075	765.455	85.053	765.477
2580	85.054	765.476	85.069	765.461	85.046	765.484
2640	85.054	765.476	85.069	765.461	85.046	765.484
2700	85.066	765.464	85.082	765.448	85.059	765.471
2760	85.073	765.457	85.088	765.442	85.065	765.465
2820	85.060	765.470	85.075	765.455	85.053	765.477
2880	85.048	765.482	85.063	765.467	85.040	765.490
2940	85.029	765.501	85.050	765.480	85.027	765.503
3000	85.060	765.470	85.075	765.455	85.046	765.484
3060	85.048	765.482	85.069	765.461	85.046	765.484

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP-91-01B,C,D  
 ANTECEDENT MONITORING

ELAPSED TIME SINCE 1200hrs ON 12/5/92 (minutes)	PBP-91-01B		PBP-91-01C		PBP-91-01D	
	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)
3120	85.035	765.495	85.063	765.467	85.040	765.490
3180	85.048	765.482	85.075	765.455	85.053	765.477
3240	85.048	765.482	85.075	765.455	85.053	765.477
3300	85.054	765.476	85.075	765.455	85.053	765.477
3360	85.035	765.495	85.050	765.480	85.034	765.496
3420	85.035	765.495	85.056	765.474	85.034	765.496
3480	85.029	765.501	85.050	765.480	85.027	765.503
3540	85.022	765.508	85.050	765.480	85.027	765.503
3600	85.016	765.514	85.037	765.493	85.015	765.515
3660	85.016	765.514	85.037	765.493	85.015	765.515
3720	85.010	765.520	85.031	765.499	85.008	765.522
3780	85.010	765.520	85.031	765.499	85.008	765.522
3840	84.997	765.533	85.018	765.512	85.002	765.528
3900	85.003	765.527	85.025	765.505	85.002	765.528
3960	85.003	765.527	85.031	765.499	85.008	765.522
4020	84.997	765.533	85.025	765.505	85.002	765.528
4080	85.003	765.527	85.031	765.499	85.002	765.528
4140	85.003	765.527	85.031	765.499	85.008	765.522
4200	85.003	765.527	85.031	765.499	85.008	765.522
4260	84.997	765.533	85.018	765.512	85.002	765.528
4320	84.991	765.539	85.018	765.512	84.996	765.534
4380	85.003	765.527	85.025	765.505	85.008	765.522
4440	85.022	765.508	85.050	765.480	85.027	765.503
4500	85.022	765.508	85.050	765.480	85.027	765.503
4560	85.048	765.482	85.069	765.461	85.046	765.484
4620	85.054	765.476	85.082	765.448	85.059	765.471
4680	85.066	765.464	85.101	765.429	85.078	765.452
4740	85.060	765.470	85.088	765.442	85.065	765.465
4800	85.073	765.457	85.101	765.429	85.078	765.452
4860	85.060	765.470	85.088	765.442	85.065	765.465
4920	85.060	765.470	85.088	765.442	85.065	765.465
4980	85.054	765.476	85.082	765.448	85.059	765.471
5040	85.054	765.476	85.088	765.442	85.065	765.465
5100	85.048	765.482	85.082	765.448	85.065	765.465
5160	85.041	765.489	85.075	765.455	85.059	765.471
5220	85.029	765.501	85.056	765.474	85.040	765.490
5280	85.035	765.495	85.063	765.467	85.046	765.484
5340	85.029	765.501	85.056	765.474	85.034	765.496
5400	85.029	765.501	85.056	765.474	85.034	765.496
5460	85.029	765.501	85.056	765.474	85.040	765.490
5520	85.016	765.514	85.044	765.486	85.021	765.509
5580	85.022	765.508	85.050	765.480	85.034	765.496
5640	85.022	765.508	85.044	765.486	85.027	765.503
5700	85.010	765.520	85.037	765.493	85.021	765.509
5760	84.991	765.539	85.025	765.505	85.002	765.528
5820	84.997	765.533	85.025	765.505	85.008	765.522
5880	84.991	765.539	85.018	765.512	85.002	765.528
5940	84.984	765.546	85.025	765.505	85.008	765.522
6000	85.029	765.501	85.044	765.486	85.027	765.503
6060	85.016	765.514	85.037	765.493	85.021	765.509
6120	85.022	765.508	85.044	765.486	85.027	765.503
6180	85.035	765.495	85.050	765.480	85.034	765.496

WADSWORTH ARMY AMMUNITION PLANT  
 ARTEFICIAL RECHARGE PUMPING TEST  
 DECEMBER 1991  
 WADSWORTH-91-01B,C,D  
 PREVIOUS TEST RESULTS

ELAPSED TIME SINCE 1200hrs ON 12/5/92 (minutes)	PBP-91-01B		PBP-91-01C		PBP-91-01D	
	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)
6240	85.029	765.501	85.044	765.486	85.027	765.503
6300	85.016	765.514	85.031	765.499	85.015	765.515
6360	85.029	765.501	85.044	765.486	85.027	765.503
6420	85.022	765.508	85.037	765.493	85.021	765.509
6480	85.010	765.520	85.025	765.505	85.008	765.522
6540	85.003	765.527	85.025	765.505	85.002	765.528
6600	85.010	765.520	85.025	765.505	85.008	765.522
6660	85.003	765.527	85.025	765.505	85.008	765.522
6720	84.991	765.539	85.006	765.524	84.989	765.541
6780	84.984	765.546	84.999	765.531	84.983	765.547
6840	84.984	765.546	84.999	765.531	84.983	765.547
6900	84.984	765.546	84.999	765.531	84.983	765.547
6960	84.991	765.539	85.012	765.518	84.989	765.541
7020	84.991	765.539	85.006	765.524	84.989	765.541
7080	84.991	765.539	85.006	765.524	84.989	765.541
7140	85.205	765.325	85.164	765.366	85.103	765.427
7200	85.237	765.293	85.183	765.347	85.122	765.408
7260	85.016	765.514	85.025	765.505	85.002	765.528
7320	85.003	765.527	85.018	765.512	84.996	765.534
7380	84.997	765.533	85.018	765.512	84.996	765.534
7440	85.003	765.527	85.025	765.505	85.002	765.528
7500	85.010	765.520	85.031	765.499	85.008	765.522
7560	85.003	765.527	85.037	765.493	85.015	765.515
7620	85.010	765.520	85.037	765.493	85.015	765.515
7680	85.010	765.520	85.044	765.486	85.021	765.509
7740	85.016	765.514	85.044	765.486	85.027	765.503
7800	85.022	765.508	85.050	765.480	85.027	765.503
7860	85.016	765.514	85.050	765.480	85.027	765.503
7920	85.010	765.520	84.898	765.632	85.021	765.509
7980	85.016	765.514	84.924	765.606	85.021	765.509
8040	85.016	765.514	84.917	765.613	85.027	765.503
8100	85.016	765.514	84.911	765.619	85.021	765.509
8160	85.010	765.520	84.911	765.619	85.015	765.515
8220	85.022	765.508	84.930	765.600	85.027	765.503
8280	85.016	765.514	84.936	765.594	85.021	765.509
8340	85.022	765.508	84.949	765.581	85.034	765.496
8400	85.029	765.501	84.961	765.569	85.034	765.496
8460	85.029	765.501	84.961	765.569	85.034	765.496
8520	85.029	765.501	84.968	765.562	85.027	765.503
8580	84.997	765.533	84.968	765.562	85.021	765.509
8640	84.991	765.539	84.961	765.569	85.015	765.515
8700	84.966	765.564	84.949	765.581	84.996	765.534
8760	84.959	765.571	84.942	765.588	84.989	765.541
8820	85.029	765.501	84.980	765.550	85.021	765.509

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 PBP-91-02B,C,D  
 DECEMBER 1991  
 ANTECEDENT MONITORING

ELAPSED TIME SINCE 1200hrs ON 12/5/92 (minutes)	PBP-91-02B		PBP-91-02C		PBP-91-02D	
	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)
	0	84.587	765.503	84.600	765.490	84.601
60	84.581	765.509	84.619	765.471	84.591	765.499
120	84.574	765.516	84.619	765.471	84.572	765.516
180	84.581	765.509	84.628	765.462	84.572	765.518
240	84.581	765.509	84.628	765.462	84.572	765.518
300	84.587	765.503	84.638	765.452	84.582	765.508
360	84.593	765.497	84.628	765.462	84.582	765.508
420	84.587	765.503	84.628	765.462	84.572	765.518
480	84.587	765.503	84.619	765.471	84.563	765.527
540	84.581	765.509	84.610	765.480	84.553	765.537
600	84.587	765.503	84.619	765.471	84.553	765.537
660	84.581	765.509	84.610	765.480	84.553	765.537
720	84.574	765.516	84.600	765.490	84.544	765.546
780	84.574	765.516	84.600	765.490	84.544	765.546
840	84.568	765.522	84.591	765.499	84.525	765.565
900	84.562	765.528	84.591	765.499	84.525	765.565
960	84.549	765.541	84.572	765.518	84.506	765.584
1020	84.543	765.547	84.572	765.518	84.506	765.584
1080	84.549	765.541	84.572	765.518	84.506	765.584
1140	84.549	765.541	84.572	765.518	84.506	765.584
1200	84.530	765.560	84.562	765.528	84.487	765.603
1260	84.536	765.554	84.562	765.528	84.487	765.603
1320	84.530	765.560	84.543	765.547	84.477	765.613
1380	84.518	765.572	84.543	765.547	84.477	765.613
1440	84.492	765.598	84.506	765.584	84.439	765.651
1500	84.499	765.591	84.515	765.575	84.439	765.651
1560	84.467	765.623	84.487	765.603	84.411	765.679
1620	84.480	765.610	84.487	765.603	84.420	765.670
1680	84.473	765.617	84.477	765.613	84.401	765.689
1740	84.461	765.629	84.468	765.622	84.392	765.698
1800	84.461	765.629	84.468	765.622	84.392	765.698
1860	84.461	765.629	84.477	765.613	84.392	765.698
1920	84.455	765.635	84.459	765.631	84.382	765.708
1980	84.455	765.635	84.459	765.631	84.382	765.708
2040	84.455	765.635	84.449	765.641	84.373	765.717
2100	84.455	765.635	84.459	765.631	84.382	765.708
2160	84.448	765.642	84.459	765.631	84.373	765.717
2220	84.455	765.635	84.449	765.641	84.373	765.717
2280	84.467	765.623	84.468	765.622	84.382	765.708
2340	84.461	765.629	84.459	765.631	84.373	765.717
2400	84.467	765.623	84.468	765.622	84.373	765.717
2460	84.467	765.623	84.468	765.622	84.373	765.717
2520	84.473	765.617	84.477	765.613	84.373	765.717
2580	84.467	765.623	84.468	765.622	84.373	765.717
2640	84.467	765.623	84.468	765.622	84.373	765.717
2700	84.467	765.623	84.477	765.613	84.373	765.717
2760	84.480	765.610	84.477	765.613	84.382	765.708
2820	84.467	765.623	84.468	765.622	84.364	765.726
2880	84.461	765.629	84.459	765.631	84.345	765.745
2940	84.442	765.648	84.440	765.650	84.335	765.755
3000	84.473	765.617	84.459	765.631	84.345	765.745
3060	84.467	765.623	84.459	765.631	84.345	765.745

WADSWORTH ARMY AMMUNITION PLANT  
 ARTEFICIAL QUANTIFICATION PUMPING TEST  
 WBP-91-02B,C,D  
 DECEMBER 1991  
 PRECEDENT MONITORING

ELAPSED TIME SINCE 1200hrs ON 12/5/92 (minutes)	PBP-91-02B			PBP-91-02C			PBP-91-02D		
	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)		DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)		DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	
3120	84.461	765.629		84.449	765.641		84.335	765.755	
3180	84.473	765.617		84.459	765.631		84.345	765.745	
3240	84.461	765.629		84.459	765.631		84.345	765.745	
3300	84.467	765.623		84.459	765.631		84.345	765.745	
3360	84.448	765.642		84.440	765.650		84.326	765.764	
3420	84.455	765.635		84.440	765.650		84.326	765.764	
3480	84.448	765.642		84.440	765.650		84.326	765.764	
3540	84.448	765.642		84.430	765.660		84.316	765.774	
3600	84.436	765.654		84.421	765.669		84.307	765.783	
3660	84.442	765.648		84.421	765.669		84.307	765.783	
3720	84.436	765.654		84.421	765.669		84.297	765.793	
3780	84.436	765.654		84.421	765.669		84.297	765.793	
3840	84.429	765.661		84.411	765.679		84.288	765.802	
3900	84.429	765.661		84.411	765.679		84.288	765.802	
3960	84.429	765.661		84.411	765.679		84.288	765.802	
4020	84.429	765.661		84.402	765.688		84.288	765.802	
4080	84.429	765.661		84.411	765.679		84.288	765.802	
4140	84.429	765.661		84.402	765.688		84.278	765.812	
4200	84.429	765.661		84.402	765.688		84.278	765.812	
4260	84.423	765.667		84.393	765.697		84.269	765.821	
4320	84.423	765.667		84.393	765.697		84.259	765.831	
4380	84.429	765.661		84.393	765.697		84.269	765.821	
4440	84.448	765.642		84.411	765.679		84.288	765.802	
4500	84.448	765.642		84.411	765.679		84.288	765.802	
4560	84.461	765.629		84.430	765.660		84.307	765.783	
4620	84.473	765.617		84.430	765.660		84.316	765.774	
4680	84.486	765.604		84.449	765.641		84.326	765.764	
4740	84.480	765.610		84.440	765.650		84.316	765.774	
4800	84.492	765.598		84.440	765.650		84.316	765.774	
4860	84.486	765.604		84.440	765.650		84.307	765.783	
4920	84.480	765.610		84.430	765.660		84.297	765.793	
4980	84.480	765.610		84.430	765.660		84.297	765.793	
5040	84.480	765.610		84.430	765.660		84.297	765.793	
5100	84.480	765.610		84.430	765.660		84.288	765.802	
5160	84.467	765.623		84.421	765.669		84.288	765.802	
5220	84.461	765.629		84.411	765.679		84.269	765.821	
5280	84.461	765.629		84.411	765.679		84.269	765.821	
5340	84.455	765.635		84.402	765.688		84.269	765.821	
5400	84.461	765.629		84.402	765.688		84.269	765.821	
5460	84.455	765.635		84.402	765.688		84.269	765.821	
5520	84.442	765.648		84.393	765.697		84.250	765.840	
5580	84.448	765.642		84.402	765.688		84.259	765.831	
5640	84.448	765.642		84.393	765.697		84.250	765.840	
5700	84.442	765.648		84.383	765.707		84.240	765.850	
5760	84.423	765.667		84.374	765.716		84.221	765.869	
5820	84.429	765.661		84.374	765.716		84.231	765.859	
5880	84.429	765.661		84.364	765.726		84.221	765.869	
5940	84.429	765.661		84.364	765.726		84.221	765.869	
6000	84.448	765.642		84.374	765.716		84.231	765.859	
6060	84.436	765.654		84.364	765.726		84.221	765.869	
6120	84.442	765.648		84.374	765.716		84.221	765.869	
6180	84.448	765.642		84.383	765.707		84.231	765.859	



BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 PBP-91-02B,C,D  
 DECEMBER 1991  
 ANTECEDENT MONITORING

ELAPSED TIME SINCE 1200hrs ON 12/5/92 (minutes)	PBP-91-02B		PBP-91-02C		PBP-91-02D	
	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)
6240	84.442	765.648	84.374	765.716	84.221	765.869
6300	84.436	765.654	84.364	765.726	84.212	765.878
6360	84.442	765.648	84.374	765.716	84.212	765.878
6420	84.436	765.654	84.364	765.726	84.212	765.878
6480	84.429	765.661	84.355	765.735	84.202	765.888
6540	84.423	765.667	84.355	765.735	84.193	765.897
6600	84.429	765.661	84.355	765.735	84.193	765.897
6660	84.423	765.667	84.355	765.735	84.193	765.897
6720	84.417	765.673	84.336	765.754	84.183	765.907
6780	84.410	765.680	84.327	765.763	84.174	765.916
6840	84.410	765.680	84.327	765.763	84.174	765.916
6900	84.410	765.680	84.327	765.763	84.174	765.916
6960	84.417	765.673	84.336	765.754	84.174	765.916
7020	84.410	765.680	84.327	765.763	84.174	765.916
7080	84.410	765.680	84.336	765.754	84.174	765.916
7140	84.461	765.629	84.383	765.707	84.221	765.869
7200	84.480	765.610	84.393	765.697	84.231	765.859
7260	84.429	765.661	84.336	765.754	84.174	765.916
7320	84.417	765.673	84.317	765.773	84.155	765.935
7380	84.417	765.673	84.327	765.763	84.155	765.935
7440	84.429	765.661	84.327	765.763	84.164	765.926
7500	84.442	765.648	84.336	765.754	84.174	765.916
7560	84.429	765.661	84.336	765.754	84.164	765.926
7620	84.436	765.654	84.336	765.754	84.164	765.926
7680	84.436	765.654	84.336	765.754	84.174	765.916
7740	84.436	765.654	84.336	765.754	84.174	765.916
7800	84.442	765.648	84.345	765.745	84.174	765.916
7860	84.442	765.648	84.336	765.754	84.174	765.916
7920	84.436	765.654	84.336	765.754	84.164	765.926
7980	84.436	765.654	84.336	765.754	84.164	765.926
8040	84.442	765.648	84.336	765.754	84.164	765.926
8100	84.436	765.654	84.336	765.754	84.164	765.926
8160	84.436	765.654	84.327	765.763	84.155	765.935
8220	84.442	765.648	84.336	765.754	84.164	765.926
8280	84.442	765.648	84.336	765.754	84.155	765.935
8340	84.448	765.642	84.336	765.754	84.164	765.926
8400	84.448	765.642	84.345	765.745	84.164	765.926
8460	84.448	765.642	84.345	765.745	84.164	765.926
8520	84.442	765.648	84.336	765.754	84.155	765.935
8580	84.436	765.654	84.336	765.754	84.155	765.935
8640	84.429	765.661	84.317	765.773	84.136	765.954
8700	84.423	765.667	84.308	765.782	84.126	765.964
8760	84.417	765.673	84.298	765.792	84.117	765.973
8820	84.442	765.648	84.317	765.773	84.136	765.954

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBN-91-06C,D  
 PRECEDENT MONITORING

ELAPSED TIME SINCE 1200hrs ON 12/5/92 (minutes)	PBN-91-06C		PBN-91-06D	
	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)
3120	82.951	765.339	82.157	765.343
3180	82.951	765.339	82.160	765.340
3240	82.945	765.345	82.150	765.350
3300	82.948	765.342	82.154	765.346
3360	82.922	765.368	82.128	765.372
3420	82.926	765.364	82.131	765.369
3480	82.919	765.371	82.125	765.375
3540	82.916	765.374	82.122	765.378
3600	82.903	765.387	82.109	765.391
3660	82.906	765.384	82.112	765.388
3720	82.900	765.390	82.106	765.394
3780	82.900	765.390	82.106	765.394
3840	82.887	765.403	82.097	765.403
3900	82.894	765.396	82.103	765.397
3960	82.897	765.393	82.103	765.397
4020	82.891	765.399	82.097	765.403
4080	82.894	765.396	82.100	765.400
4140	82.897	765.393	82.100	765.400
4200	82.894	765.396	82.100	765.400
4260	82.884	765.406	82.090	765.410
4320	82.881	765.409	82.087	765.413
4380	82.891	765.399	82.093	765.407
4440	82.916	765.374	82.122	765.378
4500	82.913	765.377	82.122	765.378
4560	82.935	765.355	82.141	765.359
4620	82.948	765.342	82.150	765.350
4680	82.960	765.330	82.163	765.337
4740	82.951	765.339	82.154	765.346
4800	82.964	765.326	82.163	765.337
4860	82.951	765.339	82.154	765.346
4920	82.948	765.342	82.150	765.350
4980	82.948	765.342	82.150	765.350
5040	82.945	765.345	82.147	765.353
5100	82.945	765.345	82.147	765.353
5160	82.935	765.355	82.135	765.365
5220	82.916	765.374	82.119	765.381
5280	82.922	765.368	82.122	765.378
5340	82.916	765.374	82.116	765.384
5400	82.916	765.374	82.116	765.384
5460	82.913	765.377	82.112	765.388
5520	82.900	765.390	82.100	765.400
5580	82.910	765.380	82.109	765.391
5640	82.906	765.384	82.103	765.397
5700	82.900	765.390	82.100	765.400
5760	82.884	765.406	82.081	765.419
5820	82.881	765.409	82.078	765.422
5880	82.884	765.406	82.081	765.419
5940	82.887	765.403	82.087	765.413
6000	82.903	765.387	82.106	765.394
6060	82.900	765.390	82.100	765.400
6120	82.903	765.387	82.103	765.397
6180	82.903	765.387	82.100	765.400
6240	82.903	765.387	82.100	765.400

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBN-91-06C,D  
 ANTECEDENT MONITORING

ELAPSED TIME SINCE 1200hrs ON 12/5/92 (minutes)	PBN-91-06C		PBN-91-06D	
	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)
6300	82.894	765.396	82.087	765.413
6360	82.903	765.387	82.100	765.400
6420	82.894	765.396	82.090	765.410
6480	82.884	765.406	82.081	765.419
6540	82.881	765.409	82.074	765.426
6600	82.881	765.409	82.078	765.422
6660	82.881	765.409	82.078	765.422
6720	82.862	765.428	82.059	765.441
6780	82.859	765.431	82.055	765.445
6840	82.856	765.434	82.052	765.448
6900	82.859	765.431	82.055	765.445
6960	82.865	765.425	82.059	765.441
7020	82.862	765.428	82.049	765.451
7080	82.862	765.428	82.052	765.448
7140	82.916	765.374	82.106	765.394
7200	82.929	765.361	82.116	765.384
7260	82.878	765.412	82.059	765.441
7320	82.862	765.428	82.052	765.448
7380	82.872	765.418	82.062	765.438
7440	82.881	765.409	82.071	765.429
7500	82.887	765.403	82.081	765.419
7560	82.887	765.403	82.078	765.422
7620	82.891	765.399	82.081	765.419
7680	82.894	765.396	82.084	765.416
7740	82.897	765.393	82.087	765.413
7800	82.897	765.393	82.084	765.416
7860	82.900	765.390	82.087	765.413
7920	82.894	765.396	82.078	765.422
7980	82.894	765.396	82.081	765.419
8040	82.897	765.393	82.084	765.416
8100	82.894	765.396	82.081	765.419
8160	82.887	765.403	82.074	765.426
8220	82.900	765.390	82.084	765.416
8280	82.897	765.393	82.081	765.419
8340	82.903	765.387	82.087	765.413
8400	82.903	765.387	82.090	765.410
8460	82.900	765.390	82.084	765.416
8520	82.897	765.393	82.068	765.432
8580	82.897	765.393	82.068	765.432
8640	82.887	765.403	82.062	765.438
8700	82.875	765.415	82.049	765.451
8760	82.865	765.425	82.046	765.454
8820	82.894	765.396	82.068	765.432

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 BCW-3  
 PRECEDENT MONITORING

BCW-3

ELAPSED TIME SINCE 1200hrs ON 12/5/92 (minutes)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)
6000	85.200	764.800
6060	85.200	764.800
6120	85.200	764.800
6180	85.200	764.800
6240	85.200	764.800
6300	85.184	764.816
6360	85.200	764.800
6420	85.184	764.816
6480	85.184	764.816
6540	85.168	764.832
6600	85.184	764.816
6660	85.168	764.832
6720	85.152	764.848
6780	85.152	764.848
6840	85.136	764.864
6900	85.152	764.848
6960	85.152	764.848
7020	85.152	764.848
7080	85.152	764.848
7140	96.493	753.507
7200	96.351	753.649
7260	85.184	764.816
7320	85.136	764.864
7380	85.152	764.848
7440	85.168	764.832
7500	85.168	764.832
7560	85.168	764.832
7620	85.168	764.832
7680	85.168	764.832
7740	85.168	764.832
7800	85.168	764.832
7860	85.168	764.832
7920	85.168	764.832
7980	85.168	764.832
8040	85.168	764.832
8100	85.168	764.832
8160	85.168	764.832
8220	85.168	764.832
8280	85.168	764.832
8340	85.168	764.832
8400	85.168	764.832
8460	85.168	764.832
8520	85.168	764.832
8580	107.012	742.988
8640	107.012	742.988
8700	107.012	742.988
8760	107.012	742.988
8820	85.105	764.895

RAW AND ADJUSTED DRAWDOWN DATA

WADSWORTH ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 BP-91-01B  
 RAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER ELEVATION CORRECTED FOR BKGND. WATER LEVEL TREND (ft.MSL)	WATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft.MSL)	CORRECTED DRAWDOWN (feet)
0	84.991	765.539	0.000	14.644	765.539	765.539	0.000
0.1	84.997	765.533	0.006	14.644	765.533	765.533	0.006
0.2	85.022	765.508	0.031	14.644	765.508	765.508	0.031
0.3	85.060	765.470	0.069	14.644	765.470	765.470	0.069
0.5	85.111	765.419	0.120	14.644	765.419	765.419	0.120
0.6	85.123	765.407	0.132	14.644	765.407	765.407	0.132
0.7	85.132	765.398	0.141	14.644	765.398	765.398	0.141
0.8	85.148	765.382	0.157	14.644	765.382	765.382	0.157
0.9	85.148	765.382	0.157	14.644	765.382	765.382	0.157
1	85.155	765.375	0.164	14.644	765.375	765.375	0.164
2	85.180	765.350	0.189	14.643	765.350	765.350	0.189
3	85.180	765.350	0.189	14.643	765.350	765.350	0.189
4	85.180	765.350	0.189	14.642	765.350	765.350	0.189
5	85.180	765.350	0.189	14.642	765.350	765.350	0.189
6	85.186	765.344	0.195	14.641	765.344	765.344	0.195
7	85.186	765.344	0.195	14.641	765.343	765.344	0.196
8	85.186	765.344	0.195	14.640	765.343	765.344	0.196
9	85.186	765.344	0.195	14.640	765.343	765.343	0.196
10	85.186	765.344	0.195	14.639	765.343	765.343	0.196
20	85.199	765.331	0.208	14.634	765.330	765.330	0.209
30	85.212	765.318	0.221	14.630	765.316	765.316	0.223
40	85.224	765.306	0.233	14.625	765.303	765.304	0.236
50	85.243	765.287	0.252	14.620	765.283	765.284	0.256
60	85.256	765.274	0.265	14.608	765.269	765.270	0.270
70	85.268	765.262	0.277	14.597	765.255	765.257	0.284
80	85.268	765.262	0.277	14.586	765.254	765.255	0.285
90	85.275	765.255	0.284	14.600	765.248	765.250	0.291
100	85.275	765.255	0.284	14.595	765.248	765.249	0.291
110	85.287	765.243	0.296	14.591	765.235	765.237	0.304
170	85.306	765.224	0.315	14.518	765.206	765.210	0.333
230	85.325	765.205	0.334	14.475	765.181	765.185	0.358
290	85.331	765.199	0.340	14.417	765.168	765.173	0.371
310	85.338	765.192	0.347	14.388	765.157	765.162	0.382
350	85.338	765.192	0.347	14.330	765.150	765.156	0.389
410	85.350	765.180	0.359	14.257	765.128	765.135	0.411
470	85.350	765.180	0.359	14.199	765.120	765.129	0.419
530	85.344	765.186	0.353	14.141	765.119	765.128	0.420
590	85.350	765.180	0.359	14.054	765.101	765.112	0.438
630	85.357	765.173	0.366	13.982	765.085	765.097	0.454
650	85.350	765.180	0.359	13.938	765.087	765.099	0.452

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP-91-01B  
 DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER	WATER	CORRECTED DRAWDOWN (feet)
					ELEVATION CORRECTED FOR BKGND. WATER LEVEL TREND (ft.MSL)	ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft.MSL)	
710	85.331	765.199	0.340	13.866	765.097	765.109	0.442
770	85.325	765.205	0.334	13.779	765.091	765.105	0.448
810	85.331	765.199	0.340	13.721	765.078	765.092	0.461
830	85.325	765.205	0.334	13.692	765.080	765.095	0.459
890	85.331	765.199	0.340	13.619	765.065	765.081	0.474
950	85.312	765.218	0.321	13.590	765.080	765.096	0.459
1010	85.294	765.236	0.303	13.590	765.096	765.114	0.443
1070	85.306	765.224	0.315	13.634	765.088	765.107	0.451
1130	85.300	765.230	0.309	13.706	765.102	765.122	0.437
1190	85.300	765.230	0.309	13.764	765.107	765.129	0.432
1250	85.312	765.218	0.321	13.866	765.106	765.128	0.433
1310	85.331	765.199	0.340	13.924	765.093	765.116	0.446
1370	85.369	765.161	0.378	13.982	765.060	765.085	0.479
1430	85.401	765.129	0.410	14.054	765.036	765.061	0.503
1470	85.407	765.123	0.416	14.093	765.033	765.059	0.506

- NOTES:
1. PUMPING OF BCW-3 STARTED AT 1600 HOURS ON 12/11/91.
  2. (FT, MSL) - FEET ABOVE MEAN SEA LEVEL

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP-91-01C  
 DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER ELEVATION CORRECTED FO	WATER ELEVATION CORRECTED FOR	CORRECTED DRAWDOWN (feet)
					3KGND. WATER LEVEL TREND (ft.MSL)	BAR. PRESS. CHANGE (ft.MSL)	
0	84.955	765.575	0	14.644	765.575	765.575	0.000
0.1	84.961	765.569	0.006	14.644	765.569	765.569	0.006
0.2	84.980	765.550	0.025	14.644	765.550	765.550	0.025
0.3	84.999	765.531	0.044	14.644	765.531	765.531	0.044
0.5	85.031	765.499	0.076	14.644	765.499	765.499	0.076
0.6	85.044	765.486	0.089	14.644	765.486	765.486	0.089
0.7	85.050	765.480	0.095	14.644	765.480	765.480	0.095
0.8	85.063	765.467	0.108	14.644	765.467	765.467	0.108
0.9	85.069	765.461	0.114	14.644	765.461	765.461	0.114
1	85.069	765.461	0.114	14.644	765.461	765.461	0.114
2	85.094	765.436	0.139	14.643	765.436	765.436	0.139
3	85.094	765.436	0.139	14.643	765.436	765.436	0.139
4	85.094	765.436	0.139	14.642	765.436	765.436	0.139
5	85.094	765.436	0.139	14.642	765.436	765.436	0.139
6	85.094	765.436	0.139	14.641	765.436	765.436	0.139
7	85.094	765.436	0.139	14.641	765.435	765.436	0.140
8	85.101	765.429	0.146	14.640	765.428	765.429	0.147
9	85.101	765.429	0.146	14.640	765.428	765.428	0.147
10	85.101	765.429	0.146	14.639	765.428	765.428	0.147
20	85.107	765.423	0.152	14.634	765.422	765.422	0.153
30	85.120	765.410	0.165	14.630	765.408	765.408	0.167
40	85.126	765.404	0.171	14.625	765.401	765.402	0.174
50	85.145	765.385	0.19	14.620	765.381	765.382	0.194
60	85.157	765.373	0.202	14.608	765.368	765.369	0.207
70	85.170	765.360	0.215	14.597	765.353	765.355	0.222
80	85.176	765.354	0.221	14.586	765.346	765.347	0.229
90	85.176	765.354	0.221	14.600	765.347	765.349	0.228
100	85.176	765.354	0.221	14.595	765.347	765.348	0.228
110	85.189	765.341	0.234	14.591	765.333	765.335	0.242
170	85.195	765.335	0.24	14.518	765.317	765.321	0.258
230	85.214	765.316	0.259	14.475	765.292	765.296	0.283
290	85.221	765.309	0.266	14.417	765.278	765.283	0.297
310	85.227	765.303	0.272	14.388	765.268	765.273	0.307
350	85.221	765.309	0.266	14.330	765.267	765.273	0.308
410	85.240	765.290	0.285	14.257	765.238	765.245	0.337
470	85.233	765.297	0.278	14.199	765.237	765.246	0.338
530	85.227	765.303	0.272	14.141	765.236	765.245	0.339
590	85.233	765.297	0.278	14.054	765.218	765.229	0.357



BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP-91-01C  
 DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER ELEVATION CORRECTED FO	WATER ELEVATION CORRECTED FOR	CORRECTED DRAWDOWN (feet)
					3KGND. WATER LEVEL TREND (ft.MSL)	BAR. PRESS. CHANGE (ft.MSL)	
630	85.233	765.297	0.278	13.982	765.209	765.221	0.366
650	85.233	765.297	0.278	13.938	765.204	765.216	0.371
710	85.214	765.316	0.259	13.866	765.214	765.226	0.361
770	85.208	765.322	0.253	13.779	765.208	765.222	0.367
810	85.208	765.322	0.253	13.721	765.201	765.215	0.374
830	85.208	765.322	0.253	13.692	765.197	765.212	0.378
890	85.208	765.322	0.253	13.619	765.188	765.204	0.397
950	85.189	765.341	0.234	13.590	765.203	765.219	0.372
1010	85.170	765.360	0.215	13.590	765.220	765.238	0.355
1070	85.183	765.347	0.228	13.634	765.211	765.230	0.364
1130	85.176	765.354	0.221	13.706	765.226	765.246	0.349
1190	85.176	765.354	0.221	13.764	765.231	765.253	0.344
1250	85.183	765.347	0.228	13.866	765.235	765.257	0.340
1310	85.214	765.316	0.259	13.924	765.210	765.233	0.365
1370	85.246	765.284	0.291	13.982	765.183	765.208	0.392
1430	85.278	765.252	0.323	14.054	765.159	765.184	0.416
1440	85.278	765.252	0.323	14.093	765.163	765.188	0.412

- NOTES: 1. PUMPING OF BCW-3 STARTED AT 1600 HOURS ON 12/11/91.  
 2. (FT.MSL) - FEET ABOVE MEAN SEA LEVEL

WADSWORTH ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 'BP-91-01D  
 DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER ELEVATION CORRECTED FOR BKGND. WATER LEVEL TREND (ft.MSL)	WATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft.MSL)	CORRECTED DRAWDOWN (feet)
0	85.002	765.528	0.000	14.644	765.528	765.528	0.000
0.1	85.002	765.528	0.000	14.644	765.528	765.528	0.000
0.2	85.002	765.528	0.000	14.644	765.528	765.528	0.000
0.3	85.021	765.509	0.019	14.644	765.509	765.509	0.019
0.5	85.046	765.484	0.044	14.644	765.484	765.484	0.044
0.6	85.053	765.477	0.051	14.644	765.477	765.477	0.051
0.7	85.059	765.471	0.057	14.644	765.471	765.471	0.057
0.8	85.072	765.458	0.070	14.644	765.458	765.458	0.070
0.9	85.072	765.458	0.070	14.644	765.458	765.458	0.070
1	85.078	765.452	0.076	14.644	765.452	765.452	0.076
2	85.097	765.433	0.095	14.643	765.433	765.433	0.095
3	85.103	765.427	0.101	14.643	765.427	765.427	0.101
4	85.103	765.427	0.101	14.642	765.427	765.427	0.101
5	85.103	765.427	0.101	14.642	765.427	765.427	0.101
6	85.103	765.427	0.101	14.641	765.427	765.427	0.101
7	85.110	765.420	0.108	14.641	765.419	765.420	0.109
8	85.103	765.427	0.101	14.640	765.426	765.427	0.102
9	85.103	765.427	0.101	14.640	765.426	765.426	0.102
10	85.103	765.427	0.101	14.639	765.426	765.426	0.102
20	85.110	765.420	0.108	14.634	765.419	765.419	0.109
30	85.116	765.414	0.114	14.630	765.412	765.412	0.116
40	85.128	765.402	0.126	14.625	765.399	765.400	0.129
50	85.141	765.389	0.139	14.620	765.385	765.386	0.143
60	85.154	765.376	0.152	14.608	765.371	765.372	0.157
70	85.166	765.364	0.164	14.597	765.357	765.359	0.171
80	85.173	765.357	0.171	14.586	765.349	765.350	0.179
90	85.173	765.357	0.171	14.600	765.350	765.352	0.178
100	85.166	765.364	0.164	14.595	765.357	765.358	0.171
110	85.179	765.351	0.177	14.591	765.343	765.345	0.185
170	85.192	765.338	0.190	14.518	765.320	765.324	0.208
230	85.204	765.326	0.202	14.475	765.302	765.306	0.226
290	85.211	765.319	0.209	14.417	765.288	765.293	0.240
310	85.211	765.319	0.209	14.388	765.284	765.289	0.244
350	85.211	765.319	0.209	14.330	765.277	765.283	0.251
410	85.223	765.307	0.221	14.257	765.255	765.262	0.273
470	85.223	765.307	0.221	14.199	765.247	765.256	0.281
530	85.217	765.313	0.215	14.141	765.246	765.255	0.282
590	85.223	765.307	0.221	14.054	765.228	765.239	0.300
630	85.223	765.307	0.221	13.982	765.219	765.231	0.309
650	85.223	765.307	0.221	13.938	765.214	765.226	0.314

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP-91-01D  
 DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER ELEVATION CORRECTED FOR BKGND. WATER LEVEL TREND (ft.MSL)	WATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft.MSL)	CORRECTED DRAWDOWN (feet)
710	85.204	765.326	0.202	13.866	765.224	765.236	0.304
770	85.198	765.332	0.196	13.779	765.218	765.232	0.310
810	85.198	765.332	0.196	13.721	765.211	765.225	0.317
830	85.192	765.338	0.190	13.692	765.213	765.228	0.315
890	85.204	765.326	0.202	13.619	765.192	765.208	0.336
950	85.179	765.351	0.177	13.590	765.213	765.229	0.315
1010	85.160	765.370	0.158	13.590	765.230	765.248	0.298
1070	85.173	765.357	0.171	13.634	765.221	765.240	0.307
1130	85.166	765.364	0.164	13.706	765.236	765.256	0.290
1190	85.166	765.364	0.164	13.764	765.241	765.263	0.287
1250	85.179	765.351	0.177	13.866	765.239	765.261	0.295
1310	85.204	765.326	0.202	13.924	765.220	765.243	0.307
1370	85.236	765.294	0.234	13.982	765.193	765.218	0.307
1430	85.274	765.256	0.272	14.054	765.163	765.188	0.307
1440	85.274	765.256	0.272	14.093	765.167	765.192	0.361

- NOTES:
1. PUMPING OF BCW-3 STARTED AT 1600 HOURS ON 12/11/91.
  2. (FT.MSL) - FEET ABOVE MEAN SEA LEVEL

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP-91-02B  
 DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER ELEVATION CORRECTED FOR	WATER ELEVATION CORRECTED FOR	CORRECTED DRAWDOWN (feet)
					BKGD. WATER LEVEL TREND (ft.MSL)	BAR. PRESS. CHANGE (ft.MSL)	
0	84.423	765.667	0.000	14.644	765.667	765.667	0.000
0.1	84.423	765.667	0.000	14.644	765.667	765.667	0.000
0.2	84.423	765.667	0.000	14.644	765.667	765.667	0.000
0.3	84.429	765.661	0.006	14.644	765.661	765.661	0.006
0.5	84.436	765.654	0.013	14.644	765.654	765.654	0.013
0.6	84.442	765.648	0.019	14.644	765.648	765.648	0.019
0.7	84.442	765.648	0.019	14.644	765.648	765.648	0.019
0.8	84.448	765.642	0.025	14.644	765.642	765.642	0.025
0.9	84.448	765.642	0.025	14.644	765.642	765.642	0.025
1	84.448	765.642	0.025	14.644	765.642	765.642	0.025
2	84.461	765.629	0.038	14.643	765.629	765.629	0.038
3	84.461	765.629	0.038	14.643	765.629	765.629	0.038
4	84.461	765.629	0.038	14.642	765.629	765.629	0.038
5	84.461	765.629	0.038	14.642	765.629	765.629	0.038
6	84.461	765.629	0.038	14.641	765.629	765.629	0.038
7	84.461	765.629	0.038	14.641	765.628	765.629	0.039
8	84.461	765.629	0.038	14.640	765.628	765.629	0.039
9	84.461	765.629	0.038	14.640	765.628	765.628	0.039
10	84.461	765.629	0.038	14.639	765.628	765.628	0.039
20	84.473	765.617	0.050	14.634	765.616	765.616	0.051
30	84.480	765.610	0.057	14.630	765.608	765.608	0.059
40	84.486	765.604	0.063	14.625	765.601	765.602	0.066
50	84.499	765.591	0.076	14.620	765.587	765.588	0.080
60	84.518	765.572	0.095	14.608	765.567	765.568	0.100
70	84.518	765.572	0.095	14.597	765.565	765.567	0.102
80	84.524	765.566	0.101	14.586	765.558	765.559	0.109
90	84.524	765.566	0.101	14.600	765.559	765.561	0.108
100	84.524	765.566	0.101	14.595	765.559	765.560	0.108
110	84.543	765.547	0.120	14.591	765.539	765.541	0.123
170	84.562	765.528	0.139	14.518	765.510	765.514	0.157
230	84.581	765.509	0.158	14.475	765.485	765.489	0.182
290	84.593	765.497	0.170	14.417	765.466	765.471	0.201
310	84.600	765.490	0.177	14.388	765.455	765.460	0.212
350	84.600	765.490	0.177	14.330	765.448	765.454	0.219
410	84.625	765.465	0.202	14.257	765.413	765.420	0.254
470	84.618	765.472	0.195	14.199	765.412	765.421	0.255
530	84.612	765.478	0.189	14.141	765.411	765.420	0.256
590	84.625	765.465	0.202	14.054	765.386	765.397	0.281
630	84.631	765.459	0.208	13.982	765.371	765.383	0.296
650	84.625	765.465	0.202	13.938	765.372	765.384	0.295

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP-91-02B  
 DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER	WATER	CORRECTED DRAWDOWN (feet)
					ELEVATION CORRECTED FOR BKGND. WATER LEVEL TREND (ft.MSL)	ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft.MSL)	
710	84.612	765.478	0.189	13.866	765.376	765.388	0.291
770	84.606	765.484	0.183	13.779	765.370	765.384	0.297
810	84.612	765.478	0.189	13.721	765.357	765.371	0.310
830	84.606	765.484	0.183	13.692	765.359	765.374	0.308
890	84.612	765.478	0.189	13.619	765.344	765.360	0.323
950	84.587	765.503	0.164	13.590	765.365	765.381	0.302
1010	84.574	765.516	0.151	13.590	765.376	765.394	0.291
1070	84.581	765.509	0.158	13.634	765.373	765.392	0.294
1130	84.574	765.516	0.151	13.706	765.388	765.408	0.279
1190	84.574	765.516	0.151	13.764	765.393	765.415	0.274
1250	84.574	765.516	0.151	13.866	765.404	765.426	0.263
1310	84.600	765.490	0.177	13.924	765.384	765.407	0.283
1370	84.625	765.465	0.202	13.982	765.364	765.389	0.303
1430	84.644	765.446	0.221	14.054	765.353	765.378	0.314
1440	84.650	765.440	0.227	14.093	765.351	765.376	0.316

- NOTES:
1. PUMPING OF BCW-3 STARTED AT 1600 HOURS ON 12/11/91.
  2. (FT.MSL) - FEET ABOVE MEAN SEA LEVEL

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 BP-91-02C  
 DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER ELEVATION CORRECTED FOR BKGND. WATER LEVEL TREND (ft.MSL)	WATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft.MSL)	CORRECTED DRAWDOWN (feet)
0	84.298	765.792	0.000	14.644	765.792	765.792	0.000
0.1	84.289	765.801	-0.009	14.644	765.801	765.801	-0.009
0.2	84.289	765.801	-0.009	14.644	765.801	765.801	-0.009
0.3	84.298	765.792	0.000	14.644	765.792	765.792	0.000
0.5	84.298	765.792	0.000	14.644	765.792	765.792	0.000
0.6	84.308	765.782	0.010	14.644	765.782	765.782	0.010
0.7	84.308	765.782	0.010	14.644	765.782	765.782	0.010
0.8	84.308	765.782	0.010	14.644	765.782	765.782	0.010
0.9	84.317	765.773	0.019	14.644	765.773	765.773	0.019
1	84.317	765.773	0.019	14.644	765.773	765.773	0.019
2	84.327	765.763	0.029	14.643	765.763	765.763	0.029
3	84.336	765.754	0.038	14.643	765.754	765.754	0.038
4	84.336	765.754	0.038	14.642	765.754	765.754	0.038
5	84.336	765.754	0.038	14.642	765.754	765.754	0.038
6	84.327	765.763	0.029	14.641	765.763	765.763	0.029
7	84.327	765.763	0.029	14.641	765.762	765.763	0.030
8	84.327	765.763	0.029	14.640	765.762	765.763	0.030
9	84.327	765.763	0.029	14.640	765.762	765.762	0.030
10	84.327	765.763	0.029	14.639	765.762	765.762	0.030
20	84.336	765.754	0.038	14.634	765.753	765.753	0.039
30	84.345	765.745	0.047	14.630	765.743	765.743	0.049
40	84.364	765.726	0.066	14.625	765.723	765.724	0.069
50	84.374	765.716	0.076	14.620	765.712	765.713	0.080
60	84.393	765.697	0.095	14.608	765.692	765.693	0.100
70	84.402	765.688	0.104	14.597	765.681	765.683	0.111
80	84.411	765.679	0.113	14.586	765.671	765.672	0.121
90	84.411	765.679	0.113	14.600	765.672	765.674	0.120
100	84.411	765.679	0.113	14.595	765.672	765.673	0.120
110	84.430	765.660	0.132	14.591	765.652	765.654	0.140
170	84.449	765.641	0.151	14.518	765.623	765.627	0.169
230	84.459	765.631	0.161	14.475	765.607	765.611	0.185
290	84.468	765.622	0.170	14.417	765.591	765.596	0.201
310	84.459	765.631	0.161	14.388	765.596	765.601	0.196
350	84.459	765.631	0.161	14.330	765.589	765.595	0.203
410	84.468	765.622	0.170	14.257	765.570	765.577	0.222
470	84.459	765.631	0.161	14.199	765.571	765.580	0.221
530	84.459	765.631	0.161	14.141	765.564	765.573	0.228
590	84.459	765.631	0.161	14.054	765.552	765.563	0.240
630	84.459	765.631	0.161	13.982	765.543	765.555	0.249
650	84.449	765.641	0.151	13.938	765.548	765.560	0.244

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP-91-02C  
 DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER ELEVATION CORRECTED FOR BKGND. WATER LEVEL TREND (ft.MSL)	WATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft.MSL)	CORRECT DRAWDO (feet)
710	84.430	765.660	0.132	13.866	765.558	765.570	C
770	84.430	765.660	0.132	13.779	765.546	765.560	C
810	84.430	765.660	0.132	13.721	765.539	765.553	C
830	84.430	765.660	0.132	13.692	765.535	765.550	C
890	84.430	765.660	0.132	13.619	765.526	765.542	C
950	84.411	765.679	0.113	13.590	765.541	765.557	C
1010	84.393	765.697	0.095	13.590	765.557	765.575	C
1070	84.402	765.688	0.104	13.634	765.552	765.571	C
1130	84.393	765.697	0.095	13.706	765.569	765.589	C
1190	84.383	765.707	0.085	13.764	765.584	765.606	C
1250	84.393	765.697	0.095	13.866	765.585	765.607	C
1310	84.411	765.679	0.113	13.924	765.573	765.596	C
1370	84.440	765.650	0.142	13.982	765.549	765.574	C
1430	84.468	765.622	0.170	14.054	765.529	765.554	C
1440	84.468	765.622	0.170	14.093	765.533	765.558	C

- NOTES:
1. PUMPING OF BCW-3 STARTED AT 1600 HOURS ON 12/11/91.
  2. (FT.MSL) - FEET ABOVE MEAN SEA LEVEL

3ADGER ARMY AMMUNITION PLANT

AQUIFER PUMPING TEST

DECEMBER 1991

BP-91-02D

DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER	WATER	CORRECTED DRAWDOWN (feet)
					ELEVATION CORRECTED FOR BKGND. WATER LEVEL TEND (ft.MSL)	ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft.MSL)	
0	84.126	765.964	0.000	14.644	765.964	765.964	0.000
0.1	84.155	765.935	0.029	14.644	765.935	765.935	0.029
0.2	84.145	765.945	0.019	14.644	765.945	765.945	0.019
0.3	84.155	765.935	0.029	14.644	765.935	765.935	0.029
0.5	84.155	765.935	0.029	14.644	765.935	765.935	0.029
0.6	84.155	765.935	0.029	14.644	765.935	765.935	0.029
0.7	84.155	765.935	0.029	14.644	765.935	765.935	0.029
0.8	84.155	765.935	0.029	14.644	765.935	765.935	0.029
0.9	84.155	765.935	0.029	14.644	765.935	765.935	0.029
1	84.164	765.926	0.038	14.644	765.926	765.926	0.038
2	84.174	765.916	0.048	14.643	765.916	765.916	0.048
3	84.174	765.916	0.048	14.643	765.916	765.916	0.048
4	84.174	765.916	0.048	14.642	765.916	765.916	0.048
5	84.174	765.916	0.048	14.642	765.916	765.916	0.048
6	84.164	765.926	0.038	14.641	765.926	765.926	0.038
7	84.164	765.926	0.038	14.641	765.925	765.926	0.039
8	84.164	765.926	0.038	14.640	765.925	765.926	0.039
9	84.174	765.916	0.048	14.640	765.915	765.915	0.049
10	84.174	765.916	0.048	14.639	765.915	765.915	0.049
20	84.183	765.907	0.057	14.634	765.906	765.906	0.058
30	84.193	765.897	0.067	14.630	765.895	765.895	0.069
40	84.212	765.878	0.086	14.625	765.875	765.876	0.089
50	84.231	765.859	0.105	14.620	765.855	765.856	0.109
60	84.240	765.850	0.114	14.608	765.845	765.846	0.119
70	84.250	765.840	0.124	14.597	765.833	765.835	0.131
80	84.250	765.840	0.124	14.586	765.832	765.833	0.132
90	84.259	765.831	0.133	14.600	765.824	765.826	0.140
100	84.250	765.840	0.124	14.595	765.833	765.834	0.131
110	84.269	765.821	0.143	14.591	765.813	765.815	0.151
170	84.250	765.840	0.124	14.518	765.822	765.826	0.142
230	84.250	765.840	0.124	14.475	765.816	765.820	0.148
290	84.250	765.840	0.124	14.417	765.809	765.814	0.155
310	84.250	765.840	0.124	14.388	765.805	765.810	0.159
350	84.250	765.840	0.124	14.330	765.798	765.804	0.166
410	84.259	765.831	0.133	14.257	765.779	765.786	0.185
470	84.259	765.831	0.133	14.199	765.771	765.780	0.193
530	84.250	765.840	0.124	14.141	765.773	765.782	0.191
590	84.250	765.840	0.124	14.054	765.761	765.772	0.203
630	84.259	765.831	0.133	13.982	765.743	765.755	0.221
650	84.250	765.840	0.124	13.938	765.747	765.759	0.217



BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP-91-02D  
 DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER ELEVATION CORRECTED FOR BKGND. WATER LEVEL TREND (ft.MSL)	WATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft.MSL)	CORRECTED DRAWDOWN (feet)
710	84.231	765.859	0.105	13.866	765.757	765.769	0.207
770	84.231	765.859	0.105	13.779	765.745	765.759	0.219
810	84.231	765.859	0.105	13.721	765.738	765.752	0.226
830	84.231	765.859	0.105	13.692	765.734	765.749	0.230
890	84.231	765.859	0.105	13.619	765.725	765.741	0.239
950	84.212	765.878	0.086	13.590	765.740	765.756	0.224
1010	84.193	765.897	0.067	13.590	765.757	765.775	0.207
1070	84.202	765.888	0.076	13.634	765.752	765.771	0.212
1130	84.193	765.897	0.067	13.706	765.769	765.789	0.195
1190	84.193	765.897	0.067	13.764	765.774	765.796	0.190
1250	84.202	765.888	0.076	13.866	765.776	765.798	0.188
1310	84.221	765.869	0.095	13.924	765.763	765.786	0.201
1370	84.250	765.840	0.124	13.982	765.739	765.764	0.225
1430	84.269	765.821	0.143	14.054	765.728	765.753	0.236
1440	84.269	765.821	0.143	14.093	765.732	765.757	0.232

- NOTES:
1. PUMPING OF BCW-3 STARTED AT 1600 HOURS ON 12/11/91.
  2. (FT.MSL) - FEET ABOVE MEAN SEA LEVEL

BADGER ARMY AMMUNITION PLANT

AQUIFER PUMPING TEST

DECEMBER 1991

BN-91-06C

DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER ELEVATION CORRECTED FOR	WATER ELEVATION CORRECTED FOR	CORRECTED DRAWDOWN (feet)
					BKGND. WATER LEVEL TREND (ft.MSL)	BAR. PRESS. CHANGE (ft.MSL)	
0	82.875	765.415	0.000	14.644	765.415	765.415	0.000
0.1	82.875	765.415	0.000	14.644	765.415	765.415	0.000
0.2	82.878	765.412	0.003	14.644	765.412	765.412	0.003
0.3	82.881	765.409	0.006	14.644	765.409	765.409	0.006
0.5	82.891	765.399	0.016	14.644	765.399	765.399	0.016
0.6	82.894	765.396	0.019	14.644	765.396	765.396	0.019
0.7	82.903	765.387	0.028	14.644	765.387	765.387	0.028
0.8	82.906	765.384	0.031	14.644	765.384	765.384	0.031
0.9	82.906	765.384	0.031	14.644	765.384	765.384	0.031
1	82.910	765.380	0.035	14.644	765.380	765.380	0.035
2	82.926	765.364	0.051	14.643	765.364	765.364	0.051
3	82.929	765.361	0.054	14.643	765.361	765.361	0.054
4	82.929	765.361	0.054	14.642	765.361	765.361	0.054
5	82.929	765.361	0.054	14.642	765.361	765.361	0.054
6	82.929	765.361	0.054	14.641	765.361	765.361	0.054
7	82.929	765.361	0.054	14.641	765.360	765.361	0.055
8	82.932	765.358	0.057	14.640	765.357	765.358	0.058
9	82.929	765.361	0.054	14.640	765.360	765.360	0.055
10	82.929	765.361	0.054	14.639	765.360	765.360	0.055
20	82.935	765.355	0.060	14.634	765.354	765.354	0.061
30	82.941	765.349	0.066	14.630	765.347	765.347	0.068
40	82.951	765.339	0.076	14.625	765.336	765.337	0.079
50	82.964	765.326	0.089	14.620	765.322	765.323	0.093
60	82.976	765.314	0.101	14.608	765.309	765.310	0.106
70	82.986	765.304	0.111	14.597	765.297	765.299	0.118
80	82.992	765.298	0.117	14.586	765.290	765.291	0.125
90	82.989	765.301	0.114	14.600	765.294	765.296	0.121
100	82.989	765.301	0.114	14.595	765.294	765.295	0.121
110	82.999	765.291	0.124	14.591	765.283	765.285	0.132
170	83.008	765.282	0.133	14.518	765.264	765.268	0.151
230	83.018	765.272	0.143	14.475	765.248	765.252	0.167
290	83.024	765.266	0.149	14.417	765.235	765.240	0.180
310	83.024	765.266	0.149	14.388	765.231	765.236	0.184
350	83.020	765.270	0.145	14.330	765.228	765.234	0.187
410	83.037	765.253	0.162	14.257	765.201	765.208	0.214
470	83.030	765.260	0.155	14.199	765.200	765.209	0.215
530	83.018	765.272	0.143	14.141	765.205	765.214	0.210
590	83.024	765.266	0.149	14.054	765.187	765.198	0.228
630	83.027	765.263	0.152	13.982	765.175	765.187	0.240
650	83.024	765.266	0.149	13.938	765.173	765.185	0.242

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBN-91-06C  
 DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER ELEVATION CORRECTED FOR	WATER ELEVATION CORRECTED FOR	CORRECTED DRAWDOWN (feet)
					BKGD. WATER LEVEL TREND (ft.MSL)	BAR. PRESS. CHANGE (ft.MSL)	
710	83.002	765.288	0.127	13.866	765.186	765.198	0.229
770	82.999	765.291	0.124	13.779	765.177	765.191	0.238
810	83.002	765.288	0.127	13.721	765.167	765.181	0.248
830	82.995	765.295	0.120	13.692	765.170	765.185	0.245
890	83.002	765.288	0.127	13.619	765.154	765.170	0.261
950	82.980	765.310	0.105	13.590	765.172	765.188	0.243
1010	82.957	765.333	0.082	13.590	765.193	765.211	0.222
1070	82.973	765.317	0.098	13.634	765.181	765.200	0.234
1130	82.970	765.320	0.095	13.706	765.192	765.212	0.223
1190	82.967	765.323	0.092	13.764	765.200	765.222	0.215
1250	82.976	765.314	0.101	13.866	765.202	765.224	0.213
1310	83.005	765.285	0.130	13.924	765.179	765.202	0.236
1370	83.046	765.244	0.171	13.982	765.143	765.168	0.272
1430	83.081	765.209	0.206	14.054	765.116	765.141	0.299
1440	83.084	765.206	0.209	14.093	765.117	765.142	0.298

- NOTES:
1. PUMPING OF BCW-3 STARTED AT 1600 HOURS ON 12/11/91.
  2. (FT.MSL) - FEET ABOVE MEAN SEA LEVEL

ADGER ARMY AMMUNITION PLANT

AQUIFER PUMPING TEST

DECEMBER 1991

BN-91-06D

DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER	WATER	CORRECTED DRAWDOWN (feet)
					ELEVATION CORRECTED FOR BKGND. WATER LEVEL TREND (ft.MSL)	ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft.MSL)	
0	82.055	765.445	0.000	14.644	765.445	765.445	0.000
0.1	82.055	765.445	0.000	14.644	765.445	765.445	0.000
0.2	82.055	765.445	0.000	14.644	765.445	765.445	0.000
0.3	82.062	765.438	0.007	14.644	765.438	765.438	0.007
0.5	82.071	765.429	0.016	14.644	765.429	765.429	0.016
0.6	82.074	765.426	0.019	14.644	765.426	765.426	0.019
0.7	82.084	765.416	0.029	14.644	765.416	765.416	0.029
0.8	82.087	765.413	0.032	14.644	765.413	765.413	0.032
0.9	82.087	765.413	0.032	14.644	765.413	765.413	0.032
1	82.090	765.41	0.035	14.644	765.410	765.410	0.035
2	82.106	765.394	0.051	14.643	765.394	765.394	0.051
3	82.106	765.394	0.051	14.643	765.394	765.394	0.051
4	82.109	765.391	0.054	14.642	765.391	765.391	0.054
5	82.109	765.391	0.054	14.642	765.391	765.391	0.054
6	82.109	765.391	0.054	14.641	765.391	765.391	0.054
7	82.109	765.391	0.054	14.641	765.390	765.391	0.055
8	82.109	765.391	0.054	14.640	765.390	765.391	0.055
9	82.109	765.391	0.054	14.640	765.390	765.390	0.055
10	82.109	765.391	0.054	14.639	765.390	765.390	0.055
20	82.116	765.384	0.061	14.634	765.383	765.383	0.062
30	82.119	765.381	0.064	14.630	765.379	765.379	0.066
40	82.128	765.372	0.073	14.625	765.369	765.370	0.076
50	82.141	765.359	0.086	14.620	765.355	765.356	0.090
60	82.154	765.346	0.099	14.608	765.341	765.342	0.104
70	82.160	765.34	0.105	14.597	765.333	765.335	0.112
80	82.166	765.334	0.111	14.586	765.326	765.327	0.119
90	82.163	765.337	0.108	14.600	765.330	765.332	0.115
100	82.163	765.337	0.108	14.595	765.330	765.331	0.115
110	82.173	765.327	0.118	14.591	765.319	765.321	0.126
170	82.179	765.321	0.124	14.518	765.303	765.307	0.142
230	82.189	765.311	0.134	14.475	765.287	765.291	0.158
290	82.195	765.305	0.140	14.417	765.274	765.279	0.171
310	82.195	765.305	0.140	14.388	765.270	765.275	0.175
350	82.192	765.308	0.137	14.330	765.266	765.272	0.179
410	82.211	765.289	0.156	14.257	765.237	765.244	0.208
470	82.201	765.299	0.146	14.199	765.239	765.248	0.206
530	82.192	765.308	0.137	14.141	765.241	765.250	0.204
590	82.201	765.299	0.146	14.054	765.220	765.231	0.225
630	82.204	765.296	0.149	13.982	765.208	765.220	0.237
550	82.201	765.299	0.146	13.938	765.206	765.218	0.239

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBN-91-06D  
 DRAWDOWN DATA

ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)	DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	WATER ELEVATION CORRECTED FOR BKGND. WATER LEVEL TREND (ft.MSL)	WATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft.MSL)	CORRECTED DRAWDOWN (feet)
710	82.179	765.321	0.124	13.866	765.219	765.231	0.226
770	82.173	765.327	0.118	13.779	765.213	765.227	0.232
810	82.176	765.324	0.121	13.721	765.203	765.217	0.242
830	82.173	765.327	0.118	13.692	765.202	765.217	0.243
890	82.176	765.324	0.121	13.619	765.190	765.206	0.255
950	82.150	765.35	0.095	13.590	765.212	765.228	0.233
1010	82.131	765.369	0.076	13.590	765.229	765.247	0.216
1070	82.147	765.353	0.092	13.634	765.217	765.236	0.228
1130	82.141	765.359	0.086	13.706	765.231	765.251	0.214
1190	82.141	765.359	0.086	13.764	765.236	765.258	0.209
1250	82.150	765.35	0.095	13.866	765.238	765.260	0.207
1310	82.179	765.321	0.124	13.924	765.215	765.238	0.230
1370	82.217	765.283	0.162	13.982	765.182	765.207	0.263
1430	82.249	765.251	0.194	14.054	765.158	765.183	0.287
1440	82.255	765.245	0.200	14.093	765.156	765.181	0.289

- NOTES:
1. PUMPING OF BCW-3 STARTED AT 1600 HOURS ON 12/11/91.
  2. (FT. MSL) - FEET ABOVE MEAN SEA LEVEL

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 BCW-3  
 DRAWDOWN DATA

BCW-3		
ELAPSED TIME		
SINCE START	DEPTH TO	WATER
OF PUMPING	WATER	ELEVATION
(min)	(feet)	(ft.MSL)
0	85.089	764.911
0 0166	85.073	764.927
0 025	85.073	764.927
0 0333	85.073	764.927
0 0416	87.474	762.526
0 05	87.300	762.700
0 0583	88.185	761.815
0 0666	88.927	761.073
0 075	89.875	760.125
0 0833	90.364	759.636
0 1	91.454	758.546
0 1166	92.197	757.803
0 1333	92.623	757.377
0 15	92.497	757.503
0 1666	92.449	757.551
0 1833	92.623	757.377
0 2	92.670	757.330
0 2166	92.860	757.140
0 2333	93.002	756.998
0 25	93.128	756.872
0 2666	93.318	756.682
0 2833	93.476	756.524
0 3	93.650	756.350
0 3166	93.760	756.240
0 3333	93.808	756.192
0 4166	94.187	755.813
0 5	94.392	755.608
0 5833	94.503	755.497
0 6666	94.582	755.418
0 75	94.724	755.276
0 8333	94.897	755.103
0 9166	94.976	755.024
1	95.119	754.881
1 0833	95.134	754.866
1 1666	95.198	754.802
1 25	95.245	754.755
1 3333	95.245	754.755
1 4166	95.340	754.660
1 5	95.355	754.645
1 5833	95.324	754.676

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 BCW - 3  
 DRAWDOWN DATA

BCW-3		
ELAPSED TIME	DEPTH TO	WATER
SINCE START	WATER	ELEVATION
OF PUMPING		
(min)	(feet)	(ft.MSL)
1.6666	95.371	754.629
1.75	95.355	754.645
1.8333	95.292	754.708
1.9166	95.292	754.708
2	95.324	754.676
2.5	95.387	754.613
3	95.419	754.581
3.5	95.450	754.550
4	95.466	754.534
4.5	95.419	754.581
5	95.434	754.566
5.5	95.450	754.550
6	95.450	754.550
6.5	95.466	754.534
7	95.403	754.597
7.5	95.419	754.581
8	95.355	754.645
8.5	95.434	754.566
9	95.434	754.566
9.5	95.355	754.645
10	95.371	754.629
12	95.403	754.597
14	95.355	754.645
16	95.34	754.660
18	95.45	754.550
20	95.371	754.629
22	95.387	754.613
24	95.355	754.645
26	95.482	754.518
28	95.45	754.550
30	95.403	754.597
32	95.434	754.566
34	95.482	754.518
36	95.466	754.534
38	95.434	754.566
40	95.419	754.581
42	95.466	754.534
44	95.482	754.518
46	95.466	754.534
48	95.434	754.534

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 BCW-3  
 DRAWDOWN DATA

BCW-3		
ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft. MSL)
50	95.466	754.534
52	95.513	754.487
54	95.498	754.502
56	95.577	754.423
58	95.545	754.455
60	95.545	754.455
62	95.529	754.471
64	95.513	754.487
66	95.561	754.439
68	95.561	754.439
70	95.577	754.423
72	95.545	754.455
74	95.561	754.439
76	95.577	754.423
78	95.577	754.423
80	95.513	754.487
82	95.545	754.455
84	95.561	754.439
86	95.561	754.439
88	95.513	754.487
90	95.545	754.455
92	95.561	754.439
94	95.561	754.439
96	95.561	754.439
98	95.529	754.471
100	95.561	754.439
110	95.577	754.423
120	95.608	754.392
130	95.656	754.344
140	95.624	754.376
150	95.434	754.566
160	95.419	754.581
170	95.419	754.581
180	95.387	754.613
190	95.466	754.534
200	95.45	754.550
210	95.419	754.581
220	95.419	754.581
230	95.45	754.550
240	95.482	754.518



BADGER ARMY AMMUNITION PLANT  
AQUIFER PUMPING TEST  
DECEMBER 1991  
BCW-3  
DRAWDOWN DATA

BCW-3		
ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)
250	95.434	754.566
260	95.466	754.534
270	95.498	754.502
280	95.434	754.566
290	95.482	754.518
300	95.466	754.534
310	95.466	754.534
320	95.498	754.502
330	95.513	754.487
340	95.419	754.581
350	95.513	754.487
360	95.466	754.534
370	95.466	754.534
380	95.513	754.487
390	95.482	754.518
400	95.466	754.534
410	95.529	754.471
420	95.498	754.502
430	95.529	754.471
440	95.482	754.518
450	95.482	754.518
460	95.529	754.471
470	95.529	754.471
480	95.513	754.487
490	95.466	754.534
500	95.466	754.534
510	95.482	754.518
520	95.466	754.534
530	95.466	754.534
540	95.513	754.487
550	95.513	754.487
560	95.498	754.502
570	95.466	754.534
580	95.529	754.471
590	95.529	754.471
600	95.513	754.487
610	95.466	754.534
620	95.466	754.534
630	95.498	754.502
640	95.498	754.502

BERGNER ARMY AMMUNITION PLANT  
AQUIFER PUMPING TEST  
DECEMBER 1991  
BCW-3  
DRAWDOWN DATA

BCW-3		
ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)
650	95.513	754.487
660	95.466	754.534
670	95.466	754.534
680	95.482	754.518
690	95.529	754.471
700	95.482	754.518
710	95.482	754.518
720	95.45	754.550
730	95.482	754.518
740	95.498	754.502
750	95.434	754.566
760	95.482	754.518
770	95.498	754.502
780	95.513	754.487
790	95.482	754.518
800	95.466	754.534
810	95.45	754.550
820	95.466	754.534
830	95.466	754.534
840	95.498	754.502
850	95.434	754.566
860	95.466	754.534
870	95.466	754.534
880	95.466	754.534
890	95.466	754.534
900	95.466	754.534
910	95.498	754.502
920	95.45	754.550
930	95.403	754.597
940	95.45	754.550
950	95.434	754.566
960	95.45	754.550
970	95.466	754.534
980	95.498	754.502
990	95.45	754.550
1000	95.419	754.581
1010	95.419	754.581

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 BCW-3  
 DRAWDOWN DATA

BCW-3		
ELAPSED TIME	DEPTH TO	WATER
SINCE START	WATER	ELEVATION
OF PUMPING		
(min)	(feet)	(ft.MSL)
1020	95.466	754.534
1030	95.45	754.550
1040	95.387	754.613
1050	95.45	754.550
1060	95.387	754.613
1070	95.403	754.597
1080	95.434	754.566
1090	95.45	754.550
1100	95.419	754.581
1110	95.482	754.518
1120	95.419	754.581
1130	95.45	754.550
1140	95.419	754.581
1150	95.45	754.550
1160	95.45	754.550
1170	95.45	754.550
1180	95.45	754.550
1190	95.466	754.534
1200	95.45	754.550
1210	95.45	754.550
1220	95.419	754.581
1230	95.434	754.566
1240	95.45	754.550
1250	95.403	754.597
1260	95.45	754.550
1270	95.45	754.550
1280	95.45	754.550
1290	95.482	754.518
1300	95.45	754.550
1310	95.466	754.534
1320	95.513	754.487
1330	95.45	754.550
1340	95.513	754.487
1350	95.498	754.502
1360	95.498	754.502
1370	95.498	754.502
1380	95.529	754.471
1390	95.529	754.471

BADGER ARMY AMMUNITION PLANT  
AQUIFER PUMPING TEST  
DECEMBER 1991  
BCW-3  
DRAWDOWN DATA

BCW-3		
ELAPSED TIME SINCE START OF PUMPING (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft. MSL)
1400	95.498	754.502
1410	95.561	754.439
1420	95.513	754.487
1430	95.561	754.439
1440	95.561	754.439

- NOTES:
1. PUMPING OF BCW-3 STARTED AT 1600hrs ON 12/11/91.
  2. (FT.MSL) - FEET ABOVE MEAN SEA LEVEL.

RAW AND ADJUSTED RECOVERY DATA

AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PRP - 91 - 01B  
 RECOVERY DATA

ELAPSED TIME SINCE 1200 HRS ON 12:5:91 (min)	t TIME SINCE PUMP ON (min)	t TIME SINCE PUMP OFF (min)	t TIME SINCE PUMP OFF (min)	V/t (ft <sup>3</sup> /min)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	RESIDUAL DRAWDOWN (feet)	s' DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. (ft,MSL)		CORRECTED RESIDUAL DRAWDOWN (feet)
										GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. AND BKGD. WATER LEVEL TREND	
10350.0	1470	0.0	0.0	-	85.41	765.12	0.42	14.091	14.091	765.06	765.033	0.506
10350.1	1470.1	0.1	0.1	14701.0	85.41	765.12	0.42	14.091	14.091	765.06	765.033	0.506
10350.2	1470.2	0.2	0.2	7351.0	85.41	765.12	0.42	14.091	14.091	765.05	765.027	0.512
10350.3	1470.3	0.3	0.3	4901.0	85.41	765.12	0.42	14.091	14.091	765.06	765.033	0.506
10350.4	1470.4	0.4	0.4	3529.6	85.39	765.14	0.40	14.091	14.091	765.08	765.052	0.487
10350.5	1470.5	0.5	0.5	2941.0	85.36	765.17	0.37	14.091	14.091	765.11	765.083	0.456
10350.6	1470.6	0.6	0.6	2521.1	85.33	765.21	0.33	14.091	14.091	765.14	765.115	0.424
10350.7	1470.7	0.7	0.7	2206.2	85.31	765.22	0.31	14.091	14.091	765.16	765.134	0.405
10350.8	1470.8	0.8	0.8	1785.1	85.28	765.26	0.28	14.091	14.091	765.19	765.165	0.374
10350.9	1470.9	0.9	0.9	1604.8	85.27	765.26	0.28	14.091	14.091	765.20	765.172	0.367
10351	1471	1	1	1471.0	85.26	765.27	0.27	14.092	14.092	765.21	765.184	0.355
10352	1472	2	2	736.0	85.22	765.31	0.23	14.093	14.093	765.24	765.216	0.323
10353	1473	3	3	491.0	85.22	765.31	0.23	14.094	14.094	765.25	765.222	0.317
10354	1474	4	4	368.5	85.22	765.31	0.23	14.094	14.094	765.25	765.222	0.317
10355	1475	5	5	295.0	85.21	765.32	0.22	14.095	14.095	765.25	765.228	0.311
10356	1476	6	6	246.0	85.21	765.32	0.22	14.096	14.096	765.25	765.229	0.310
10357	1477	7	7	211.0	85.21	765.32	0.22	14.097	14.097	765.25	765.229	0.310
10358	1478	8	8	184.8	85.21	765.32	0.22	14.098	14.098	765.26	765.229	0.310
10359	1479	9	9	164.3	85.21	765.32	0.22	14.099	14.099	765.26	765.229	0.310
10360	1480	10	10	148.0	85.21	765.32	0.22	14.100	14.100	765.26	765.229	0.310
10370	1490	20	20	74.5	85.20	765.33	0.21	14.110	14.110	765.27	765.243	0.296
10380	1500	30	30	50.0	85.19	765.34	0.20	14.118	14.118	765.28	765.257	0.282
10390	1510	40	40	37.8	85.19	765.34	0.20	14.126	14.126	765.28	765.257	0.282
10400	1520	50	50	30.4	85.19	765.34	0.20	14.134	14.134	765.29	765.258	0.281
10410	1530	60	60	25.5	85.19	765.34	0.20	14.142	14.142	765.29	765.259	0.280
10420	1540	70	70	22.0	85.17	765.36	0.18	14.151	14.151	765.30	765.272	0.267
10430	1550	80	80	19.4	85.17	765.36	0.18	14.159	14.159	765.31	765.279	0.260
10440	1560	90	90	17.3	85.17	765.36	0.18	14.167	14.167	765.31	765.280	0.259
10450	1570	100	100	15.7	85.17	765.36	0.18	14.175	14.175	765.30	765.274	0.265
10500	1620	150	150	10.8	85.16	765.37	0.17	14.215	14.215	765.32	765.291	0.248
10550	1670	200	200	8.4	85.15	765.38	0.16	14.255	14.255	765.34	765.307	0.232
10600	1720	250	250	6.9	85.14	765.39	0.14	14.276	14.276	765.35	765.321	0.218
10650	1770	300	300	5.9	85.14	765.39	0.14	14.298	14.298	765.35	765.323	0.216
10700	1820	350	350	5.2	85.13	765.40	0.14	14.319	14.319	765.36	765.330	0.209
10750	1870	400	400	4.7	85.11	765.42	0.12	14.340	14.340	765.38	765.351	0.188
10800	1920	450	450	4.3	85.10	765.43	0.11	14.361	14.361	765.39	765.359	0.180
10850	1970	500	500	3.9	85.10	765.43	0.11	14.382	14.382	765.40	765.361	0.178
10900	2020	550	550	3.7	85.10	765.43	0.11	14.403	14.403	765.40	765.368	0.171
10950	2070	600	600	3.5	85.09	765.44	0.10	14.424	14.424	765.41	765.376	0.163
11000	2120	650	650	3.3	85.08	765.45	0.09	14.446	14.446	765.43	765.390	0.149
11050	2170	700	700	3.1	85.08	765.45	0.09	14.445	14.445	765.43	765.384	0.150
11100	2220	750	750	3.0	85.08	765.45	0.09	14.428	14.428	765.43	765.387	0.152
11150	2270	800	800	2.8	85.07	765.46	0.08	14.402	14.402	765.43	765.389	0.150
11200	2320	850	850	2.7	85.07	765.46	0.08	14.378	14.378	765.43	765.392	0.147

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP-91-01B  
 RECOVERY DATA

ELAPSED TIME SINCE 1200hrs ON 12/5/91 (min)	↑ TIME SINCE PUMP ON (min)	↑ TIME SINCE PUMP OFF (min)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	RESIDUAL DRAWDOWN (feet)	s' RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS.		CORRECTED RESIDUAL DRAWDOWN (feet)
								GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. (ft,MSL)	AND BKGND. WATER LEVEL TREND (ft,MSL)	
11250	2370	900	85.06	765.47	0.07	14.355	765.44	765.394	0.145	
11300	2420	950	85.07	765.46	0.08	14.344	765.43	765.386	0.153	
11350	2470	1000	85.07	765.46	0.08	14.344	765.43	765.385	0.154	
11450	2570	1100	85.04	765.49	0.05	14.337	765.45	765.408	0.131	
11510	2630	1160	85.03	765.50	0.04	14.330	765.46	765.418	0.121	
11570	2690	1220	85.02	765.51	0.03	14.316	765.48	765.428	0.111	

ACQUICLIF PUMPING TEST  
 DECEMBER 1991  
 PRP-91 01C  
 RECOVERY DATA

ELAPSED TIME SINCE 1200HSON 12:51:91 (min)	t TIME SINCE PUMP ON (min)	t TIME SINCE PUMP OFF (min)	y' (feet)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. AND BKGND WATER LEVEL TREND (ft,MSL)		CORRECTED RESIDUAL DRAWDOWN (feet)
								ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft,MSL)	ELEVATION CORRECTED FOR BAR. PRESS. AND BKGND WATER LEVEL TREND (ft,MSL)	
10350.0	1470	0.0	-	85.29	765.24	0.34	14.091	765.18	765.150	0.425
10350.1	1470.1	0.1	14701.0	85.29	765.24	0.34	14.091	765.18	765.150	0.425
10350.2	1470.2	0.2	7351.0	85.29	765.24	0.34	14.091	765.18	765.150	0.425
10350.3	1470.3	0.3	4901.0	85.29	765.24	0.34	14.091	765.18	765.150	0.425
10350.4	1470.4	0.4	3529.6	85.28	765.25	0.32	14.091	765.19	765.162	0.413
10350.5	1470.5	0.5	2941.0	85.25	765.28	0.30	14.091	765.21	765.188	0.387
10350.6	1470.6	0.6	2521.1	85.23	765.30	0.28	14.091	765.23	765.207	0.368
10350.7	1470.7	0.7	2206.2	85.22	765.31	0.27	14.091	765.25	765.219	0.356
10350.8	1470.8	0.8	1765.1	85.20	765.33	0.25	14.091	765.26	765.238	0.337
10350.9	1470.9	0.9	1604.8	85.19	765.34	0.23	14.091	765.28	765.251	0.324
10351	1471	1	1471.0	85.18	765.35	0.23	14.092	765.28	765.257	0.318
10352	1472	2	736.0	85.16	765.37	0.20	14.093	765.31	765.283	0.292
10353	1473	3	491.0	85.15	765.38	0.20	14.094	765.32	765.289	0.286
10354	1474	4	368.5	85.15	765.39	0.19	14.094	765.32	765.295	0.280
10355	1475	5	295.0	85.15	765.39	0.19	14.095	765.32	765.295	0.280
10356	1476	6	246.0	85.15	765.39	0.19	14.096	765.32	765.296	0.279
10357	1477	7	211.0	85.15	765.39	0.19	14.097	765.32	765.296	0.279
10358	1478	8	184.8	85.14	765.39	0.18	14.098	765.33	765.303	0.272
10359	1479	9	164.3	85.14	765.39	0.18	14.099	765.33	765.303	0.272
10360	1480	10	148.0	85.15	765.39	0.18	14.100	765.32	765.296	0.279
10370	1490	20	74.5	85.13	765.40	0.18	14.110	765.34	765.310	0.265
10380	1500	30	50.0	85.13	765.40	0.17	14.118	765.34	765.317	0.258
10390	1510	40	37.8	85.13	765.40	0.18	14.126	765.34	765.311	0.264
10400	1520	50	30.4	85.13	765.40	0.17	14.134	765.35	765.318	0.257
10410	1530	60	25.5	85.13	765.40	0.18	14.142	765.34	765.313	0.262
10420	1540	70	22.0	85.12	765.41	0.17	14.151	765.35	765.326	0.249
10430	1550	80	19.4	85.11	765.42	0.16	14.159	765.36	765.333	0.242
10440	1560	90	17.3	85.12	765.41	0.17	14.167	765.35	765.327	0.248
10450	1570	100	15.7	85.13	765.40	0.17	14.175	765.35	765.322	0.253
10500	1620	150	10.8	85.11	765.42	0.16	14.215	765.37	765.339	0.236
10550	1670	200	8.4	85.10	765.43	0.15	14.255	765.38	765.354	0.221
10600	1720	250	6.9	85.10	765.43	0.15	14.276	765.39	765.356	0.219
10650	1770	300	5.9	85.09	765.44	0.14	14.298	765.40	765.365	0.210
10700	1820	350	5.2	85.09	765.44	0.14	14.319	765.40	765.366	0.209
10750	1870	400	4.7	85.07	765.46	0.11	14.340	765.43	765.393	0.182
10800	1920	450	4.3	85.06	765.47	0.11	14.361	765.43	765.400	0.175
10850	1970	500	3.9	85.05	765.47	0.11	14.382	765.44	765.402	0.173
10900	2020	550	3.7	85.06	765.47	0.11	14.403	765.44	765.403	0.172
10950	2070	600	3.5	85.06	765.47	0.10	14.424	765.45	765.412	0.163
11000	2120	650	3.3	85.04	765.49	0.08	14.446	765.47	765.432	0.143
11050	2170	700	3.1	85.04	765.49	0.08	14.445	765.47	765.431	0.144
11100	2220	750	3.0	85.04	765.49	0.07	14.479	765.46	765.422	0.153
11150	2270	800	2.8	85.03	765.50	0.08	14.492	765.47	765.431	0.144



RADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 FBP - 91 - 01C  
 RECOVERY DATA

ELAPSED TIME SINCE 1200hrs ON 12/5/91 (min)	t TIME SINCE PUMP ON (min)	t TIME SINCE PUMP OFF (min)	v'	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet MSL)	RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER CORRECTED FOR ELEVATION		CORRECTED RESIDUAL DRAWDOWN (feet)
								BAR. PRESS. AND BKGND WATER LEVEL TREND (ft. MSL)	CHANGE (ft. MSL)	
11200	2320	850	2.7	85.03	765.51	0.07	14.378	765.47	765.433	0.142
11250	2370	900	2.6	85.02	765.51	0.06	14.355	765.48	765.436	0.139
11300	2420	950	2.5	85.03	765.50	0.08	14.344	765.46	765.421	0.154
11350	2470	1000	2.5	85.01	765.52	0.06	14.344	765.48	765.439	0.136
11450	2570	1100	2.3	84.99	765.54	0.04	14.337	765.50	765.456	0.119
11510	2630	1160	2.3	84.98	765.55	0.03	14.330	765.51	765.467	0.108
11570	2690	1220	2.2	84.97	765.56	0.01	14.316	765.52	765.476	0.099

AQUIFER PUMPING TEST  
 DECEMBER 1991  
 FBP 91-01D  
 RECOVERY DATA

ELAPSED TIME SINCE 12:59:01 (min)	TIME SINCE PUMPON (min)	TIME SINCE PUMPOFF (min)	DEPTH TO WATER FROM TOP OF CASE (ft)	GROUNDWATER ELEVATION (feet,MSL)	RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION BAR. PRESS. CHANGE (ft,MSL)	GROUNDWATER ELEVATION AND BKGND. WATER LEVEL TREND (ft,MSL)	CORRECTED RESIDUAL DRAWDOWN (feet)
10350.0	1470	0.0	85.28	765.25	0.28	14.091	765.19	765.160	0.368
10350.1	1470.1	0.1	85.28	765.25	0.28	14.091	765.19	765.160	0.368
10350.2	1470.2	0.2	85.29	765.24	0.29	14.091	765.18	765.153	0.375
10350.3	1470.3	0.3	85.29	765.24	0.29	14.091	765.18	765.153	0.375
10350.4	1470.4	0.4	85.28	765.25	0.28	14.091	765.19	765.160	0.368
10350.5	1470.5	0.5	85.27	765.26	0.27	14.091	765.20	765.172	0.356
10350.6	1470.6	0.6	85.26	765.28	0.25	14.091	765.21	765.185	0.343
10350.7	1470.7	0.7	85.24	765.29	0.24	14.091	765.22	765.198	0.330
10350.8	1470.8	0.8	85.23	765.30	0.23	14.091	765.24	765.210	0.318
10350.9	1470.9	0.9	85.22	765.31	0.22	14.091	765.24	765.217	0.311
10351	1471	1	85.21	765.32	0.21	14.092	765.26	765.229	0.299
10352	1472	2	85.19	765.35	0.18	14.093	765.28	765.255	0.273
10353	1473	3	85.18	765.35	0.18	14.094	765.29	765.261	0.267
10354	1474	4	85.18	765.35	0.18	14.094	765.29	765.261	0.267
10355	1475	5	85.17	765.36	0.17	14.095	765.29	765.267	0.261
10356	1476	6	85.17	765.36	0.17	14.096	765.29	765.268	0.260
10357	1477	7	85.17	765.36	0.17	14.097	765.29	765.268	0.260
10358	1478	8	85.17	765.36	0.17	14.098	765.29	765.268	0.260
10359	1479	9	85.17	765.36	0.17	14.099	765.29	765.268	0.260
10360	1480	10	85.17	765.36	0.17	14.100	765.29	765.268	0.260
10370	1490	20	85.16	765.37	0.16	14.110	765.31	765.282	0.246
10380	1500	30	85.16	765.37	0.16	14.118	765.31	765.283	0.245
10390	1510	40	85.17	765.36	0.16	14.126	765.30	765.277	0.251
10400	1520	50	85.17	765.36	0.16	14.134	765.31	765.278	0.250
10410	1530	60	85.17	765.36	0.16	14.142	765.31	765.279	0.249
10420	1540	70	85.15	765.38	0.15	14.151	765.32	765.292	0.236
10430	1550	80	85.15	765.38	0.15	14.159	765.33	765.299	0.229
10440	1560	90	85.15	765.38	0.15	14.167	765.33	765.293	0.235
10450	1570	100	85.16	765.37	0.16	14.175	765.32	765.288	0.240
10500	1620	150	85.15	765.38	0.15	14.215	765.33	765.298	0.230
10550	1670	200	84	765.39	0.14	14.255	765.34	765.314	0.214
10600	1720	250	69	765.40	0.13	14.276	765.35	765.322	0.206
10650	1770	300	59	765.40	0.13	14.298	765.36	765.324	0.204
10700	1820	350	52	765.40	0.13	14.319	765.36	765.332	0.196
10750	1870	400	47	765.41	0.11	14.340	765.38	765.346	0.182
10800	1920	450	43	765.42	0.11	14.361	765.39	765.353	0.175
10850	1970	500	39	765.42	0.11	14.382	765.39	765.355	0.173
10900	2020	550	37	765.42	0.11	14.403	765.39	765.356	0.172
10950	2070	600	35	765.43	0.10	14.424	765.40	765.365	0.163
11000	2120	650	33	765.45	0.08	14.446	765.42	765.385	0.143
11070	2170	700	31	765.45	0.08	14.445	765.42	765.384	0.144
11100	2220	750	30	765.44	0.09	14.483	765.41	765.375	0.153
11150	2270	800	30	765.45	0.09	14.482	765.42	765.378	0.150
11200	2320	850	27	765.45	0.08	14.478	765.42	765.360	0.148

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PRP-91-01D  
 RECOVERY DATA

ELAPSED TIME SINCE 12:00hrs ON 12:591 (min)	↑ TIME SINCE PUMP ON (min)	↑ TIME SINCE PUMP OFF (min)	Vt (min)	DEPTH TO WATER		RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION CHANGE (ft,MSL)		GROUNDWATER ELEVATION AND BKGND. WATER LEVEL TREND (ft,MSL)		CORRECTED RESIDUAL DRAWDOWN (feet)
				FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)			BAR. PRESS. CHANGE (ft,MSL)	BAR. PRESS. AND LEVEL TREND (ft,MSL)			
11250	2370	900	2.6	85.07	765.46	0.07	14.355	765.42	765.382	0.146		
11300	2420	950	2.5	85.08	765.45	0.08	14.344	765.42	765.374	0.154		
11350	2470	1000	2.5	85.07	765.47	0.06	14.344	765.43	765.386	0.112		
11450	2570	1100	2.3	85.05	765.48	0.04	14.337	765.45	765.403	0.08		
11510	2630	1160	2.3	85.03	765.50	0.03	14.330	765.46	765.413	0.09		
11570	2690	1220	2.2	85.02	765.51	0.02	14.316	765.47	765.423	0.105		

ARTISIAN PUMPING TEST  
 DECEMBER 1991  
 PFP 91-02B  
 RECOVERY DATA

ELAPSED TIME SINCE 12:59:01 (min)	t TIME SINCE PUMP ON (min)	t TIME SINCE PUMP OFF (min)	ψ'	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft,MSL)	GROUNDWATER ELEVATION CORRECTED FOR BAR PRESS AND BKGND. WATER LEVEL TREND (ft,MSL)	CORRECTED RESIDUAL DRAWDOWN (feet)
10350.0	1470	0.0	-	84.66	765.43	0.23	14.091	765.37	765.344	0.323
10350.1	1470.1	0.1	14701.0	84.66	765.43	0.24	14.091	765.36	765.337	0.330
10350.2	1470.2	0.2	7351.0	84.66	765.43	0.23	14.091	765.37	765.344	0.323
10350.3	1470.3	0.3	4901.0	84.66	765.43	0.23	14.091	765.37	765.344	0.323
10350.4	1470.4	0.4	3529.6	84.66	765.43	0.23	14.091	765.37	765.344	0.323
10350.5	1470.5	0.5	2941.0	84.65	765.44	0.23	14.091	765.38	765.350	0.317
10350.6	1470.6	0.6	2521.1	84.64	765.45	0.22	14.091	765.38	765.355	0.311
10350.7	1470.7	0.7	2206.2	84.64	765.45	0.21	14.091	765.39	765.363	0.304
10350.8	1470.8	0.8	1765.1	84.63	765.46	0.21	14.091	765.40	765.369	0.298
10350.9	1470.9	0.9	1604.8	84.63	765.46	0.21	14.091	765.40	765.369	0.298
10351	1471	1	1471.0	84.63	765.47	0.20	14.092	765.40	765.375	0.292
10352	1472	2	736.0	84.61	765.48	0.19	14.093	765.41	765.388	0.279
10353	1473	3	491.0	84.61	765.48	0.18	14.094	765.42	765.394	0.273
10354	1474	4	368.5	84.61	765.48	0.18	14.094	765.42	765.394	0.273
10355	1475	5	295.0	84.60	765.49	0.18	14.095	765.43	765.400	0.267
10356	1476	6	246.0	84.61	765.48	0.18	14.096	765.42	765.395	0.272
10357	1477	7	211.0	84.60	765.49	0.18	14.097	765.43	765.401	0.266
10358	1478	8	184.8	84.60	765.49	0.18	14.098	765.43	765.401	0.266
10359	1479	9	164.3	84.60	765.49	0.18	14.099	765.43	765.401	0.266
10360	1480	10	148.0	84.61	765.48	0.18	14.100	765.42	765.395	0.272
10370	1490	20	74.5	84.59	765.50	0.17	14.110	765.44	765.409	0.258
10380	1500	30	50.0	84.59	765.50	0.17	14.118	765.44	765.410	0.257
10390	1510	40	37.8	84.59	765.50	0.17	14.126	765.44	765.410	0.257
10400	1520	50	30.4	84.59	765.50	0.17	14.134	765.44	765.411	0.256
10410	1530	60	25.5	84.59	765.50	0.17	14.142	765.44	765.412	0.255
10420	1540	70	22.0	84.58	765.51	0.16	14.151	765.45	765.425	0.242
10430	1550	80	19.4	84.57	765.52	0.15	14.159	765.46	765.432	0.235
10440	1560	90	17.3	84.58	765.51	0.16	14.167	765.45	765.426	0.241
10450	1570	100	15.7	84.59	765.50	0.16	14.175	765.45	765.421	0.246
10500	1620	150	10.8	84.58	765.51	0.16	14.215	765.46	765.431	0.236
10550	1670	200	8.4	84.57	765.52	0.15	14.255	765.47	765.441	0.226
10600	1720	250	6.9	84.57	765.52	0.14	14.276	765.48	765.449	0.218
10650	1770	300	5.9	84.56	765.53	0.14	14.298	765.49	765.457	0.210
10700	1820	350	5.2	84.56	765.54	0.13	14.319	765.50	765.465	0.202
10750	1870	400	4.7	84.54	765.55	0.12	14.340	765.51	765.479	0.188
10800	1920	450	4.3	84.54	765.55	0.11	14.361	765.52	765.487	0.180
10850	1970	500	3.9	84.54	765.55	0.11	14.382	765.52	765.489	0.178
10900	2020	550	3.7	84.54	765.55	0.11	14.403	765.53	765.490	0.177
10950	2070	600	3.5	84.52	765.57	0.10	14.424	765.54	765.504	0.163
11000	2120	650	3.3	84.51	765.58	0.09	14.445	765.56	765.518	0.149
11050	2170	700	3.1	84.51	765.58	0.09	14.445	765.56	765.517	0.150
11100	2220	750	3.0	84.51	765.58	0.09	14.428	765.55	765.515	0.152
11150	2270	800	2.8	84.51	765.58	0.09	14.402	765.55	765.511	0.156
11200	2320	850	2.7	84.50	765.59	0.08	14.378	765.56	765.519	0.148

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PRP-91-02B  
 RECOVERY DATA

ELAPSED TIME SINCE 1200hrs ON 12/5/91 (min)	t TIME SINCE PUMP ON (min)	t TIME SINCE PUMP OFF (min)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	s' RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS.		CORRECTED RESIDUAL DRAWDOWN (feet)
							GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft,MSL)	BKGD. WATER LEVEL TREND (ft,MSL)	
11250	2370	900	84.49	765.60	0.07	14.355	765.56	765.522	0.145
11300	2420	950	84.50	765.59	0.08	14.344	765.56	765.513	0.154
11350	2470	1000	84.49	765.60	0.07	14.344	765.56	765.519	0.148
11450	2570	1100	84.47	765.62	0.04	14.337	765.59	765.542	0.125
11510	2630	1160	84.47	765.62	0.04	14.330	765.59	765.540	0.127
11570	2690	1220	84.45	765.64	0.02	14.316	765.60	765.556	0.111

AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP - 91 - 02C  
 RECOVERY DATA

ELAPSED TIME SINCE 1200hrs ON 12/5/91 (min)	TIME SINCE PUMP ON (min)	TIME SINCE PUMP OFF (min)	VT	DEPTH TO WATER		GROUNDWATER ELEVATION (feet,MSL)	RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS.		CORRECTED RESIDUAL DRAWDOWN (feet)
				FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)				CHANGE (ft,MSL)	BKGD. WATER LEVEL TREND (ft,MSL)	
10350.0	1470	0.0	-	84.47	765.62	14.091	0.05	14.091	765.56	765.532	0.260
10350.1	1470.1	0.1	14701.0	84.47	765.62	14.091	0.05	14.091	765.56	765.532	0.260
10350.2	1470.2	0.2	7351.0	84.47	765.62	14.091	0.05	14.091	765.56	765.532	0.260
10350.3	1470.3	0.3	4901.0	84.47	765.62	14.091	0.05	14.091	765.56	765.532	0.260
10350.4	1470.4	0.4	3529.6	84.47	765.62	14.091	0.05	14.091	765.56	765.532	0.260
10350.5	1470.5	0.5	2941.0	84.47	765.62	14.091	0.05	14.091	765.56	765.532	0.260
10350.6	1470.6	0.6	2521.1	84.47	765.62	14.091	0.05	14.091	765.56	765.532	0.260
10350.7	1470.7	0.7	2206.2	84.46	765.63	14.091	0.04	14.091	765.57	765.541	0.251
10350.8	1470.8	0.8	1765.1	84.45	765.64	14.091	0.03	14.091	765.58	765.551	0.241
10350.9	1470.9	0.9	1604.8	84.44	765.65	14.091	0.02	14.091	765.59	765.560	0.232
10351	1471	1	1471.0	84.44	765.65	14.092	0.02	14.092	765.59	765.560	0.232
10352	1472	2	736.0	84.42	765.67	14.093	0.00	14.093	765.61	765.579	0.213
10353	1473	3	491.0	84.42	765.67	14.094	0.00	14.094	765.61	765.579	0.213
10354	1474	4	368.5	84.41	765.68	14.094	-0.01	14.094	765.62	765.589	0.203
10355	1475	5	295.0	84.40	765.69	14.095	-0.02	14.095	765.62	765.598	0.194
10356	1476	6	246.0	84.40	765.69	14.096	-0.02	14.096	765.62	765.599	0.193
10357	1477	7	211.0	84.41	765.68	14.097	-0.01	14.097	765.62	765.590	0.202
10358	1478	8	184.8	84.40	765.69	14.098	-0.02	14.098	765.63	765.599	0.193
10359	1479	9	164.3	84.41	765.68	14.099	-0.01	14.099	765.62	765.590	0.202
10360	1480	10	148.0	84.41	765.68	14.100	-0.01	14.100	765.62	765.590	0.202
10370	1490	20	74.5	84.40	765.69	14.110	-0.02	14.110	765.63	765.600	0.192
10380	1500	30	50.0	84.40	765.69	14.118	-0.02	14.118	765.63	765.601	0.191
10390	1510	40	37.8	84.40	765.69	14.126	-0.02	14.126	765.63	765.601	0.191
10400	1520	50	30.4	84.41	765.68	14.134	-0.01	14.134	765.62	765.593	0.199
10410	1530	60	25.5	84.41	765.68	14.142	-0.01	14.142	765.62	765.594	0.198
10420	1540	70	22.0	84.40	765.69	14.151	-0.02	14.151	765.63	765.604	0.188
10430	1550	80	19.4	84.40	765.69	14.159	-0.02	14.159	765.63	765.604	0.188
10440	1560	90	17.3	84.41	765.68	14.167	-0.01	14.167	765.62	765.596	0.196
10450	1570	100	15.7	84.42	765.67	14.175	0.00	14.175	765.61	765.587	0.205
10500	1620	150	10.8	84.42	765.67	14.215	0.00	14.215	765.62	765.591	0.201
10550	1670	200	8.4	84.41	765.68	14.255	-0.01	14.255	765.63	765.604	0.188
10600	1720	250	6.9	84.40	765.69	14.276	-0.02	14.276	765.65	765.615	0.177
10650	1770	300	5.9	84.39	765.70	14.298	-0.03	14.298	765.66	765.626	0.166
10700	1820	350	5.2	84.38	765.71	14.319	-0.04	14.319	765.67	765.637	0.155
10750	1870	400	4.7	84.37	765.72	14.340	-0.05	14.340	765.68	765.648	0.144
10800	1920	450	4.3	84.36	765.73	14.361	-0.06	14.361	765.69	765.659	0.133
10850	1970	500	3.9	84.36	765.73	14.382	-0.06	14.382	765.70	765.661	0.131
10900	2020	550	3.7	84.36	765.74	14.403	0.07	14.403	765.71	765.671	0.121
10950	2070	600	3.5	84.36	765.74	14.424	-0.07	14.424	765.71	765.673	0.119
11000	2120	650	3.3	84.34	765.75	14.446	0.09	14.446	765.73	765.684	0.099
11050	2170	700	3.1	84.34	765.75	14.445	0.09	14.445	765.73	765.682	0.100
11100	2220	750	3.0	84.34	765.75	14.428	0.00	14.428	765.73	765.690	0.102
11150	2270	800	2.8	84.34	765.75	14.402	0.09	14.402	765.73	765.696	0.109
11200	2320	850	2.7	84.33	765.76	14.378	0.10	14.378	765.73	765.694	0.101

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP-91-02C  
 RECOVERY DATA

ELAPSED TIME SINCE 1200hrs ON 12/5/91 (min)	↑ TIME SINCE PUMP ON (min)	↑ TIME SINCE PUMP OFF (min)	↓ DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	s' RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft,MSL)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. AND BKGND. WATER LEVEL TREND (ft,MSL)	CORRECTED RESIDUAL DRAWDOWN (feet)
11250	2370	900	84.33	765.76	-0.10	14.355	765.73	765.687	0.105
11300	2420	950	84.34	765.75	-0.09	14.344	765.72	765.676	0.116
11350	2470	1000	84.33	765.76	-0.10	14.344	765.73	765.684	0.108
11450	2570	1100	84.30	765.79	-0.13	14.337	765.76	765.711	0.081
11510	2630	1160	84.30	765.79	-0.13	14.330	765.76	765.709	0.083
11570	2690	1220	84.28	765.81	-0.14	14.316	765.77	765.725	0.067

ARTISER PUMPING TEST  
 DECEMBER 1991  
 PBP-91-020  
 RECOVERY DATA

ELAPSED TIME SINCE 12:59:12 (min)	TIME SINCE PUMP ON (min)	TIME SINCE PUMP OFF (min)	t/t	DEPTH TO WATER FROM TOP OF CASING		GROUNDWATER ELEVATION (ft,MSL)	RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER CORRECTED FOR BAR PRESS.		GROUNDWATER CORRECTED FOR BAR PRESS. AND RESIDUAL DRAWDOWN (feet)	
				(feet)	(feet,MSL)				CHANGE (ft,MSL)	LEVEL TEND (ft,MSL)	ELEVATION CORRECTED FOR BAR PRESS. (ft,MSL)	RESIDUAL DRAWDOWN (feet)
10350.0	1470	0.0	-	84.28	765.81	0.15	14.091	765.75	765.722	0.242		
10350.1	1470.1	0.1	14701.0	84.31	765.78	0.18	14.091	765.72	765.693	0.271		
10350.2	1470.2	0.2	7351.0	84.30	765.79	0.17	14.091	765.73	765.703	0.261		
10350.3	1470.3	0.3	4901.0	84.30	765.79	0.17	14.091	765.73	765.703	0.261		
10350.4	1470.4	0.4	3529.6	84.29	765.80	0.16	14.091	765.74	765.712	0.252		
10350.5	1470.5	0.5	2941.0	84.29	765.80	0.16	14.091	765.74	765.712	0.252		
10350.6	1470.6	0.6	2521.1	84.28	765.81	0.15	14.091	765.75	765.722	0.242		
10350.7	1470.7	0.7	2206.2	84.28	765.81	0.15	14.091	765.75	765.722	0.242		
10350.8	1470.8	0.8	1765.1	84.26	765.83	0.13	14.091	765.77	765.741	0.223		
10350.9	1470.9	0.9	1604.8	84.26	765.83	0.13	14.091	765.77	765.741	0.223		
10351	1471	1	1471.0	84.26	765.83	0.13	14.092	765.77	765.741	0.223		
10352	1472	2	736.0	84.23	765.86	0.10	14.093	765.80	765.769	0.195		
10353	1473	3	491.0	84.22	765.87	0.09	14.094	765.81	765.779	0.185		
10354	1474	4	368.5	84.22	765.87	0.09	14.094	765.81	765.779	0.185		
10355	1475	5	295.0	84.21	765.88	0.09	14.095	765.81	765.788	0.176		
10356	1476	6	246.0	84.21	765.88	0.09	14.096	765.81	765.789	0.175		
10357	1477	7	211.0	84.21	765.88	0.09	14.097	765.81	765.789	0.175		
10358	1478	8	184.8	84.21	765.88	0.09	14.098	765.82	765.789	0.175		
10359	1479	9	164.3	84.22	765.87	0.09	14.099	765.81	765.780	0.184		
10360	1480	10	148.0	84.22	765.87	0.09	14.100	765.81	765.780	0.184		
10370	1490	20	74.5	84.22	765.87	0.09	14.110	765.81	765.781	0.183		
10380	1500	30	50.0	84.23	765.86	0.10	14.118	765.80	765.772	0.192		
10390	1510	40	37.8	84.23	765.86	0.10	14.126	765.80	765.772	0.192		
10400	1520	50	30.4	84.24	765.85	0.11	14.134	765.79	765.764	0.200		
10410	1530	60	25.5	84.25	765.84	0.12	14.142	765.78	765.755	0.209		
10420	1540	70	22.0	84.24	765.85	0.11	14.151	765.79	765.766	0.198		
10430	1550	80	19.4	84.24	765.85	0.11	14.159	765.79	765.766	0.198		
10440	1560	90	17.3	84.24	765.85	0.11	14.167	765.79	765.767	0.197		
10450	1570	100	15.7	84.25	765.84	0.12	14.175	765.79	765.758	0.206		
10500	1620	150	10.8	84.23	765.86	0.10	14.215	765.81	765.781	0.183		
10550	1670	200	8.4	84.20	765.89	0.08	14.255	765.84	765.813	0.151		
10600	1720	250	6.9	84.19	765.90	0.07	14.276	765.85	765.824	0.140		
10650	1770	300	5.9	84.18	765.91	0.06	14.298	765.87	765.836	0.128		
10700	1820	350	5.2	84.18	765.91	0.06	14.319	765.87	765.837	0.127		
10750	1870	400	4.7	81.17	765.92	0.05	14.340	765.88	765.848	0.116		
10800	1920	450	4.3	84.16	765.93	0.04	14.361	765.89	765.859	0.105		
10850	1970	500	3.9	84.16	765.93	0.04	14.382	765.90	765.861	0.103		
10900	2020	550	3.7	84.16	765.93	0.04	14.403	765.90	765.862	0.102		
10950	2070	600	3.5	84.16	765.94	0.03	14.424	765.91	765.873	0.091		
11000	2120	650	3.3	84.15	765.95	0.02	14.446	765.92	765.884	0.080		
11050	2170	700	3.1	84.15	765.95	0.02	14.467	765.92	765.893	0.081		
11100	2220	750	3.0	84.15	765.95	0.02	14.488	765.92	765.891	0.083		
11150	2270	800	2.8	84.14	765.95	0.01	14.509	765.93	765.895	0.078		
11200	2320	850	2.7	84.14	765.95	0.01	14.530	765.92	765.892	0.082		



BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBP - 91 - 02D  
 RECOVERY DATA

ELAPSED TIME SINCE 1200hrs ON 12/5/91 (min)	t TIME SINCE PUMP ON (min)	t' TIME SINCE PUMP OFF (min)	DEPTH TO WATER		GROUNDWATER ELEVATION (feet,MSL)	RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft,MSL)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. AND BKGND. WATER LEVEL TREND (ft,MSL)	CORRECTED RESIDUAL DRAWDOWN (feet)
			FROM TOP OF CASING (feet)	TO WATER						
11250	2370	900	2.6	84.13	765.96	0.00	14.355	765.93	765.888	0.076
11300	2420	950	2.5	84.14	765.95	0.01	14.344	765.92	765.876	0.088
11350	2470	1000	2.5	84.13	765.96	0.00	14.344	765.93	765.885	0.079
11450	2570	1100	2.3	84.11	765.98	-0.02	14.337	765.95	765.901	0.063
11510	2630	1160	2.3	84.10	765.99	-0.03	14.330	765.96	765.909	0.055
11570	2690	1220	2.2	84.08	766.01	-0.05	14.316	765.97	765.925	0.039

AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PRN - 91 - 06C  
 RECOVERY DATA

ELAPSED TIME SINCE 12:59:01 (min)	TIME SINCE PUMP ON (min)	TIME SINCE PUMP OFF (min)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER CORRECTED FOR ELEVATION AND BAR. PRESS.		CORRECTED RESIDUAL DRAWDOWN (feet)
							CHANGE (ft,MSL)	BKGND. WATER LEVEL TREND (ft,MSL)	
10350.0	1470	0.0	83.09	765.20	0.22	14.091	765.13	765.106	0.309
10350.1	1470.1	0.1	83.09	765.20	0.22	14.091	765.13	765.106	0.309
10350.2	1470.2	0.2	83.09	765.20	0.22	14.091	765.14	765.109	0.306
10350.3	1470.3	0.3	83.09	765.20	0.21	14.091	765.14	765.113	0.302
10350.4	1470.4	0.4	83.08	765.21	0.21	14.091	765.15	765.119	0.296
10350.5	1470.5	0.5	83.08	765.22	0.20	14.091	765.15	765.125	0.290
10350.6	1470.6	0.6	83.07	765.22	0.20	14.091	765.16	765.128	0.287
10350.7	1470.7	0.7	83.07	765.22	0.19	14.091	765.16	765.132	0.283
10350.8	1470.8	0.8	83.06	765.23	0.19	14.091	765.16	765.138	0.277
10350.9	1470.9	0.9	83.06	765.23	0.18	14.091	765.17	765.141	0.274
10351	1471	1	83.06	765.23	0.18	14.092	765.17	765.144	0.271
10352	1472	2	83.04	765.25	0.17	14.093	765.18	765.157	0.258
10353	1473	3	83.04	765.25	0.17	14.094	765.18	765.157	0.258
10354	1474	4	83.04	765.25	0.17	14.094	765.19	765.160	0.255
10355	1475	5	83.04	765.25	0.16	14.095	765.19	765.163	0.252
10356	1476	6	83.04	765.25	0.17	14.096	765.19	765.161	0.254
10357	1477	7	83.04	765.25	0.17	14.097	765.19	765.161	0.254
10358	1478	8	83.04	765.25	0.17	14.098	765.19	765.161	0.254
10359	1479	9	83.04	765.25	0.17	14.099	765.19	765.161	0.254
10360	1480	10	83.04	765.25	0.17	14.100	765.19	765.161	0.254
10370	1490	20	83.03	765.26	0.16	14.110	765.20	765.169	0.246
10380	1500	30	83.03	765.26	0.16	14.118	765.20	765.170	0.245
10390	1510	40	83.04	765.25	0.16	14.126	765.19	765.166	0.249
10400	1520	50	83.04	765.25	0.17	14.134	765.19	765.164	0.251
10410	1530	60	83.04	765.25	0.17	14.142	765.19	765.162	0.253
10420	1540	70	83.04	765.25	0.16	14.151	765.20	765.169	0.246
10430	1550	80	83.03	765.26	0.16	14.159	765.20	765.176	0.239
10440	1560	90	83.03	765.26	0.16	14.167	765.20	765.174	0.241
10450	1570	100	83.04	765.25	0.17	14.175	765.19	765.165	0.250
10500	1620	150	83.03	765.26	0.16	14.215	765.21	765.179	0.236
10550	1670	200	83.03	765.26	0.15	14.255	765.22	765.188	0.227
10600	1720	250	83.02	765.27	0.14	14.276	765.23	765.199	0.216
10650	1770	300	83.01	765.28	0.14	14.298	765.24	765.205	0.210
10700	1820	350	83.01	765.28	0.13	14.319	765.24	765.212	0.203
10750	1870	400	82.99	765.30	0.11	14.340	765.27	765.233	0.182
10800	1920	450	82.98	765.31	0.11	14.361	765.27	765.240	0.175
10850	1970	500	82.98	765.31	0.11	14.382	765.28	765.242	0.173
10900	2020	550	82.98	765.31	0.11	14.403	765.28	765.243	0.172
10950	2070	600	82.97	765.32	0.10	14.424	765.29	765.255	0.160
11000	2120	650	82.96	765.33	0.08	14.445	765.31	765.272	0.143
11050	2170	700	82.96	765.33	0.08	14.445	765.31	765.271	0.144

BADGER ARMY AMMUNITION PLANT  
 ACQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBN - 91 - 06C  
 RECOVERY DATA

ELAPSED TIME SINCE 1200H ON 12:5:91 (:min)	t TIME SINCE PUMP ON (min)	t TIME SINCE PUMP OFF (min)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	s' RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS.		CORRECTED RESIDUAL DRAWDOWN (feet)
							GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft,MSL)	BKGD. WATER LEVEL TREND (ft,MSL)	
11100	2220	750	82.96	765.33	0.08	14.428	765.31	765.266	0.149
11150	2270	800	82.95	765.34	0.08	14.402	765.31	765.268	0.147
11200	2320	850	82.95	765.34	0.07	14.378	765.31	765.270	0.145
11250	2370	900	82.94	765.35	0.07	14.355	765.32	765.273	0.142
11300	2420	950	82.95	765.35	0.07	14.344	765.31	765.267	0.148
11350	2470	1000	82.94	765.35	0.07	14.344	765.31	765.270	0.145
11450	2570	1100	82.92	765.37	0.04	14.337	765.34	765.290	0.125
11510	2630	1160	82.91	765.38	0.04	14.330	765.34	765.294	0.121
11570	2690	1220	82.89	765.40	0.02	14.316	765.36	765.313	0.102

AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PRN 91-06D  
 RECOVERY DATA

ELAPSED TIME SINCE 1200hrs ON 12/5/91 (min)	t TIME SINCE PUMP ON (min)	t TIME SINCE PUMP OFF (min)	V' (in)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	RESIDUAL DRAWDOWN (feet)	s	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS.		CORRECTED RESIDUAL DRAWDOWN (feet)
									GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. CHANGE (ft,MSL)	BKGD. WATER LEVEL TREND (ft,MSL)	
10350.0	1470	0.0	-	82.27	765.24	0.21		14.091	765.17	765.145	0.300
10350.1	1470.1	0.1	14701.0	82.27	765.24	0.21		14.091	765.17	765.145	0.300
10350.2	1470.2	0.2	7351.0	82.27	765.24	0.21		14.091	765.17	765.145	0.300
10350.3	1470.3	0.3	4901.0	82.26	765.24	0.21		14.091	765.18	765.149	0.296
10350.4	1470.4	0.4	3529.6	82.26	765.25	0.20		14.091	765.18	765.155	0.290
10350.5	1470.5	0.5	2941.0	82.25	765.25	0.19		14.091	765.19	765.161	0.284
10350.6	1470.6	0.6	2521.1	82.24	765.26	0.19		14.091	765.19	765.168	0.277
10350.7	1470.7	0.7	2206.2	82.24	765.26	0.18		14.091	765.20	765.171	0.274
10350.8	1470.8	0.8	1765.1	82.23	765.27	0.18		14.091	765.20	765.177	0.268
10350.9	1470.9	0.9	1604.8	82.23	765.27	0.17		14.091	765.21	765.180	0.265
10351	1471	1	1471.0	82.23	765.27	0.17		14.092	765.21	765.180	0.265
10352	1472	2	736.0	82.22	765.28	0.16		14.093	765.22	765.193	0.252
10353	1473	3	491.0	82.21	765.29	0.16		14.094	765.22	765.196	0.249
10354	1474	4	368.5	82.21	765.29	0.16		14.094	765.23	765.199	0.246
10355	1475	5	295.0	82.21	765.29	0.15		14.095	765.23	765.202	0.243
10356	1476	6	246.0	82.21	765.29	0.15		14.096	765.23	765.203	0.242
10357	1477	7	211.0	82.21	765.29	0.15		14.097	765.23	765.203	0.242
10358	1478	8	184.8	82.21	765.29	0.16		14.098	765.23	765.200	0.245
10359	1479	9	164.3	82.21	765.29	0.16		14.099	765.23	765.200	0.245
10360	1480	10	148.0	82.21	765.29	0.16		14.100	765.23	765.200	0.245
10370	1490	20	74.5	82.21	765.29	0.16		14.110	765.23	765.201	0.244
10380	1500	30	50.0	82.20	765.30	0.15		14.118	765.24	765.212	0.233
10390	1510	40	37.8	82.21	765.29	0.15		14.126	765.23	765.205	0.240
10400	1520	50	30.4	82.21	765.29	0.16		14.134	765.23	765.203	0.242
10410	1530	60	25.5	82.21	765.29	0.16		14.142	765.23	765.204	0.241
10420	1540	70	22.0	82.20	765.30	0.15		14.151	765.24	765.212	0.233
10430	1550	80	19.4	82.20	765.30	0.14		14.159	765.25	765.218	0.227
10440	1560	90	17.3	82.20	765.30	0.15		14.167	765.24	765.216	0.229
10450	1570	100	15.7	82.21	765.29	0.15		14.175	765.24	765.210	0.235
10500	1620	150	10.8	82.20	765.30	0.15		14.215	765.25	765.221	0.224
10550	1670	200	8.4	82.19	765.31	0.14		14.255	765.26	765.233	0.212
10600	1720	250	6.9	82.19	765.32	0.13		14.276	765.27	765.242	0.203
10650	1770	300	5.9	82.18	765.32	0.12		14.298	765.28	765.250	0.195
10700	1820	350	5.2	82.18	765.32	0.12		14.319	765.29	765.254	0.191
10750	1870	400	4.7	82.16	765.34	0.10		14.340	765.30	765.272	0.173
10800	1920	450	4.3	82.15	765.35	0.10		14.361	765.31	765.279	0.166
10850	1970	500	3.9	82.15	765.35	0.10		14.382	765.32	765.281	0.164
10900	2020	550	3.7	82.15	765.35	0.10		14.403	765.32	765.282	0.163
10950	2070	600	3.5	82.14	765.36	0.09		14.424	765.33	765.297	0.148
11090	2120	650	3.3	82.13	765.37	0.07		14.446	765.35	765.311	0.134
11050	2170	700	3.1	82.13	765.37	0.07		14.445	765.35	765.310	0.135
11100	2220	750	3.0	82.13	765.37	0.08		14.428	765.34	765.305	0.140
11150	2270	800	2.8	82.12	765.38	0.07		14.402	765.35	765.310	0.135
11200	2320	850	2.7	82.12	765.38	0.06		14.378	765.35	765.312	0.133

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 PBN - 91 - 06D  
 RECOVERY DATA

ELAPSED TIME SINCE 1200hrs ON 12/5/91 (min)	t TIME SINCE PUMP ON (min)	t' TIME SINCE PUMP OFF (min)	DEPTH TO WATER FROM TOP OF CASING (feet)	GROUNDWATER ELEVATION (feet,MSL)	RESIDUAL DRAWDOWN (feet)	BAROMETRIC PRESSURE (PSI)	GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS.		CORRECTED RESIDUAL DRAWDOWN (feet)
							GROUNDWATER ELEVATION CORRECTED FOR BAR. PRESS. (ft,MSL)	BKGD. WATER LEVEL TREND (ft,MSL)	
11250	2370	900	82.11	765.39	0.05	14.355	765.36	765.315	0.130
11300	2420	950	82.11	765.39	0.06	14.344	765.35	765.310	0.135
11350	2470	1000	82.10	765.40	0.05	14.344	765.36	765.318	0.127
11450	2570	1100	82.08	765.42	0.03	14.337	765.38	765.335	0.110
11510	2630	1160	82.08	765.42	0.03	14.330	765.38	765.336	0.109
11570	2690	1220	82.06	765.44	0.01	14.316	765.40	765.352	0.093

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 BCW-3  
 RECOVERY DATA

BCW-3		
ELAPSED TIME SINCE PUMP OFF (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)
0	95.529	754.471
0.0083	95.513	754.487
0.0166	95.545	754.455
0.025	95.466	754.534
0.0333	95.482	754.518
0.0416	95.529	754.471
0.05	95.498	754.502
0.0583	95.529	754.471
0.0666	95.529	754.471
0.075	95.513	754.487
0.0833	95.577	754.423
0.1	95.466	754.534
0.1166	95.545	754.455
0.1333	95.466	754.534
0.15	95.513	754.487
0.1666	95.529	754.471
0.1833	95.529	754.471
0.2	95.529	754.471
0.2166	95.529	754.471
0.2333	95.529	754.471
0.25	94.818	755.182
0.2666	93.839	756.161
0.2833	92.576	757.424
0.3	91.707	758.293
0.3166	90.886	759.114
0.3333	90.112	759.888
0.4166	87.458	762.542
0.5	86.116	763.884
0.5833	85.658	764.342
0.6666	85.610	764.390
0.75	85.531	764.469
0.8333	85.436	764.564
0.9166	85.373	764.627
1	85.357	764.643
1.0933	85.342	764.658
1.1666	85.310	764.690
1.25	85.326	764.674
1.3333	85.294	764.706
1.4166	85.278	764.722
1.5	85.263	764.737

BADGER ARMY AMMUNITION PLANT  
AQUIFER PUMPING TEST  
DECEMBER 1991  
BCW-3  
RECOVERY DATA

BCW-3

ELAPSED TIME SINCE PUMP OFF (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)
1.5833	85.294	764.706
1.6666	85.294	764.706
1.75	85.278	764.722
1.8333	85.278	764.722
1.9166	85.278	764.722
2	85.278	764.722
2.5	85.294	764.706
3	85.294	764.706
3.5	85.278	764.722
4	85.294	764.706
4.5	85.294	764.706
5	85.278	764.722
5.5	85.278	764.722
6	85.278	764.722
6.5	85.263	764.737
7	85.278	764.722
7.5	85.278	764.722
8	85.278	764.722
8.5	85.278	764.722
9	85.294	764.706
9.5	85.294	764.706
10	85.294	764.706
12	85.294	764.706
14	85.294	764.706
16	85.31	764.690
18	85.294	764.706
20	85.294	764.706
22	85.294	764.706
24	85.294	764.706
26	85.294	764.706
28	85.294	764.706
30	85.294	764.706
32	85.294	764.706
34	85.294	764.706
36	85.294	764.706
38	85.294	764.706
40	85.294	764.706
42	85.294	764.706
44	85.294	764.706
46	85.294	764.706

SADGER ARMY AMMUNITION PLANT  
AQUIFER PUMPING TEST  
DECEMBER 1991  
BCW-3  
RECOVERY DATA

BCW-3		
ELAPSED TIME		
SINCE PUMP	DEPTH TO	WATER
OFF	WATER	ELEVATION
(min)	(feet)	(ft.MSL)
48	85.294	764.706
50	85.294	764.706
52	85.294	764.706
54	85.294	764.706
56	85.294	764.706
58	85.294	764.706
60	85.294	764.706
62	85.278	764.722
64	85.278	764.722
66	85.278	764.722
68	85.278	764.722
70	85.278	764.722
72	85.278	764.722
74	85.263	764.737
76	85.263	764.737
78	85.263	764.737
80	85.263	764.737
82	85.263	764.737
84	85.263	764.737
86	85.263	764.737
88	85.278	764.722
90	85.263	764.737
92	85.263	764.737
94	85.263	764.737
96	85.278	764.722
98	85.278	764.722
100	85.278	764.722
110	85.263	764.737
120	85.263	764.737
130	85.263	764.737
140	85.247	764.753
150	85.263	764.737
160	85.247	764.753
170	85.263	764.737
180	85.247	764.753
190	85.231	764.769
200	85.247	764.753
210	85.231	764.769
220	85.231	764.769
230	85.231	764.769



BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 BCW-3  
 RECOVERY DATA

BCW-3		
ELAPSED TIME		
SINCE PUMP	DEPTH TO	WATER
OFF	WATER	ELEVATION
(min)	(feet)	(ft. MSL)
240	85.231	764.769
250	85.231	764.769
260	85.231	764.769
270	85.231	764.769
280	85.231	764.769
290	85.231	764.769
300	85.231	764.769
310	85.215	764.785
320	85.231	764.769
330	85.231	764.769
340	85.215	764.785
350	85.215	764.785
360	85.215	764.785
370	85.215	764.785
380	85.215	764.785
390	85.215	764.785
400	85.2	764.800
410	85.2	764.800
420	85.184	764.816
430	85.2	764.800
440	85.2	764.800
450	85.2	764.800
460	85.184	764.816
470	85.184	764.816
480	85.184	764.816
490	85.2	764.800
500	85.2	764.800
510	85.184	764.816
520	85.184	764.816
530	85.184	764.816
540	85.184	764.816
550	85.2	764.800
560	85.184	764.816
570	85.184	764.816
580	85.184	764.816
590	85.184	764.816
600	85.184	764.816
610	85.184	764.816
620	85.168	764.832
630	85.168	764.832

BADGER ARMY AMMUNITION PLANT  
 AQUIFER PUMPING TEST  
 DECEMBER 1991  
 BCW-3  
 RECOVERY DATA

BCW-3		
ELAPSED TIME SINCE PUMP OFF (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)
640	85.168	764.832
650	85.168	764.832
660	85.168	764.832
670	85.168	764.832
680	85.168	764.832
690	85.168	764.832
700	85.168	764.832
710	85.168	764.832
720	85.168	764.832
730	85.168	764.832
740	85.168	764.832
750	85.168	764.832
760	85.168	764.832
770	85.152	764.848
780	85.152	764.848
790	85.152	764.848
800	85.152	764.848
810	85.152	764.848
820	85.152	764.848
830	85.152	764.848
840	85.152	764.848
850	85.152	764.848
860	85.152	764.848
870	85.152	764.848
880	85.152	764.848
890	85.152	764.848
900	85.136	764.864
910	85.136	764.864
920	85.136	764.864
930	85.136	764.864
940	85.152	764.848
950	85.152	764.848
960	85.152	764.848
970	85.136	764.864
980	85.152	764.848
990	85.152	764.848
1000	85.152	764.848
1010	85.152	764.848
1020	85.152	764.848
1030	85.152	764.848

BADGER ARMY AMMUNITION PLANT  
AQUIFER PUMPING TEST  
DECEMBER 1991  
BCW-3  
RECOVERY DATA

BCW-3		
ELAPSED TIME SINCE PUMP OFF (min)	DEPTH TO WATER (feet)	WATER ELEVATION (ft.MSL)
1040	85.136	764.864
1050	85.136	764.864
1060	85.136	764.864
1070	85.136	764.864
1080	85.136	764.864
1090	85.136	764.864
1100	85.121	764.879
1110	85.121	764.879
1120	85.121	764.879
1130	85.121	764.879
1140	85.105	764.895
1150	85.121	764.879
1160	85.121	764.879
1170	85.121	764.879
1180	85.121	764.879
1190	85.105	764.895
1200	85.105	764.895
1210	85.105	764.895
1220	85.089	764.911

- NOTES:
1. PUMPING OF BCW-3 TERMINATED AT 1630hrs ON 12/12/91.
  2. (FT,MSL) - FEET ABOVE MEAN SEA LEVEL.

BOULTON DELAYED-YIELD METHOD ANALYSES

PBP-91-01C

Early Time Match Point (MP<sub>e</sub>)  
 $4Tt/r^2 S_e = 1.0$ ,  $4\pi Ts/Q = 1.0$   
 $t = 0.19$  min,  $s = 0.11$  feet

$$T = \frac{Q}{4\pi s} = \frac{205.3}{(4)(\pi)(0.11)}$$

$$= 19.86 \text{ ft}^2/\text{min}$$

$$= 214,000 \text{ gpd/ft}$$

$$S_e = 4Tt/r^2$$

$$= (4)(19.86)(0.19) / (75)^2$$

$$= 2.70 \times 10^{-3}$$

$$r/B = 0.8$$

Late Time Match Point (MP<sub>l</sub>)

$$4Tt/r^2 S_e = 1.0$$
,  $4\pi Ts/Q = 1.0$   
 $t = 11$  min,  $s = 0.11$  feet

$$T = \frac{Q}{4\pi s} = \frac{205.3}{(4)(\pi)(0.11)}$$

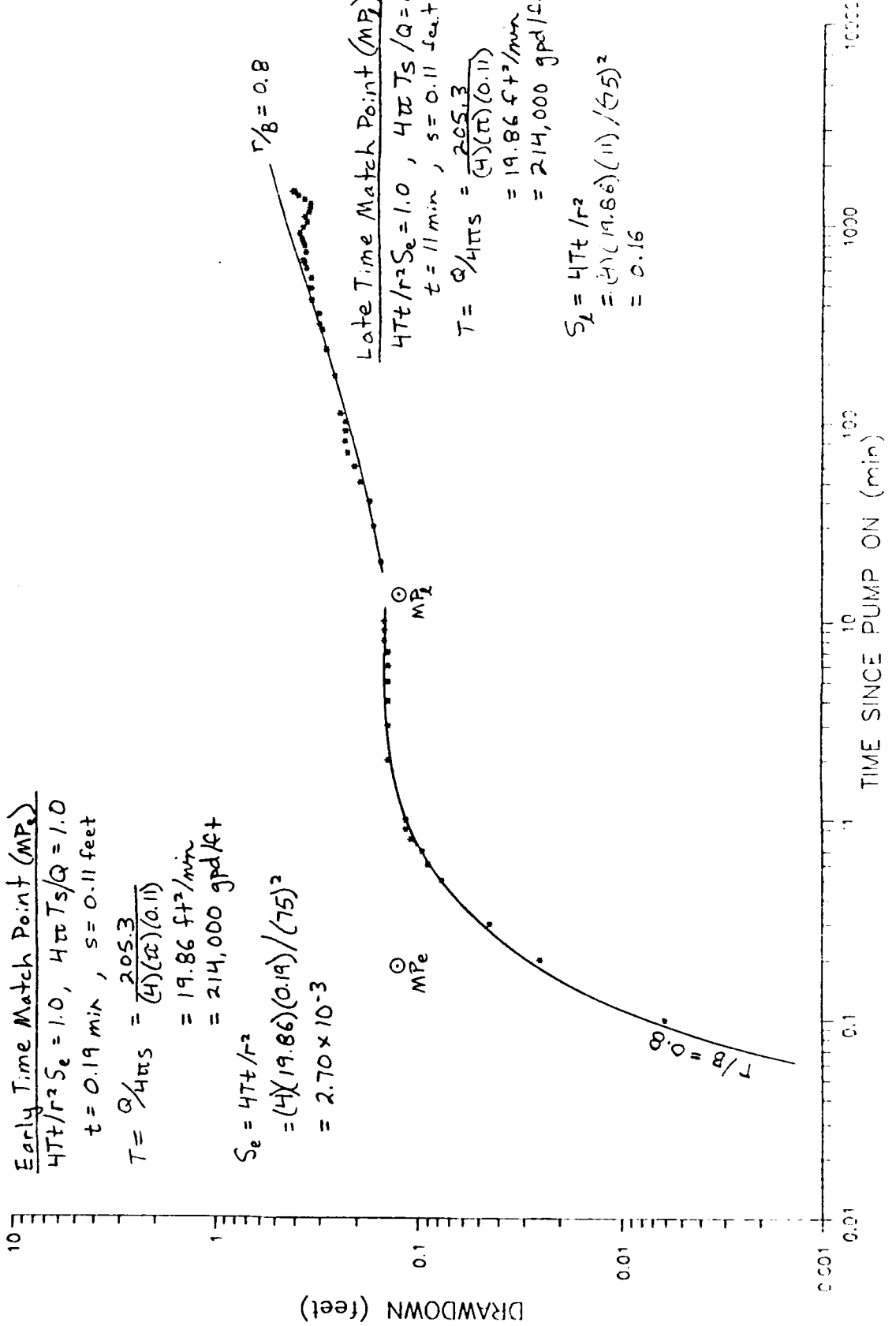
$$= 19.86 \text{ ft}^2/\text{min}$$

$$= 214,000 \text{ gpd/ft}$$

$$S_l = 4Tt/r^2$$

$$= (4)(19.86)(11) / (75)^2$$

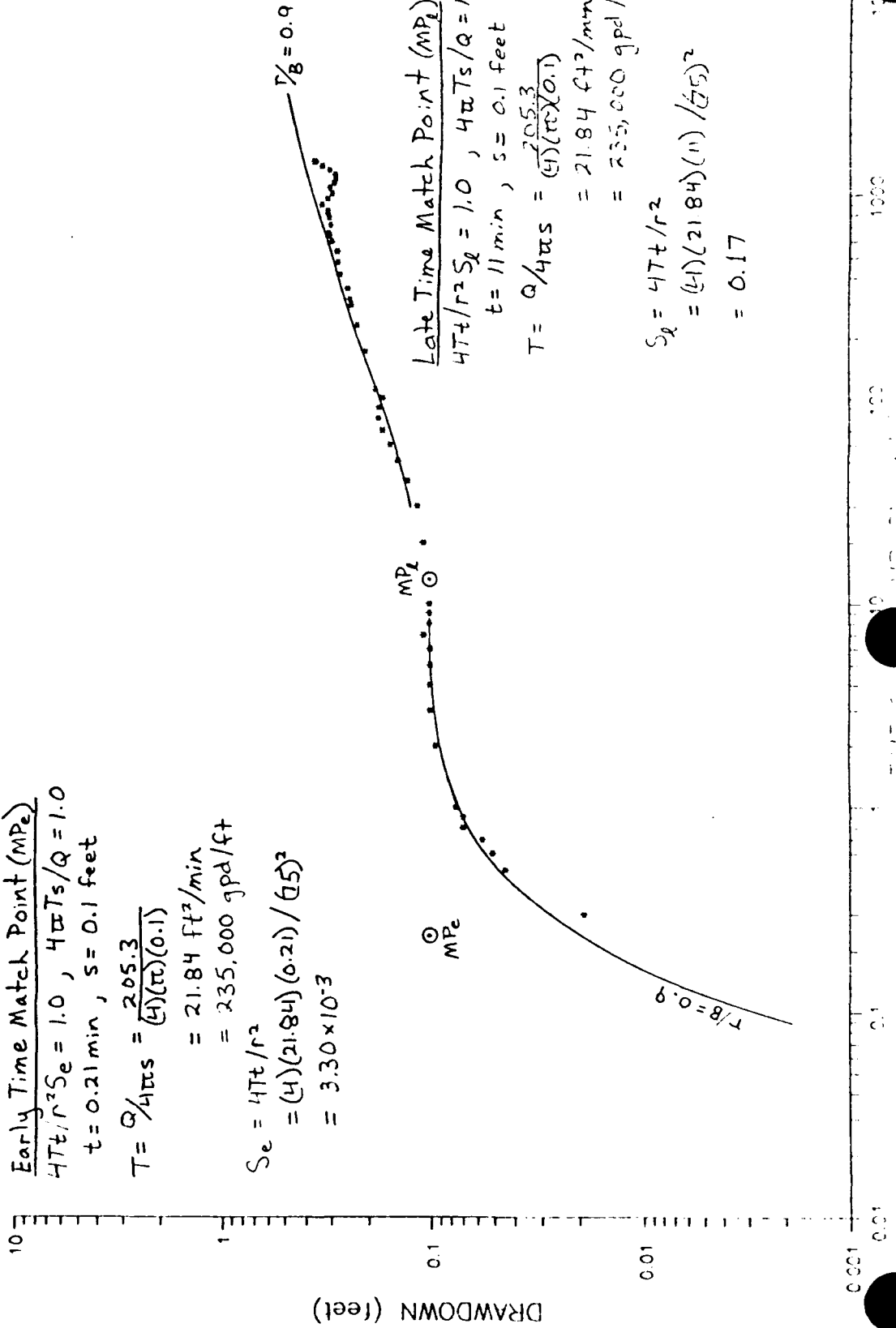
$$= 0.16$$



PBP-91-01D

Early Time Match Point (MP<sub>e</sub>)  
 $4Tt/r^2 S_e = 1.0$ ,  $4\pi Ts/Q = 1.0$   
 $t = 0.21 \text{ min}$ ,  $s = 0.1 \text{ feet}$   
 $T = \frac{Q}{4\pi s} = \frac{205.3}{(4)(\pi)(0.1)}$   
 $= 21.84 \text{ ft}^2/\text{min}$   
 $= 235,000 \text{ gpd/ft}$   
 $S_e = 4Tt/r^2$   
 $= (4)(21.84)(0.21) / (65)^2$   
 $= 3.30 \times 10^{-3}$

Late Time Match Point (MP<sub>l</sub>)  
 $4Tt/r^2 S_l = 1.0$ ,  $4\pi Ts/Q = 1.0$   
 $t = 11 \text{ min}$ ,  $s = 0.1 \text{ feet}$   
 $T = \frac{Q}{4\pi s} = \frac{205.3}{(4)(\pi)(0.1)}$   
 $= 21.84 \text{ ft}^2/\text{min}$   
 $= 235,000 \text{ gpd/ft}$   
 $S_l = 4Tt/r^2$   
 $= (4)(21.84)(11) / (65)^2$   
 $= 0.17$



PBP-91-02B

Early Time Match Point (MP<sub>e</sub>)

$$4Tt/r^2 S_e = 1.0, \quad 4\pi T_s/Q = 1.0$$

$$t = 0.45 \text{ min}, \quad s = 0.09 \text{ feet}$$

$$T = Q/4\pi s = \frac{205.3}{(4)(\pi)(0.09)}$$

$$= 24.27 \text{ ft}^2/\text{min}$$

$$= 261,000 \text{ gpd/ft}$$

$$S_e = 4Tt/r^2$$

$$= (4)(24.27)(0.45)/(219)^2$$

$$= 9.11 \times 10^{-4}$$

Late Time Match Point (MP<sub>l</sub>)

$$4Tt/r^2 S_l = 1.0, \quad 4\pi T_s/Q = 1.0$$

$$t = 22 \text{ min}, \quad s = 0.09 \text{ feet}$$

$$T = Q/4\pi s = \frac{205.3}{(4)(\pi)(0.09)}$$

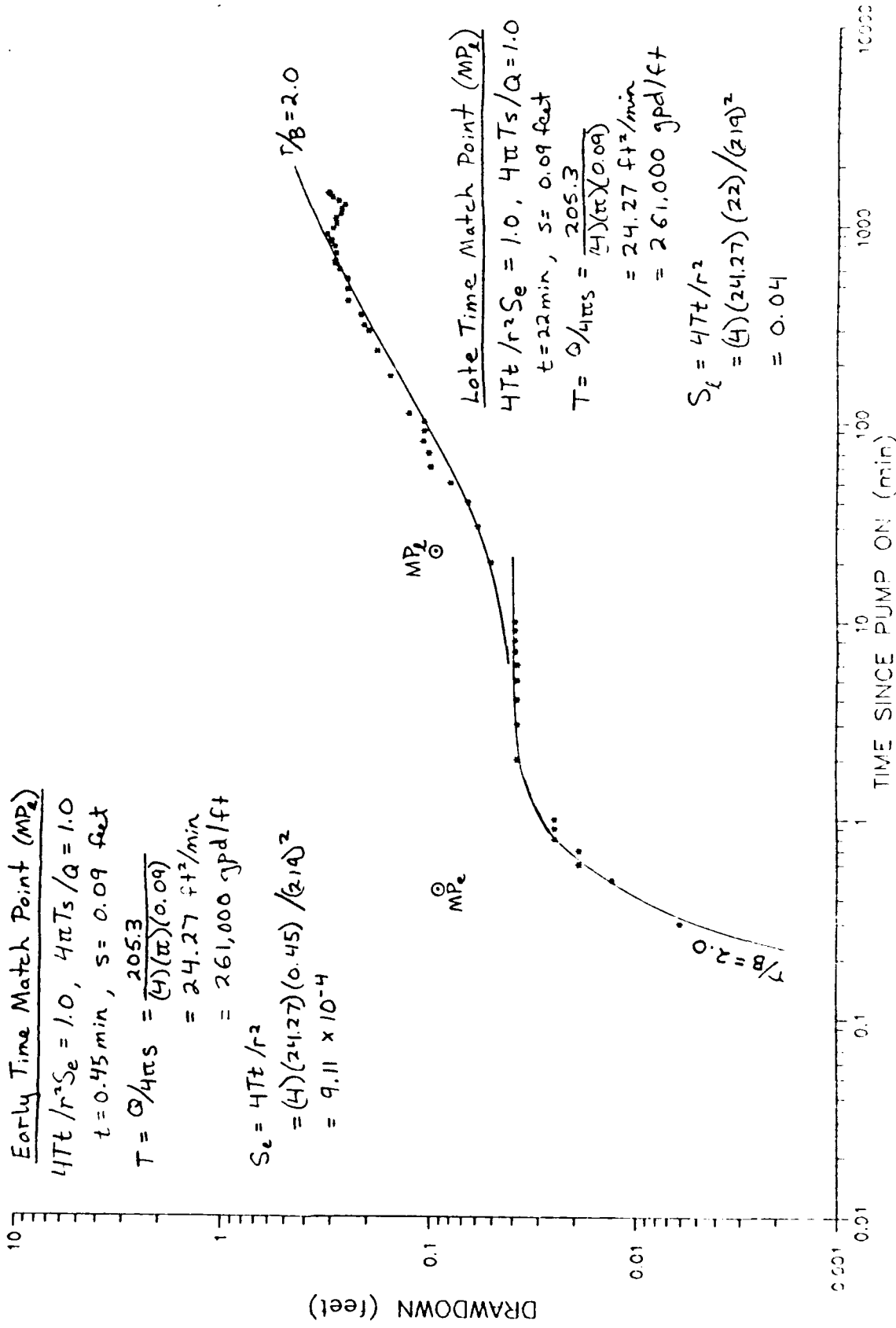
$$= 24.27 \text{ ft}^2/\text{min}$$

$$= 261,000 \text{ gpd/ft}$$

$$S_l = 4Tt/r^2$$

$$= (4)(24.27)(22)/(219)^2$$

$$= 0.04$$



PBP-91-02C

Early Time Match Point (MP<sub>e</sub>)

$$4Tt/r^2 S_e = 1.0, \quad 4\pi T_s/Q = 1.0$$

$$t = 0.9 \text{ min}, \quad s = 0.105 \text{ feet}$$

$$T = \frac{Q}{4\pi s} = \frac{205.3}{(4)(\pi)(0.105)}$$

$$= 20.80 \text{ ft}^2/\text{min}$$

$$= 224,000 \text{ gpd/ft}$$

$$S_e = 4Tt/r^2$$

$$= (4)(20.80)(0.9)/(219)^2$$

$$= 1.56 \times 10^{-3}$$

MP<sub>e</sub>

MP<sub>l</sub>

$r/B = 1.75$

Late Time Match Point (MP<sub>l</sub>)

$$4Tt/r^2 S_l = 1.0, \quad 4\pi T_s/Q = 1.0$$

$$t = 41 \text{ min}, \quad s = 0.105 \text{ feet}$$

$$T = \frac{Q}{4\pi s} = \frac{205.3}{(4)(\pi)(0.105)}$$

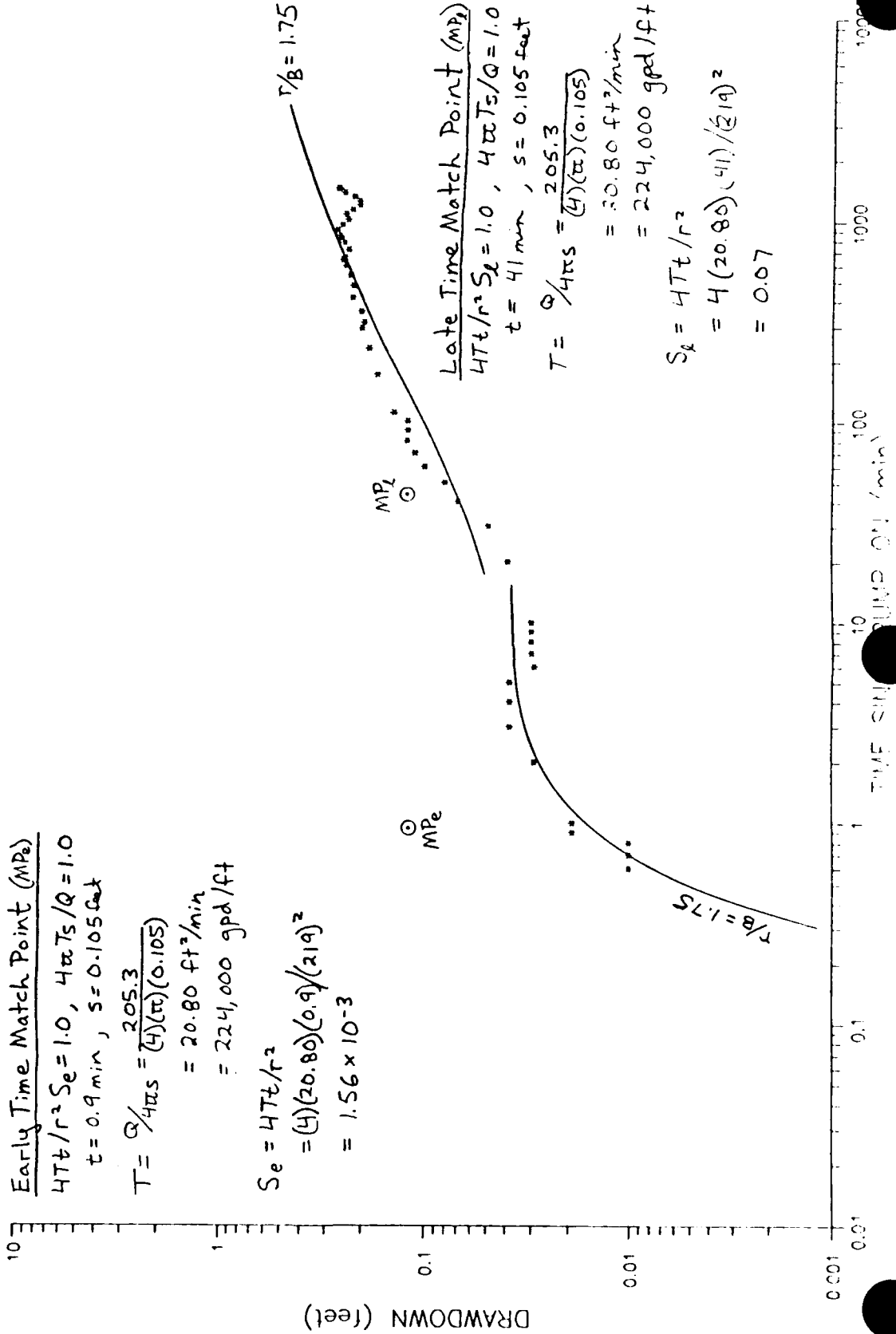
$$= 20.80 \text{ ft}^2/\text{min}$$

$$= 224,000 \text{ gpd/ft}$$

$$S_l = 4Tt/r^2$$

$$= 4(20.80)(41)/(219)^2$$

$$= 0.07$$





PBP-91-02D

Early Time Match Point (MP<sub>e</sub>)

$$4Tt/r^2 S_e = 1.0, \quad 4\pi Ts/Q = 1.0$$

$$t = 0.04 \text{ min}, \quad s = 0.075 \text{ feet}$$

$$T = \frac{Q}{4\pi s} = \frac{205.3}{(4)(\pi)(0.075)}$$

$$= 29.12 \text{ ft}^2/\text{min}$$

$$= 314,000 \text{ gpd/ft}$$

$$S_e = 4Tt/r^2$$

$$= (4)(29.12)(0.04)/(219)^2$$

$$= 9.71 \times 10^{-5}$$

Late Time Match Point (MP<sub>l</sub>)

$$4Tt/r^2 S_l = 1.0, \quad 4\pi Ts/Q = 1.0$$

$$t = 25 \text{ min}, \quad s = 0.075 \text{ feet}$$

$$T = \frac{Q}{4\pi s} = \frac{205.3}{(4)(\pi)(0.075)}$$

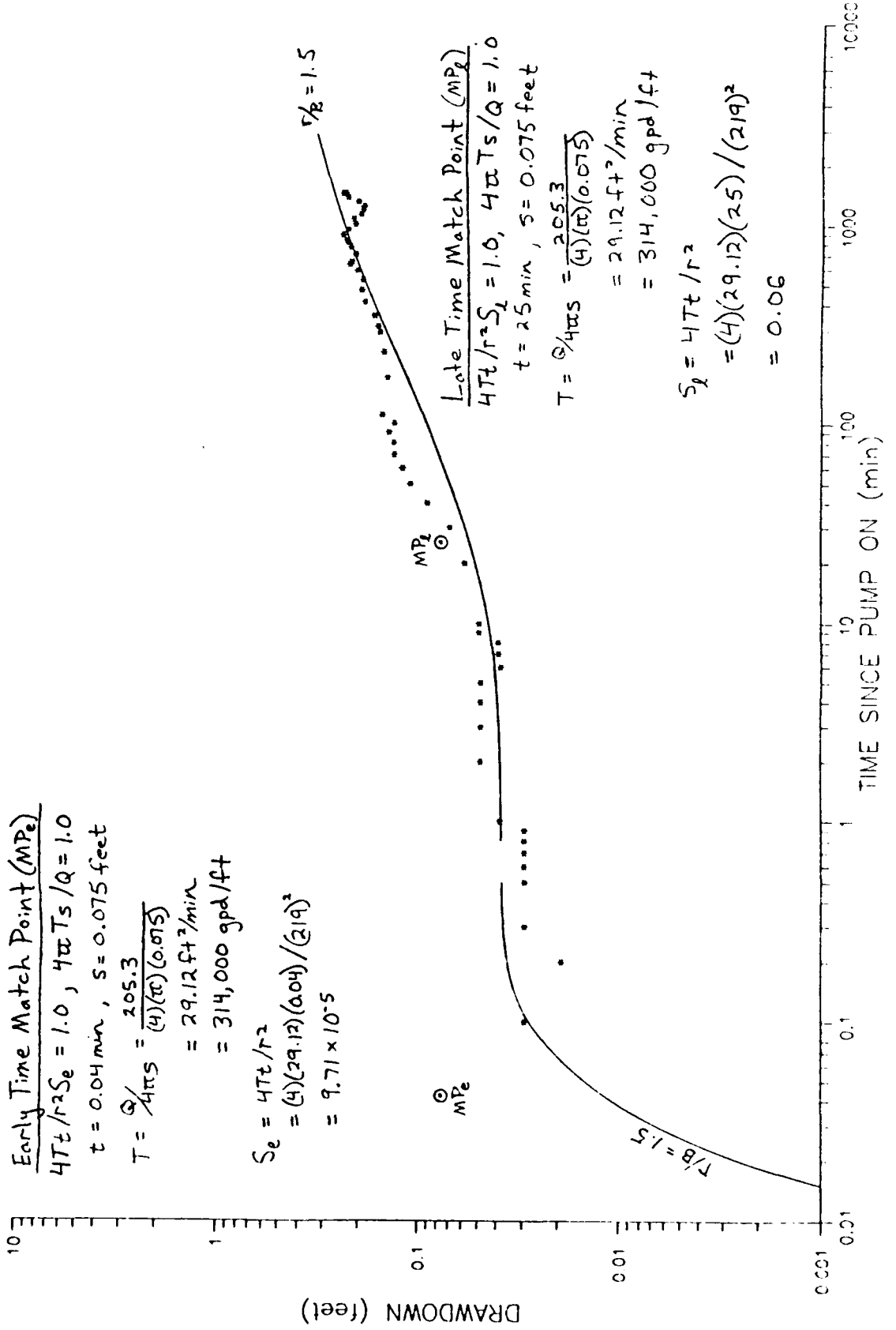
$$= 29.12 \text{ ft}^2/\text{min}$$

$$= 314,000 \text{ gpd/ft}$$

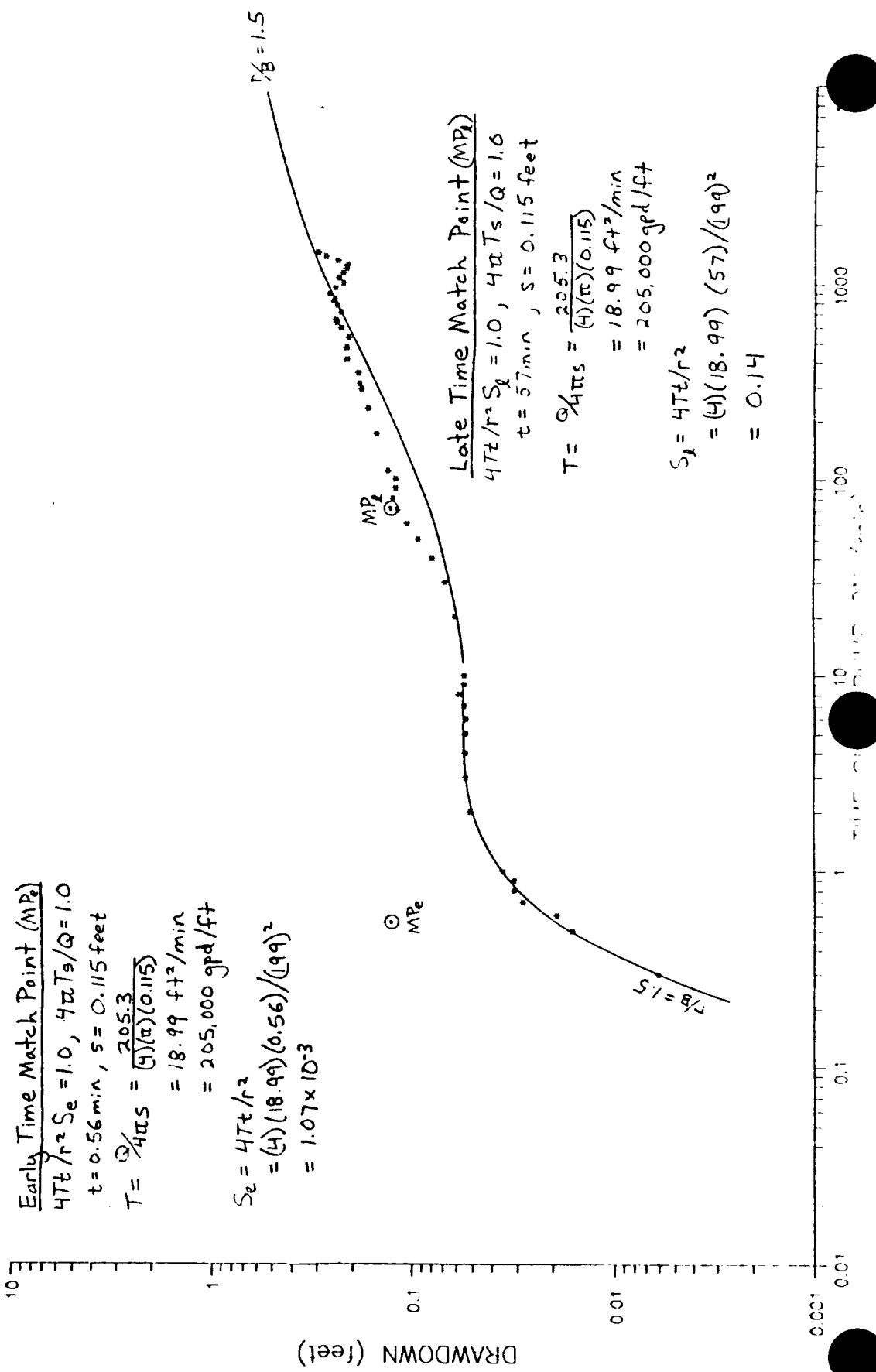
$$S_l = 4Tt/r^2$$

$$= (4)(29.12)(25)/(219)^2$$

$$= 0.06$$



PBN-91-06C



Early Time Match Point (MP<sub>e</sub>)  
 $4Tt/r^2 S_e = 1.0, 4\pi Ts/Q = 1.0$

$t = 0.56 \text{ min}, s = 0.115 \text{ feet}$

$T = \frac{Q}{4\pi s} = \frac{205.3}{(4)(\pi)(0.115)}$

$= 18.99 \text{ ft}^2/\text{min}$

$= 205,000 \text{ gpd/ft}$

$S_e = 4Tt/r^2$

$= (4)(18.99)(0.56)/(199)^2$

$= 1.07 \times 10^{-3}$

Late Time Match Point (MP<sub>s</sub>)

$4Tt/r^2 S_s = 1.0, 4\pi Ts/Q = 1.0$

$t = 57 \text{ min}, s = 0.115 \text{ feet}$

$T = \frac{Q}{4\pi s} = \frac{205.3}{(4)(\pi)(0.115)}$

$= 18.99 \text{ ft}^2/\text{min}$

$= 205,000 \text{ gpd/ft}$

$S_s = 4Tt/r^2$

$= (4)(18.99)(57)/(199)^2$

$= 0.14$

PBN-91-06D

Early Time Match Point (MP<sub>e</sub>):

$$4Tt/r^2 S_e = 1.0$$

$$4\pi T s / Q = 1.0$$

$$t = 0.5 \text{ min}, s = 0.12 \text{ feet}$$

$$T = \frac{Q}{4\pi s} = \frac{205.3}{(4)(\pi)(0.12)}$$

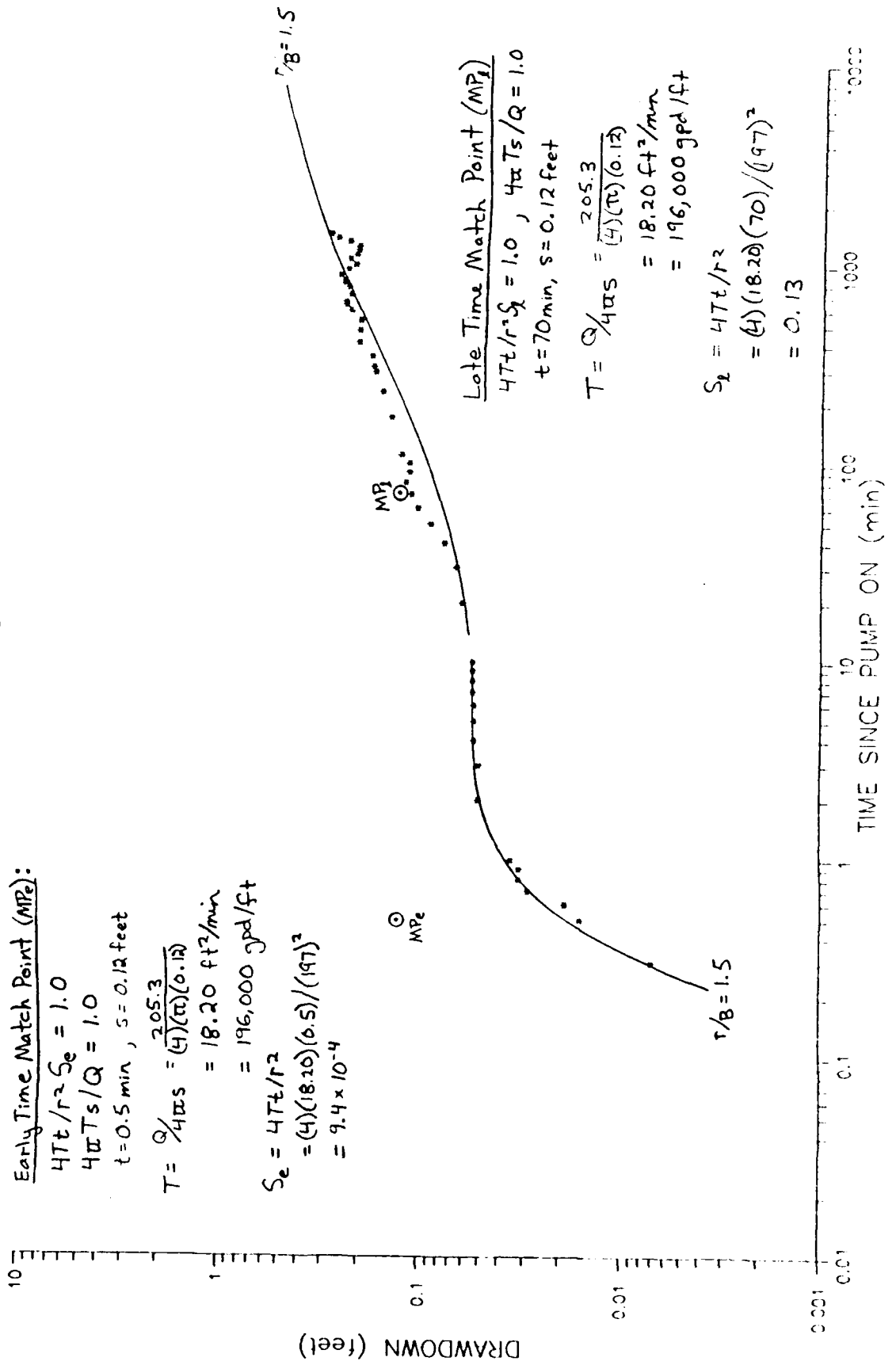
$$= 18.20 \text{ ft}^2/\text{min}$$

$$= 196,000 \text{ gpd/ft}$$

$$S_e = 4Tt/r^2$$

$$= (4)(18.20)(0.5)/(197)^2$$

$$= 9.4 \times 10^{-4}$$



Late Time Match Point (MP<sub>l</sub>):

$$4Tt/r^2 S_l = 1.0, \quad 4\pi T s / Q = 1.0$$

$$t = 70 \text{ min}, s = 0.12 \text{ feet}$$

$$T = \frac{Q}{4\pi s} = \frac{205.3}{(4)(\pi)(0.12)}$$

$$= 18.20 \text{ ft}^2/\text{min}$$

$$= 196,000 \text{ gpd/ft}$$

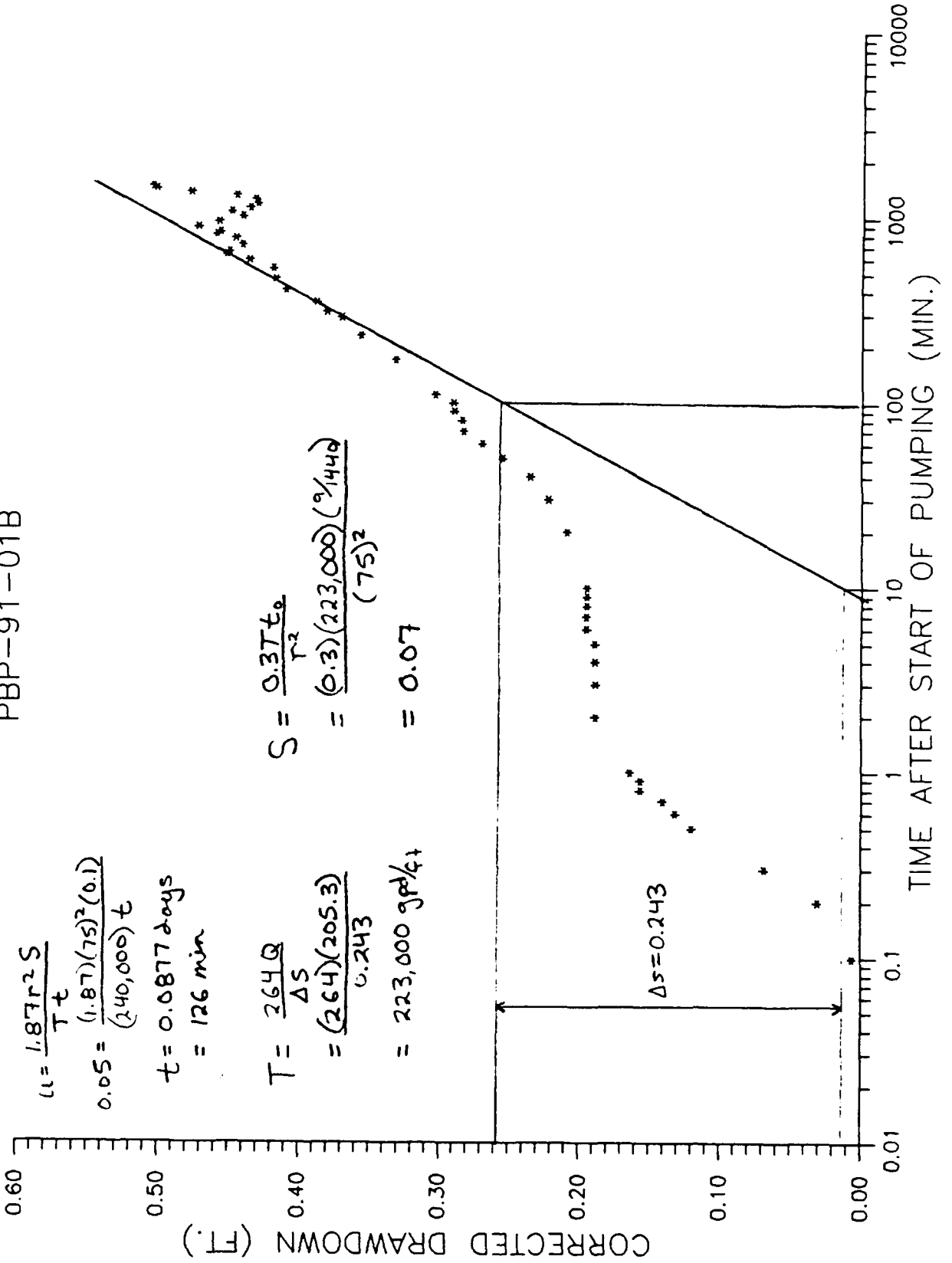
$$S_l = 4Tt/r^2$$

$$= (4)(18.20)(70)/(197)^2$$

$$= 0.13$$

JACOB METHOD ANALYSES

PBP-91-01B



$$u = \frac{1.87r^2 S}{Tt}$$

$$0.05 = \frac{(1.87)(75)^2(0.1)}{(240,000)t}$$

$$t = 0.0817 \text{ days}$$

$$= 126 \text{ min}$$

$$T = \frac{264Q}{\Delta s}$$

$$= \frac{(264)(205.3)}{0.243}$$

$$= 223,000 \text{ gal/ft}$$

$$S = \frac{0.3Tt_0}{r^2}$$

$$= \frac{(0.3)(223,000)(\frac{1}{440})}{(75)^2}$$

$$= 0.07$$

$\Delta s = 0.243$

TIME AFTER START OF PUMPING (MIN.)

PBP-91-01D

$$u = \frac{1.87 r^2 S}{T t}$$

$$0.05 = \frac{(0.87)(75)^2(0.1)}{(249,000) t}$$

$$t = 126 \text{ min}$$

$$T = \frac{264Q}{\Delta s}$$

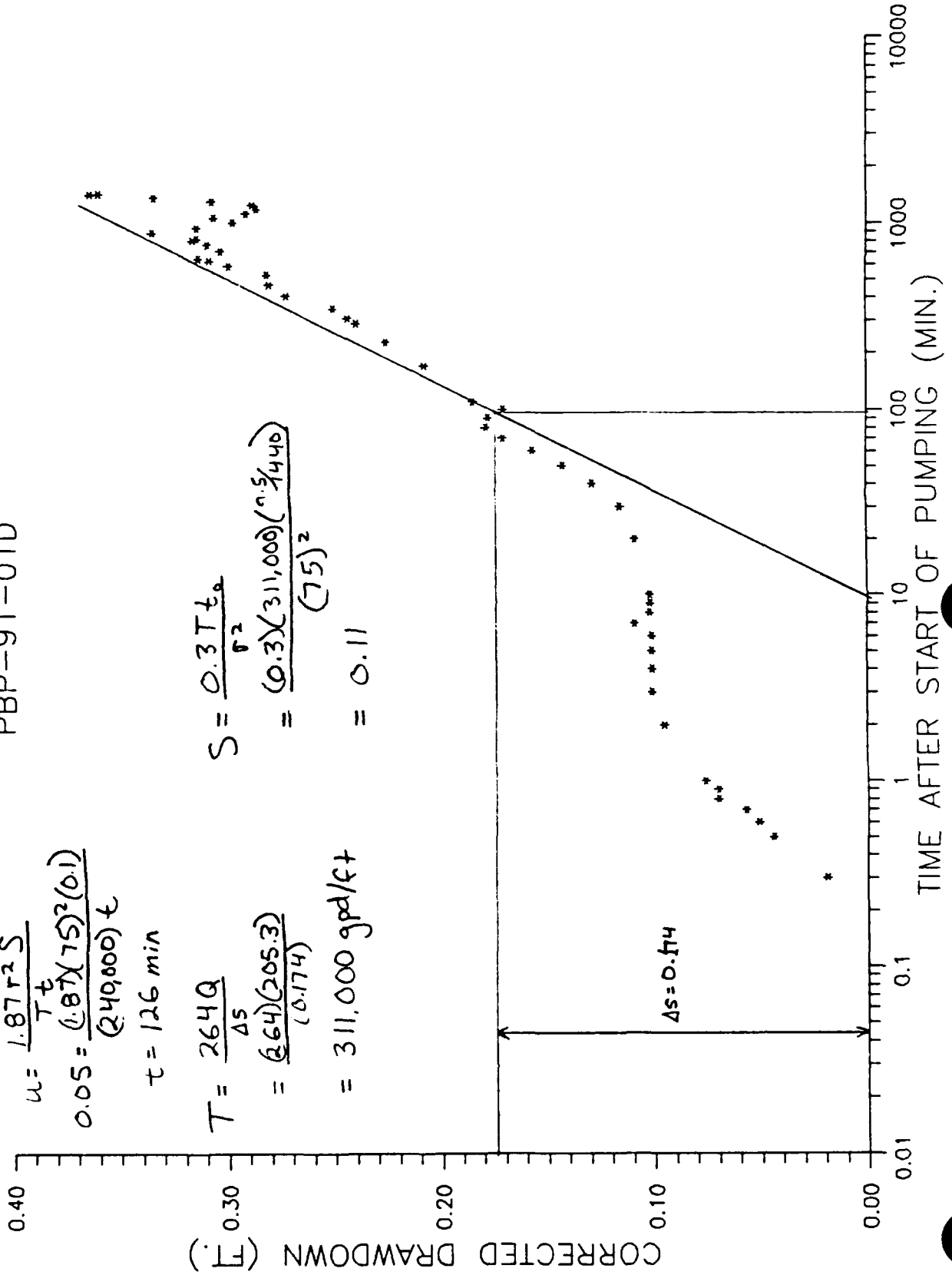
$$= \frac{(2.64)(205.3)}{(0.174)}$$

$$= 311,000 \text{ gal/ft}$$

$$S = \frac{0.3 T t_a}{r^2}$$

$$= \frac{(0.3)(311,000)(\frac{5}{1440})}{(75)^2}$$

$$= 0.11$$



PBP-91-01C

$$u = \frac{1.87r^2S}{Tt}$$

$$0.05 = \frac{(1.87)(75)^2(0.1)}{(249,000)t}$$

$$t = 126 \text{ min}$$

$$T = \frac{264Q}{\Delta s}$$

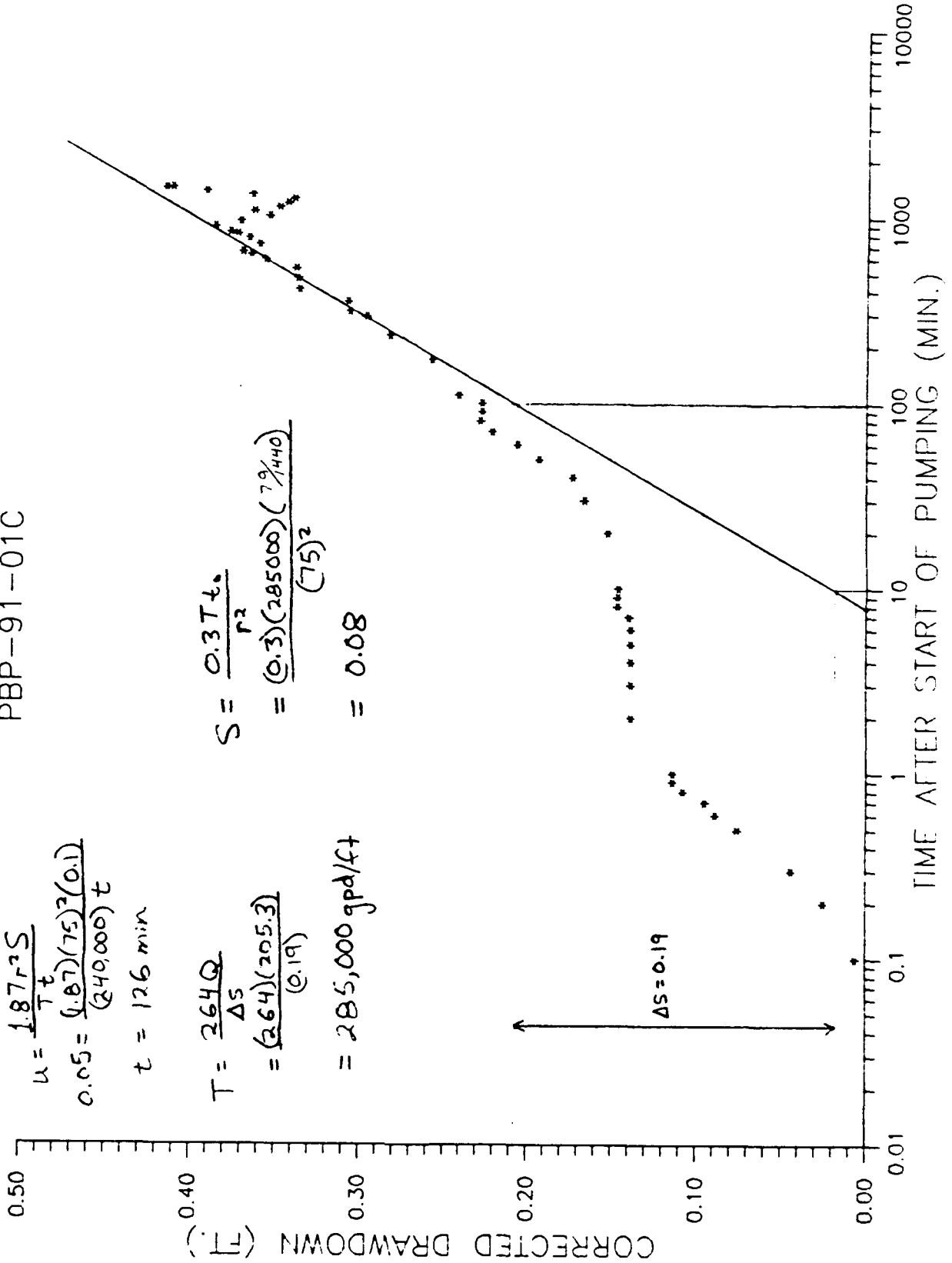
$$= \frac{(264)(205.3)}{(0.19)}$$

$$= 285,000 \text{ gpd/ft}$$

$$S = \frac{0.3Tt_0}{r^2}$$

$$= \frac{(0.3)(285,000)(7\frac{1}{4})}{(75)^2}$$

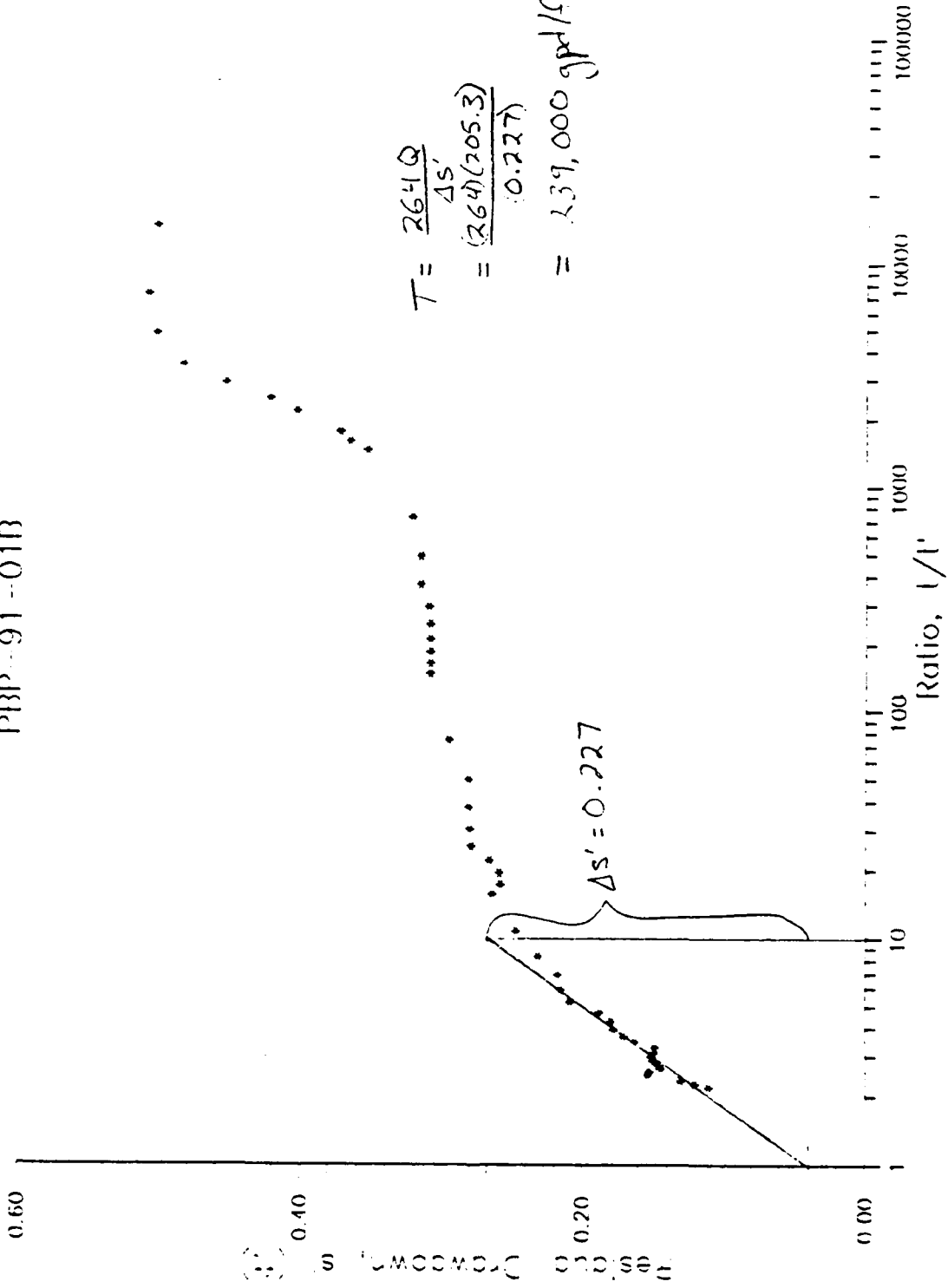
$$= 0.08$$



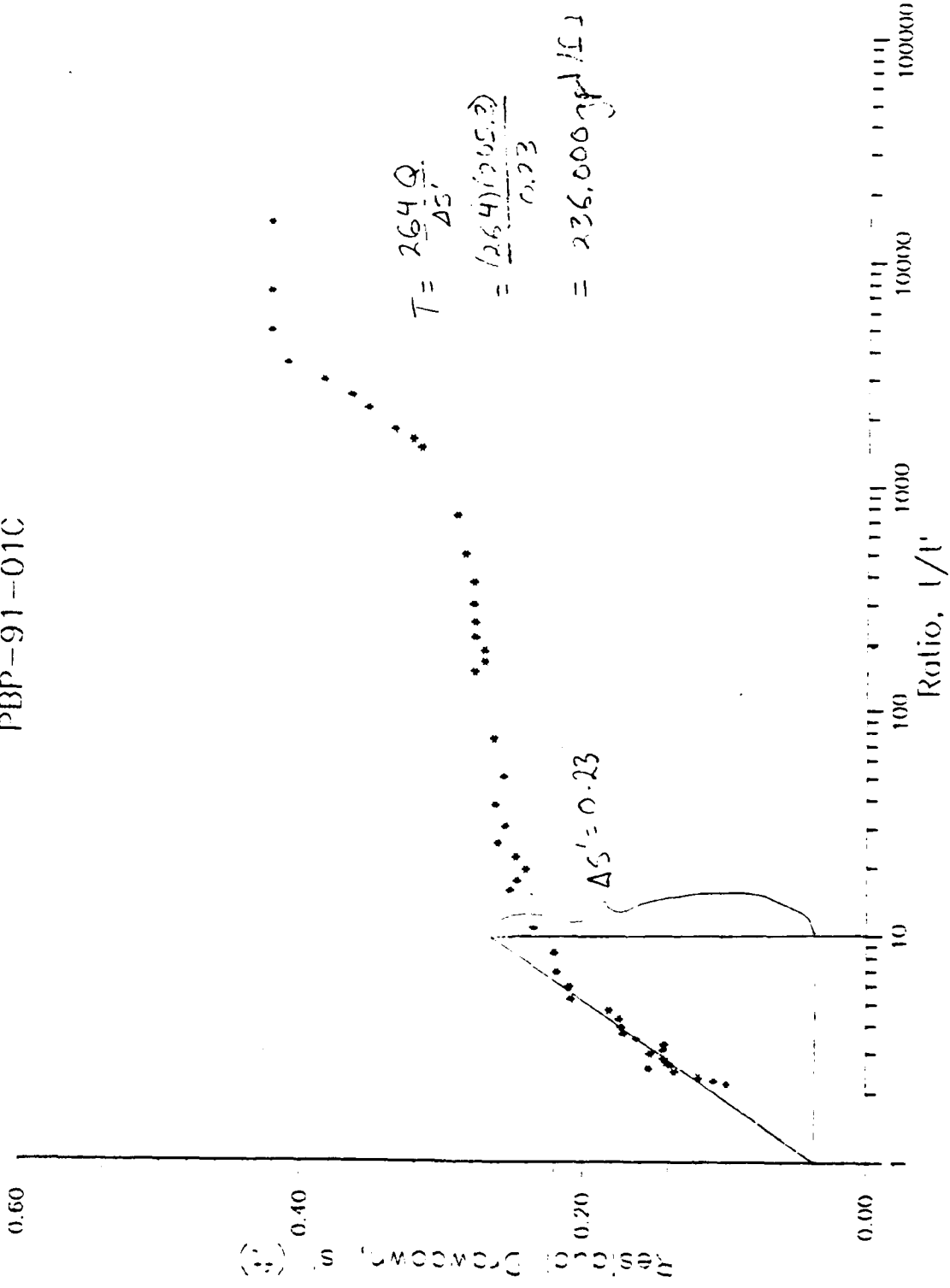
RESIDUAL DRAWDOWN ANALYSES



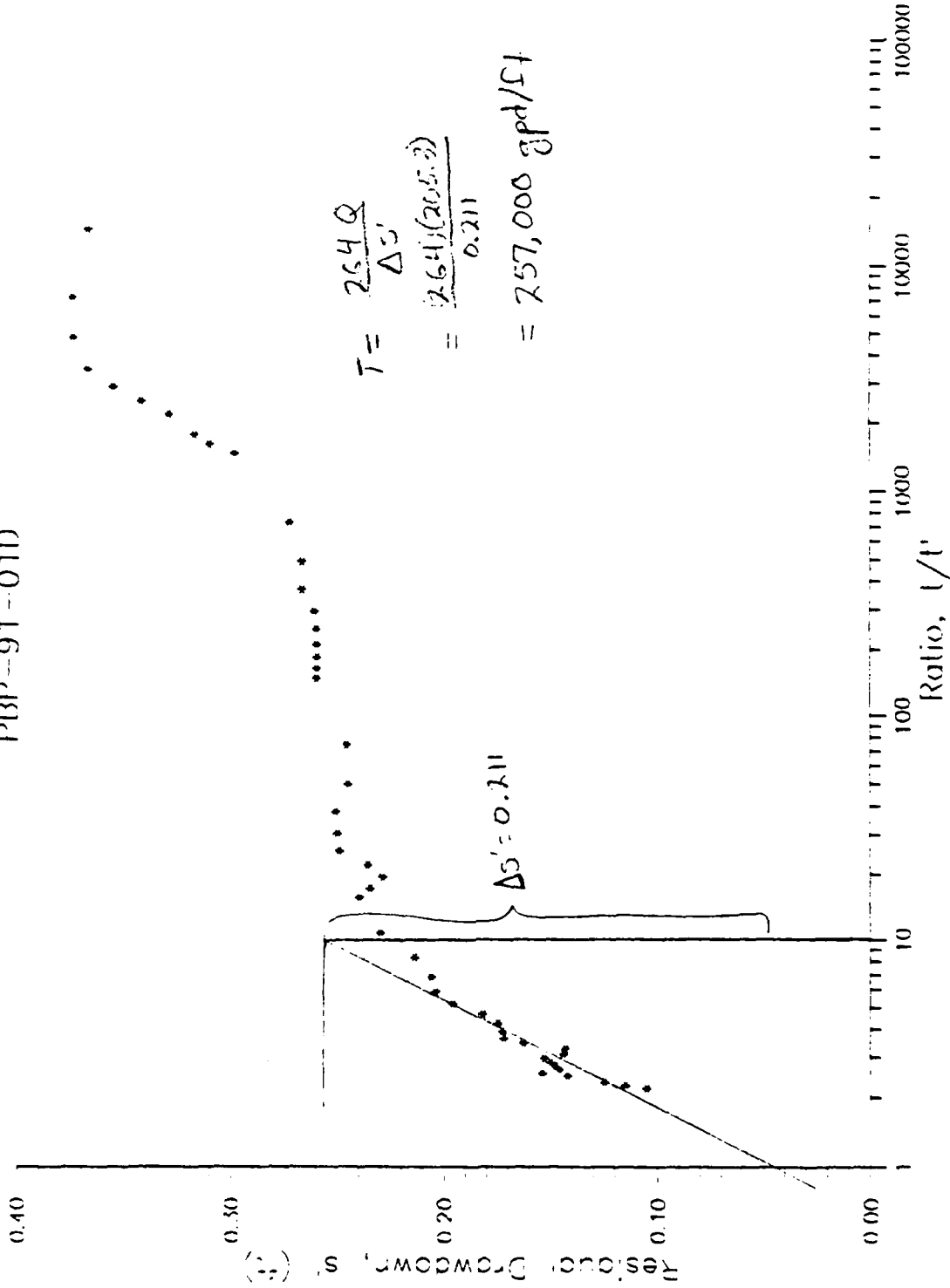
PBP-91-01B



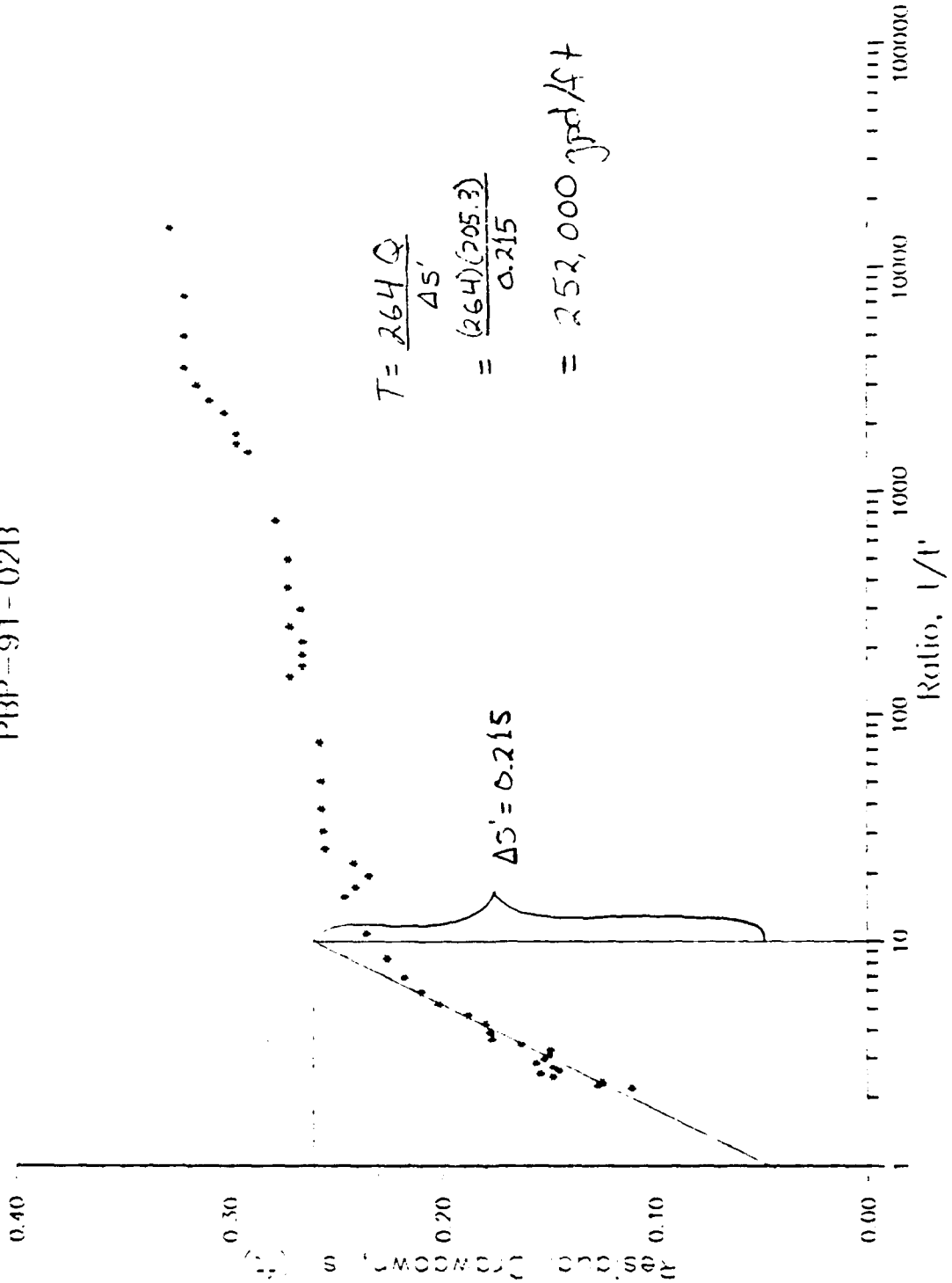
PBP-91-01C



PBP-91-01D

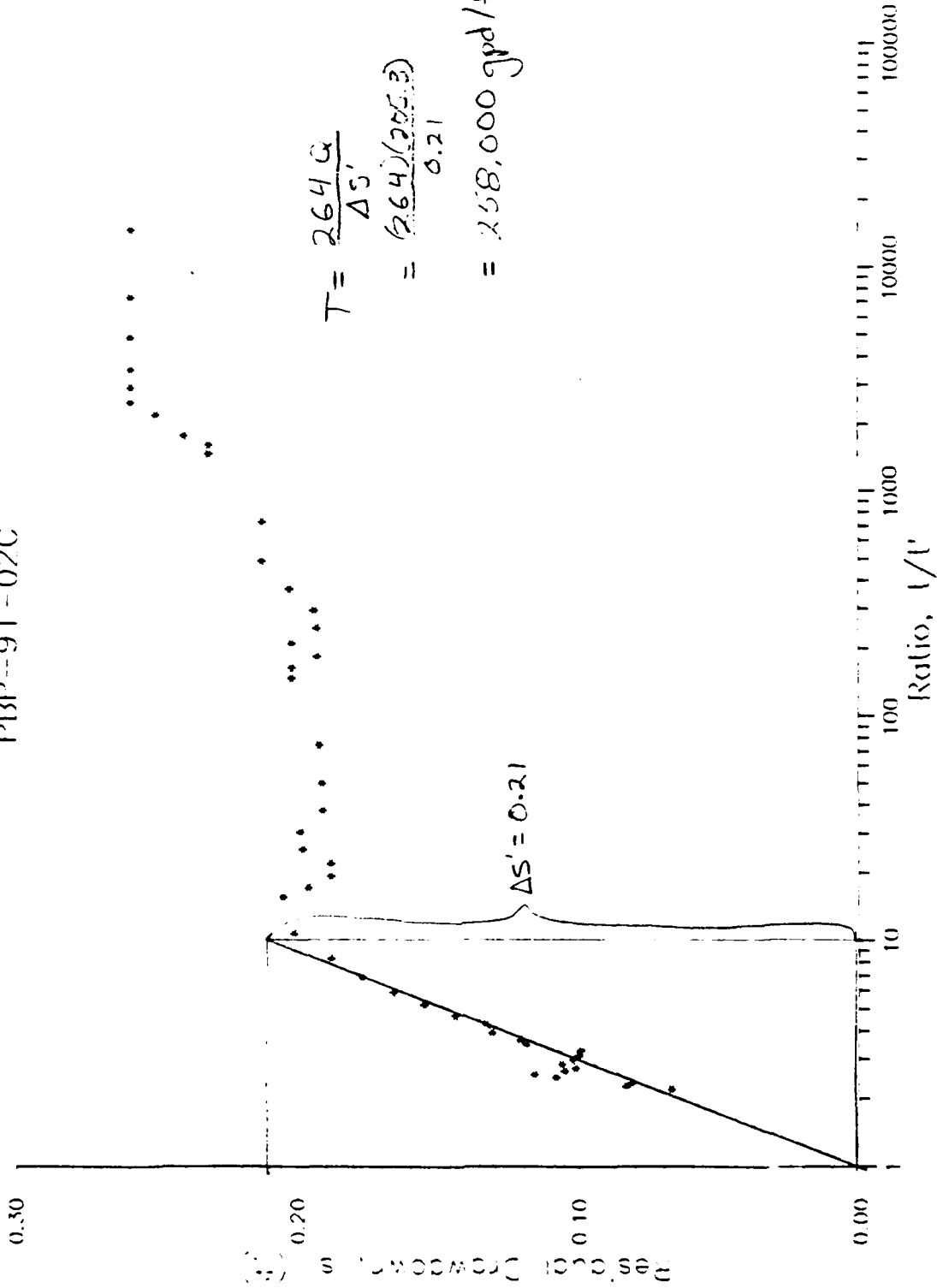


PBP-91-02B

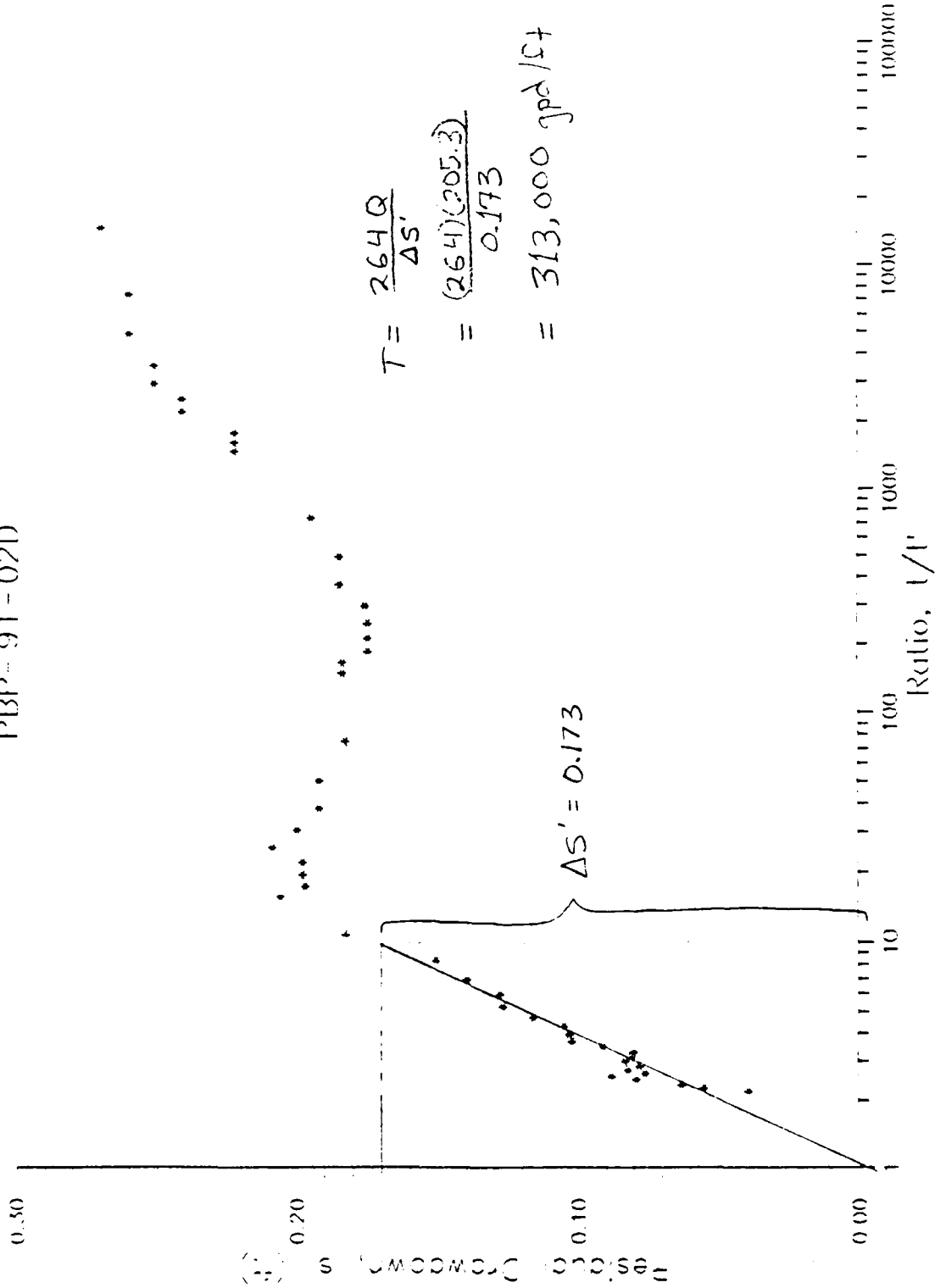


$$\begin{aligned}
 T &= \frac{264 Q}{\Delta S'} \\
 &= \frac{(264)(205.3)}{0.215} \\
 &= 252,000 \text{ gal/yr}
 \end{aligned}$$

PBP--91-02C

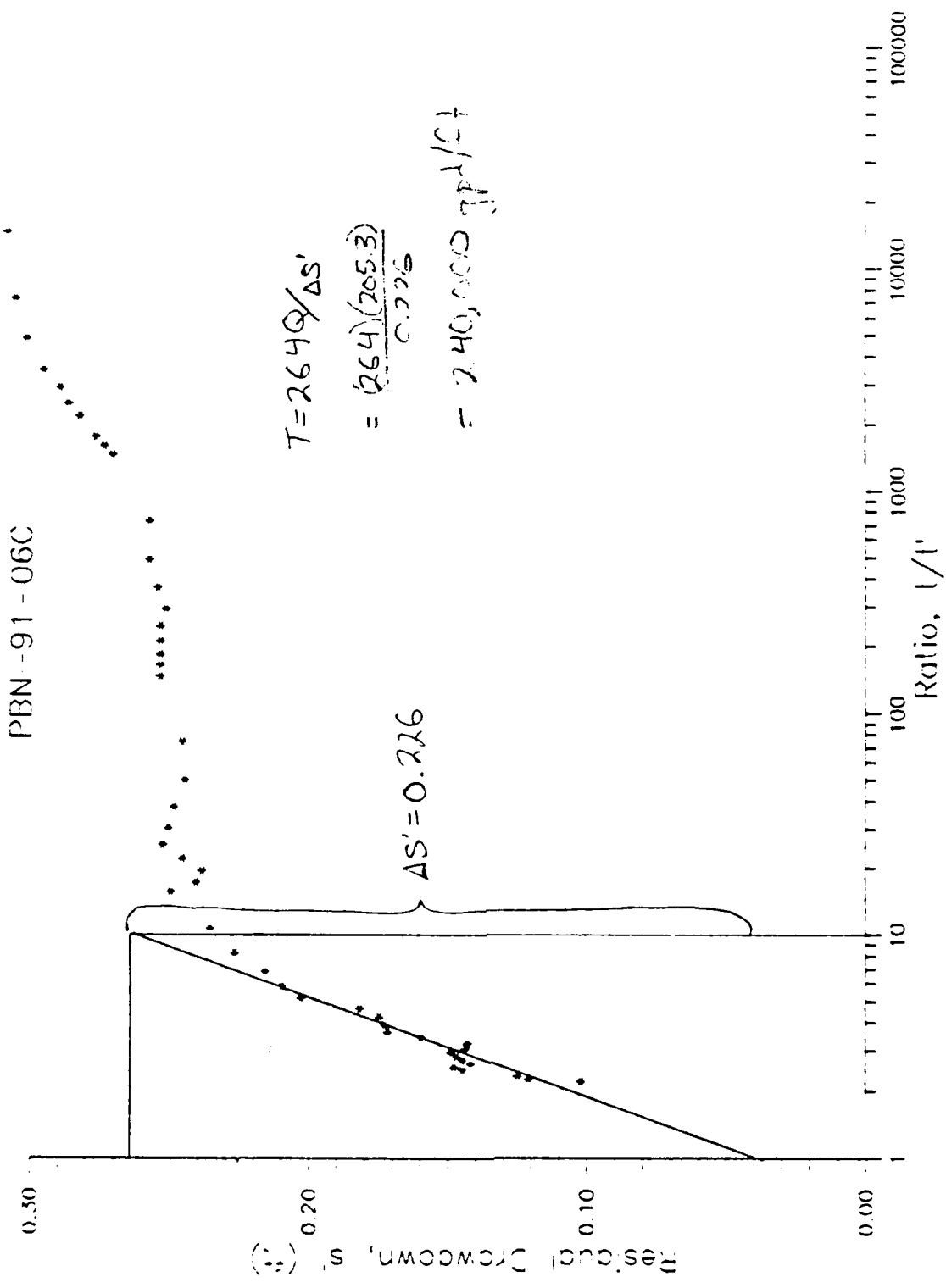


PBP-91-02D

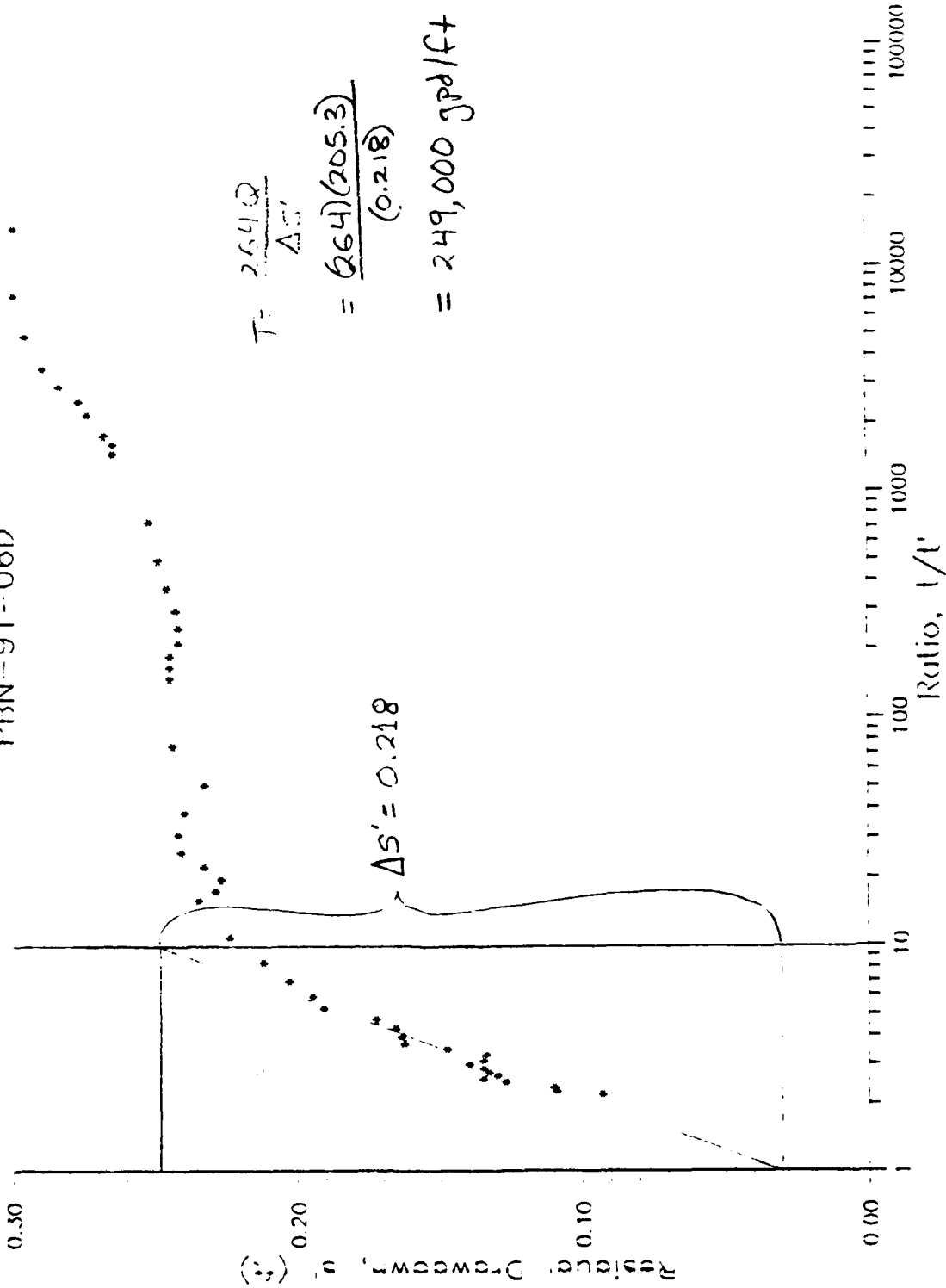


$$\begin{aligned}
 T &= \frac{264Q}{\Delta S'} \\
 &= \frac{(264)(205.3)}{0.173} \\
 &= 313,000 \text{ gpd/ft}
 \end{aligned}$$

PBN-91-06C



PBN-91-06D



$$T = \frac{264Q}{\Delta s'}$$
$$= \frac{264(205.3)}{(0.218)}$$
$$= 249,000 \text{ gpd/ft}$$



**Appendix J.2**  
**BAAP Regional Groundwater Flow Model**

## J.2 REGIONAL GROUNDWATER FLOW MODEL

A two-dimensional numerical groundwater flow model was developed to simulate regional water table conditions in the unconsolidated sand and gravel aquifer underlying BAAP. The model has been used to assist in the evaluation of the regional flow system, particularly the probable flow direction of contaminated groundwater outside the BAAP boundary and the influence of the Wisconsin River and Lake Wisconsin Reservoir. This model and its results are intended to be a tool in furthering the conceptual understanding of the geologic and hydrogeologic conditions at the site. In addition, the model has been used to establish boundaries for a site-specific groundwater flow model in the vicinity of the IRM extraction wells and Propellant Burning Ground.

This discussion of the model includes a presentation of the conceptual geologic framework and of the hydraulic data collected and utilized for the model, a description of the preprocessor and model code, assignments of model parameters and boundary conditions, and the results of model calibration, mass balance, and sensitivity analysis. Following preparation of this model an aquifer test was performed at IRM extraction well BCW-3 (see Appendix J.1). Results from this aquifer test have been utilized to validate this model and improve its calibration.

### J.2.1 Conceptual Setting

The modeling effort is based on a conceptual model of the geologic/hydrogeologic system that, in general terms, consist of an unconfined, isotropic aquifer under steady-state conditions. This aquifer occurs in a thick sequence of highly permeable, unconsolidated glacial deposits overlying and bounded by sandstone and quartzite bedrock units with a lower permeability. The lower permeability of the bedrock units likely restricts significant groundwater movement between the bedrock and unconsolidated flow systems. Given this condition, the lack of available information about the bedrock flow system, and the absence of site related contaminants in the bedrock aquifer, the model has not included the bedrock units as part of the active aquifer. The eastern portion of the modeled area is bounded by the Wisconsin River. The size and order of the river as well as the surrounding topography indicate it is a major groundwater discharge zone, and, therefore, represents a no-flow boundary for the modeled area. Therefore, cells east of the river are inactive.

The WP&L dam on the Wisconsin River has a significant influence on the groundwater flow system. Immediately north of the dam, the Lake Wisconsin Reservoir generally does not receive groundwater discharge because the elevation of the reservoir (approximately 774 to 775 feet MSL) is above the water table elevation over much of the modeled area. The

## APPENDIX J

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higher elevation of the reservoir results in a large area of stagnant groundwater with low horizontal and vertical gradients. This condition is illustrated in Figure 2-2 (see Section 2.2). This area likely transitions to a groundwater flow divide east of BAAP. At the divide groundwater flows diverge. Groundwater east of the divide flows to the east and discharges to the Lake Wisconsin Reservoir (likely north of the Wiegand's Bay area). Groundwater west of the divide flows south before discharging to the Wisconsin River below the WP&L dam. The precise location of the groundwater divide is not well defined due to the flat water table in this area. The location of the divide may vary with seasonal fluctuations in the water table. It should be noted that east of BAAP the Lake Wisconsin Reservoir appears to act as a no-flow boundary allowing no groundwater discharge to the aquifer and contributing very little recharge water to the aquifer.

### J.2.2 Data Collection

Data used in the groundwater flow model include ABB-ES' investigations at BAAP; previous investigations (EEI, 1981; Warzyn, 1982a and 1986; Sarko, 1982 and 1983; and Tsai et al., 1988); residential water supply well logs (Wisconsin Geologic and Natural History Survey, 1990); the Hydrologic Investigations Atlas HA-479 (Hindall and Borman, 1974); an Information Circular Regarding Sauk County Geology (Clayton and Attig, 1990); and U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles for Sauk City, Sauk Prairie, Baraboo, North Freedom, and Mazomanie (Wisconsin).

Hydraulic conductivity (K) of the aquifer was initially estimated at  $2 \times 10^{-2}$  to  $8 \times 10^{-2}$  cm/sec (50 to 200 feet per day [ft/day]) based on a series of rising-head slug tests performed by ABB-ES and documented in Appendix I. Results from the slug tests correlate well with the results from a preliminary aquifer test performed as part of the IRM construction ( $k = 150$  ft/day, see Appendix H). Hydraulic conductivity also has been estimated from the results of specific capacity tests performed on a series of high-capacity irrigation and production wells located at BAAP as well as in the BAAP vicinity (tests are summarized on irrigation well logs in Appendix D). Finally, a more comprehensive aquifer test was performed at Boundary Control Well No. 3. This test indicated a hydraulic conductivity of approximately 195 ft/day. This data suggests that the hydraulic conductivity over the area is fairly uniform.

The bedrock surface configuration was estimated using water supply well logs generated by local well drillers. Figure 2-1 shows a contour plan indicating the estimated elevation of the bedrock surface. Well logs used for preparing the contour plan are in Appendix D. While driller logs are generally not adequate for detailed geologic descriptions, they are suitable for locating the approximate bedrock surface depth. The bedrock contour plan indicates the

bedrock surface slopes downward to the south and east with the steepest slopes along the northern and western model boundaries. In a broad area across the central portion of the modeled area, the bedrock surface is approximately 625 feet MSL. These contours are in general agreement with regional data for Sauk County (Clayton and Attig, 1990).

The Wisconsin River surface water elevation has been measured at six temporary benchmarks (see Figure J.2-2 and Appendix H.4). All the temporary benchmarks are located downstream of the WP&L dam on bridge abutments and overhanging trees in local parks. The surface water elevation of the Lake Wisconsin Reservoir above the dam was obtained through records collected by WP&L. The reservoir is generally maintained within 0.5 foot of 774 feet MSL at the dam. Recent measurements by BAAP suggest the reservoir gradient may slope upward to 775 feet MSL upstream at Wiegands Bay. River gradients below the dam were also presented in HA-479 (Hindall and Borman, 1974). The gradient presented in HA-479 varies slightly from measured gradients in portions of the model area; however, it does not vary significantly from the average measured gradient. The river elevations and associated gradients based on the temporary benchmarks were used in the model since they represent recent measured values. The river elevation below the dam varies by several feet with varying discharge rates from the dam. The measured elevations utilized in the model were collected during a period of average discharge (6/7/90) after the spring high water discharge event.

Recharge to the unconsolidated aquifer was estimated through water budget analysis for typical site conditions as well as an assessment of low-flow stream discharge conditions. The water budget analyses for typical conditions in the BAAP area indicate a recharge rate of 5 to 7 in/yr where the surficial, lower permeable loess unit is present, and 7 to 9 in/yr where the loess unit is absent. These recharge rates compare well with low-flow stream discharge conditions on the lower Wisconsin River (Hindall and Borman, 1974). The low-flow stream discharge rates of 0.2 and 0.8 cubic feet per second per square mile of watershed basin correspond to average annual recharge rates of 3 and 11 in/yr, respectively. Appendix H includes a detailed analysis of the recharge rates.

### J.2.3 Preprocessor Description

The data preprocessor, a user interactive program used to structure the data set for input to the model, was MODELCAD (developed by Geraghty and Miller, Inc. 1989). MODELCAD is a graphical interface groundwater model preprocessor used to assemble the data sets for MODFLOW. This preprocessor enables the user to visually assemble the model data sets, easily developing the model grid, boundary conditions, zonation and parameters.

## APPENDIX J

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### J.2.4 Model Description

The USGS Modular Three-Dimensional Finite Difference Groundwater Flow Model Code (MODFLOW) was chosen for the BAAP regional groundwater flow model. Selection of a groundwater model numerical code was based on several considerations: the code had to have the ability to include as boundary or initial conditions all significant hydrogeologic influences, be well accepted and documented, and be readily available for use by others (in the public domain). The positive aspects of this selection included the model's potential for three dimensionality, variety of boundary condition modules, and ability to express variability in thickness of aquifer. In addition, MODFLOW is a finite difference numerical model that provides the essential features needed more detailed analysis of an area within the regional model (this was conducted as part of the IRM evaluation).

The MODFLOW model code (MacDonald and Harbaugh, 1988) is installed as Geraghty and Miller's version for 386-based PC implementation (Geraghty and Miller, 1990). It currently resides on a Dell model 486P with a 200-MG hard disk. This version of the code also includes the new modules for the Preconditioned Conjugate Gradient solver package and the Stream Routing package.

For regional simulations at BAAP, the model has been applied to evaluate two-dimensional horizontal unconfined (water table aquifer) flow in an homogeneous isotropic sand and gravel aquifer. The model output is a matrix of hydraulic heads at specified locations reflecting water table elevations. Output also includes mass-balance analysis and a reiteration of assigned input parameters. This single layer model application does not address vertical flow. However, with the exception of the locally perched water table in the vicinity of the Deterrent Burning Ground/Existing Landfill, substantial vertical gradients have not been observed in the sand and gravel aquifer.

To overcome convergence difficulties with the numerical solution-solving scheme encountered in the initial calibration attempts, initial model runs were made on a transient basis with a 100-year simulation period. To verify that steady-state conditions had been reached at the end of these transient runs, the output heads for a transient run were used as input for a steady-state simulation. The resulting heads were compared with the transient output heads, and the values matched within a tenth of a foot. This technique is used when the numerical solver is sensitive to the initial head values in the model.

The governing equation for the two-dimensional movement of groundwater used in the model is based on the application of Darcy's Law and conservation of mass to the Laplace

Equation and assumes that the axes are aligned along the principal flow directions or principal axis of anisotropy:

$$\frac{\delta}{\delta x} \left( K_{xx} b \frac{\delta h}{\delta x} \right) + \frac{\delta}{\delta y} \left( k_{yy} b \frac{\delta h}{\delta y} \right) = s \frac{\delta h}{\delta t} + W(xyt)$$

where:

- K<sub>xx</sub> and K<sub>yy</sub> are values of hydraulic conductivity along the x and y axes
- b is aquifer thickness
- h is the potentiometric head
- W is a volumetric flux representing sources and/or sinks
- S is the specific storage of the porous material, and
- t is time

This equation is solved at each cell of the model by using finite difference techniques. The finite difference technique solves the governing equation by approximating the solution to the partial differential equation through a system of algebraic equations which arise through the process of subdividing the model area into individual cells. The solution to the system of equations is achieved by first assuming a head value for each cell, the initial head array, and then using matrix mathematics to revise the solution to a closer approximation of the solution given the various stresses applied to the model. The previous and present solutions are then checked against each other, and the process reiterated until a minimal preselected difference, the closure criterion, is attained all cells for the two solutions. In this modeling effort, a closure criterion of 0.01 feet was used.

### J.2.5 Assignment of Model Parameters

The finite difference grid designed for this model is composed of 37 rows and 24 columns with a variable grid spacing ranging from 1,000 to 2,000 feet. Figure J.2-2 depicts the grid network, as well as assignment of boundary conditions.

No-flow conditions were assigned along the northern and western boundaries of the model area. No-flow conditions best represent actual groundwater flow conditions in these areas where the permeable sand and gravel aquifer is bounded by the bedrock with a lower permeability. It is assumed in the model that the bedrock surface acts as a barrier to flow. Although a small flux of groundwater may move between the bedrock and the sand and

## APPENDIX J

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gravel aquifer, it is likely much smaller than the amount of water moving through the sand and gravel aquifer. This is supported by the lack of vertical hydraulic gradients observed between bedrock and overburden monitoring wells at the SWN-91-05D&E well cluster (see Subsection 6.3). As a result, not including the bedrock aquifer does not significantly affect the representation of the sand and gravel aquifer flow system over the central portion of the model.

Constant-head conditions were assigned along the southern and southeastern model boundaries. Constant-head cells perform analogous to large surface water bodies that may act as unlimited sinks or sources. These cells have specified hydraulic heads which are not allowed to vary during the model simulation, although the cells may either contribute or receive water from the active portion of the model as necessary to satisfy the overall mass balance of the model. The Wisconsin River south of the WP&L dam has generally been interpreted as a groundwater discharge zone. Within the model, the constant-head values ranged from 733.8 immediately below the WP&L dam to 728.5 at the southwestern model boundary. These values were based on surface water elevations measured at temporary benchmarks along the river. The locations and water elevations at the temporary benchmarks are shown in Figure J.2-1.

General-head boundary (GHB) conditions were applied in the northeastern area of the model to reflect the influence of Gallus Slough (see Figure J.2-1), an embayment of the Lake Wisconsin Reservoir located approximately 2,800 feet east of the active model area. The GHB acts similarly to a constant-head boundary although the surface water body being modeled (Gallus Slough) is located outside the modeled area. The flow rate into or out of the model along the GHB is based upon Darcy's Law, and is proportional to the assigned hydraulic conductivity of the model cells and the difference in heads between the active cells along the GHB and the constant-head assumed for Gallus Slough (774 feet MSL).

Streambed/groundwater interactive conditions were assumed at the eastern boundary of the model along the Lake Wisconsin Reservoir above the WP&L dam. The functioning of the river module, is similar to the general-head boundaries, although a streambed hydraulic conductivity is also included. A river stage elevation and streambed conductance (incorporating the streambed hydraulic conductivity, thickness and area) are assigned to each boundary cell. Darcy's Law is then applied using the streambed conductance and differential hydraulic heads between the aquifer and river stage elevations to determine discharge fluxes to or from the river. If the groundwater table falls below the streambed bottom, the model applies a limited flux based on the river stage and the bottom elevation of the streambed. The only available information on streambed conditions at the Lake Wisconsin Reservoir is sediment sampling completed at Gruber's Grove Bay, which

identified approximately 7 feet of fine-grained sediment (EEI, 1981). Given the minimal amount of information on streambed sediments, the conductance term was varied during model calibration. This resulted in a vertical hydraulic conductivity value of  $4 \times 10^{-7}$  cm/sec ( $1 \times 10^{-3}$  ft/day) being assigned to those sediments as calibrated for the streambed conductance parameter.

The final boundary condition consists of a series of active variable head cells which were applied to the southern most portion of the western model boundary where the sand and gravel aquifer is not bounded by the bedrock. These cells allow the water table elevation to vary and respond similarly to cells within the central (active) portion of the model. Within the model code MODFLOW is constructed to establish a no-flow boundary conditions outside the active model area. This condition is a reasonable simulation of actual conditions as groundwater flow lines near this western boundary are from north to south, reflecting discharge to the Wisconsin River.

Permeability and Aquifer Base Elevation. The aquifer was modeled with a K of from 150 to 200 ft/day (final calibrated value = 150 ft/day). This hydraulic conductivity value is within the range of field values observed in the model area and was selected based on the data and on the results of calibration and sensitivity analyses, discussed below. The aquifer bottom elevation was based on the bedrock surface elevation, which is approximately 625 ft MSL in the central portion of the model area and slopes upward along the northern and western boundaries to elevation 775 and downward to elevation 600 to 575 along the southern boundary.

Recharge: Recharge in all the simulations consisted of natural recharge from infiltrating precipitation at a uniform rate of 6 in/yr evenly distributed over the model area. This rate is based on water budget calculations (5 to 7 inches per year) and low-flow stream discharge measurements (corresponding to recharge of 3 to 11 inches per year) as discussed in Appendix H.

River Gradient and Constant Head Values: The river gradient calculated from the Hydrologic Investigations Atlas HA-479 is 0.00028. This gradient along with tail water elevation data from WP&L were used to initially estimate the constant-head values for the southern model boundary along the Wisconsin River. Following the measurement of river water elevations at temporary benchmarks (see Figure J.2-1), the estimated constant-head values were replaced with values based on the measured river water elevations. During late May and early June 1990 flood gates were occasionally opened at the WP&L dam resulting in a 3- to 4-foot rise in the river surface elevation. However, the flood stage river elevations were not used to establish the constant-head elevations as the intention of the model is to



## APPENDIX J

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reflect steady-state conditions with more typical river water elevations. The river surface drops 0.7 foot (733.8 to 733.1 feet MSL) from the WP&L dam to the southern portion of Sauk City, a gradient of approximately 0.00005. The river then drops approximately 1.5 feet over the next mile (733.1 to 731.7 feet MSL), a gradient of 0.00026. This gradient is maintained over the next 3 miles (731.7 to 728.1 feet MSL), a gradient of 0.00024.

### J.2.6 Model Calibration

To simulate the water table aquifer flow system, the model was first calibrated to reflect known average conditions. This involved defining the modeled hydraulic parameters of the aquifer materials to match, as closely as possible, observed field conditions and create a reasonable model of flow with respect to flow direction, gradient, and overall water mass balance.

After the boundary conditions were established and the model input debugged, the BAAP model was calibrated by varying the hydraulic conductivity, streambed conductance, and recharge arrays. The water table map used for initial calibration was based solely on information available within the base boundaries as no data outside this area was then available (see Figure J.2-3).

The initial simulation was run with a hydraulic conductivity value of 100 ft/day, recharge rate of 6 in/yr, and with streambed conductances calculated based on an assumed vertical hydraulic conductivity of 1.0 ft/day ( $3.5 \times 10^{-4}$  cm/sec). The result of this simulation gave a water table that was higher than actually observed, and a greater discharge of water from the aquifer to the Lake Wisconsin Reservoir than observed. Following numerous calibration runs, where the hydraulic parameters were varied within reasonable limits to best represent observed site conditions, an adequate match between observed water table contours (see Figure J.2-3) and modeled water table contours was achieved (Figure J.2-1). As these figures indicate, the modeled water table is generally within 5 feet of the measured water table and flow directions and gradients are very similar. For the final calibration the following parameters were applied:

Hydraulic Conductivity - 150 ft/day ( $5.3 \times 10^{-2}$  cm/sec)

Recharge - 6 in/yr

Vertical Hydraulic Conductivity for Streambed Conductance - 0.001 ft/day  
( $3.5 \times 10^{-7}$  cm/sec)

After development of the calibrated model presented in Figure J.2-2, additional water table levels were gathered from irrigation and monitoring wells located south of BAAP. These

data have been used to generate a regional water table contour plan presented in Figure J.2-4. A comparison of Figures J.2-4 and J.2-2 indicates a good match between the observed water table contours and the modeled contours south of BAAP. The match is good for water table elevations, horizontal gradients, and interpreted flow direction.

Given the presence of a plume of VOCs emanating from the Propellant Burning Ground area and flowing southward, it has become important to establish the direction of groundwater flow south of BAAP. The results indicate groundwater flowing south from the Propellant Burning Ground likely discharges to the Wisconsin River south of the WP&L dam, but north of the Village of Prairie du Sac Municipal Well (i.e., Well No. 2). A model simulation that included Well No. 2 pumping 1,000 gallons per minute did not indicate a measurable zone-of-influence. However, this may have resulted from the size of active cells in this area (cell size = 500 feet by 500 feet). It should be noted that Well No. 2 has recently been extended from the overburden aquifer into the bedrock aquifer. This effort was undertaken as a result of high NIT concentrations in the overburden aquifer.

#### J.2.7 Mass Balance

Table J.2-1 presents the mass balance output for the calibrated regional model. As this table indicates, there was good correlation between input and output water volumes (0.05 percent discrepancy). As the model was calibrated to steady state conditions, there was no gain (input) or loss (output) in storage. Water supplied to the model was dominated by recharge (97.8%). Water left the model primarily through the constant head cells which represent the Wisconsin River below the WP&L dam (94.1%). Much smaller amounts of water left the model through head dependent cells along the general head boundary (5.8%). This represents groundwater discharge to Gallus Slough (part of the Lake Wisconsin Reservoir). As the conceptual model indicated only minor amounts of groundwater enter (2.2%) or leave (1.1%), the regional flow system model through the river cells which represent the Lake Wisconsin Reservoir.

#### J.2.8 Sensitivity Analysis

Following calibration, the BAAP model was subjected to a sensitivity analysis in which values of four model parameters were independently varied to determine the sensitivity of each parameter within the model. This analysis took the form of steady-state simulations in which hydraulic conductivity, recharge, aquifer bottom elevation, constant-head elevation, and streambed conductance were independently varied with five to six test values for each parameter.

## APPENDIX J

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Eleven observation cells spaced throughout the active model area and near significant hydraulic features (i.e., Gruber's Grove Bay) were specified for comparison of computer-generated water levels (Figure J.2-5). The 11 cells along with their respective locations on the site map are:

<u>Row, Column</u>	<u>Location</u>
(4,9)	- East of the Old Acid Area/Old Fuel Oil Tank
(4,19)	- Deterrent Burning Ground/Existing Landfill
(8,11)	- Propellant Burning Ground
(9,22)	- Wisconsin River, north of Gruber's Grove Bay
(12,10)	- Southwest boundary of BAAP site
(13,17)	- Wisconsin River, south of Gruber's Grove Bay
(16,16)	- Wisconsin River, at the WP&L dam
(20,8)	- Central portion of the model area
(21,16)	- Wisconsin River, south of the WP&L dam
(27,19)	- Wisconsin River, southeast portion of the model area
(33,7)	- South-central portion of the model area

Model response to variation of each of the five parameters was analyzed by comparing the water level change for each cell as each parameter was varied above and below its calibrated value. For example, when aquifer bottom elevation was varied from 625 to 675 feet, the computed water levels at all cells rose with the exception of cells (21,16) and (27,19), which are located adjacent to constant head nodes.

The results of the sensitivity analysis are presented in Figures J.2-6 through J.2-9. Simulated water levels generated at the observation cells during the sensitivity analysis were compared to the water levels calculated in the calibration run (where all parameters remained unchanged), the resulting differences were used to gauge the sensitivity of the model to the change in each parameter.

Figure J.2-6 illustrates the sensitivity of water level to the aquifer base elevation. As mentioned, only the central portion of the model area, where limited information suggest the aquifer base elevation is approximately 625 feet MSL, was evaluated. As expected, the water table elevation rose as the aquifer base was raised. Generally, those cells located in the southern portion of the model appeared to be more sensitive while those closer to the river boundary were less sensitive (due to their proximity to boundary conditions). The response was relatively linear near the central portion of the model about the calibrated base elevation of 625 feet MSL.

Figure J.2-7 illustrates the sensitivity of water level to the hydraulic conductivity-recharge ratio. Hydraulic conductivity and recharge were evaluated together because they have similar, but inversely related, influence on overall model performance. At ratios near the calibrated value, the model response was generally linear. However, as the ratio was lowered to less than half its calibrated value (i.e., decreased hydraulic conductivity and increased recharge), the response became nonlinear with substantially higher water table elevations. As the ratio was increased (i.e., increased hydraulic conductivity and reduced recharge), the water table elevations fell, although the decrease was not as dramatic. This likely reflects the influence of the constant-head cells along the southern boundary of the model. Generally, all of the cells evaluated illustrate a similar response (nonlinear water table increases at low ratios and linear water table decreases at high ratios) with the exception of cells (21,16) and (27,19). Both of these cells are located near the river south of the dam and showed very limited water table changes. This is likely attributed to their proximity to the constant-head cells at the river.

Figure J.2-8 illustrates the sensitivity of the water level to the streambed conductance. Generally, all of the evaluated cells showed very little change in water table elevation at conductances below the calibrated values. This condition suggests the streambed is generally acting as a no-flow boundary as had been hypothesized (see Subsection J.2.1). This is also supported by the mass-balance analysis for the model (see Subsection J.2.7). However, above the calibrated value, the model water table elevation increased, indicating that, under the model condition, the stream (Lake Wisconsin) was contributing water to the model. It should be noted that cell (16,16), located adjacent to the dam, was the most sensitive cell to increases in the streambed conductance.

Figure J.2-9 illustrates the sensitivity of water level to the constant-head changes. This figure shows a linear response at nearly all evaluated cells. Generally, for every 3 feet of change in the constant-head cell elevation, the water table in the southern portion of the model increased by 2 to 3 feet while the water table in the northern portion of the model increased by only 1 foot.

The hydraulic conductivity/recharge ratio was the most sensitive parameter of those varied in the sensitivity analysis. The model was particularly sensitive to decreased values of hydraulic conductivity and increased values of recharge. The model demonstrated only moderate sensitivity to variation in the other model parameters.

## APPENDIX J

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### J.2.9 Verification/Supplemental Calibration

Following development of the regional model, ABB-ES conducted a second, more comprehensive aquifer test (at BCW-3, see Appendix J). The result of this test indicated a hydraulic conductivity on the order of 195 ft/day in the overburden aquifer. This is only slightly above the calibrated model, hydraulic conductivity of 150 ft/day. When the regional model was rerun with this higher hydraulic conductivity, the match between observed and modeled contours improved.

### J.2.10 Summary

A two-dimensional numerical groundwater flow model of the BAAP region has been developed and calibrated. The modeled water table elevations flow directions and gradients match well with water table elevations measured in the field. However, the model does not account for vertical flow influences, particularly as they relate to the groundwater discharge from the bedrock. These low flow contributions are not considered significant to the representation of the principal flow in the overburden aquifer. The modeled water table contours predict contaminated groundwater flowing south from the Propellant Burning Ground likely discharges to the Wisconsin River just south of the WP&L dam and north of the Village of Prairie du Sac Well No. 2.

The model is also useful in understanding the importance of the hydrogeologic parameters and boundary conditions in determining flow in the overburden aquifer. This was explored more thoroughly through a sensitivity analysis conducted with the model. Overall, the sensitivity analysis indicates water levels increased as the hydraulic conductivity/recharge ratio and aquifer base elevation decreased, and as streambed conductance and constant-head elevations increased. The model responded with moderate sensitivity to changes in the boundary condition constant-head elevation. Sensitivity was also moderate with changes in the streambed conductance and aquifer base elevation except at a few cells near the Lake Wisconsin Reservoir where sensitivity was increased. The model was most sensitive to changes in the hydraulic conductivity/recharge ratio below the calibrated model value.

The regional model has served as the basis for a site-specific model of the Propellant Burning Ground and IRM extraction well area. This site-specific model was constructed as a tool to help address specific questions regarding the function of the IRM facility as well as different extraction system options.

## J.2 REFERENCES

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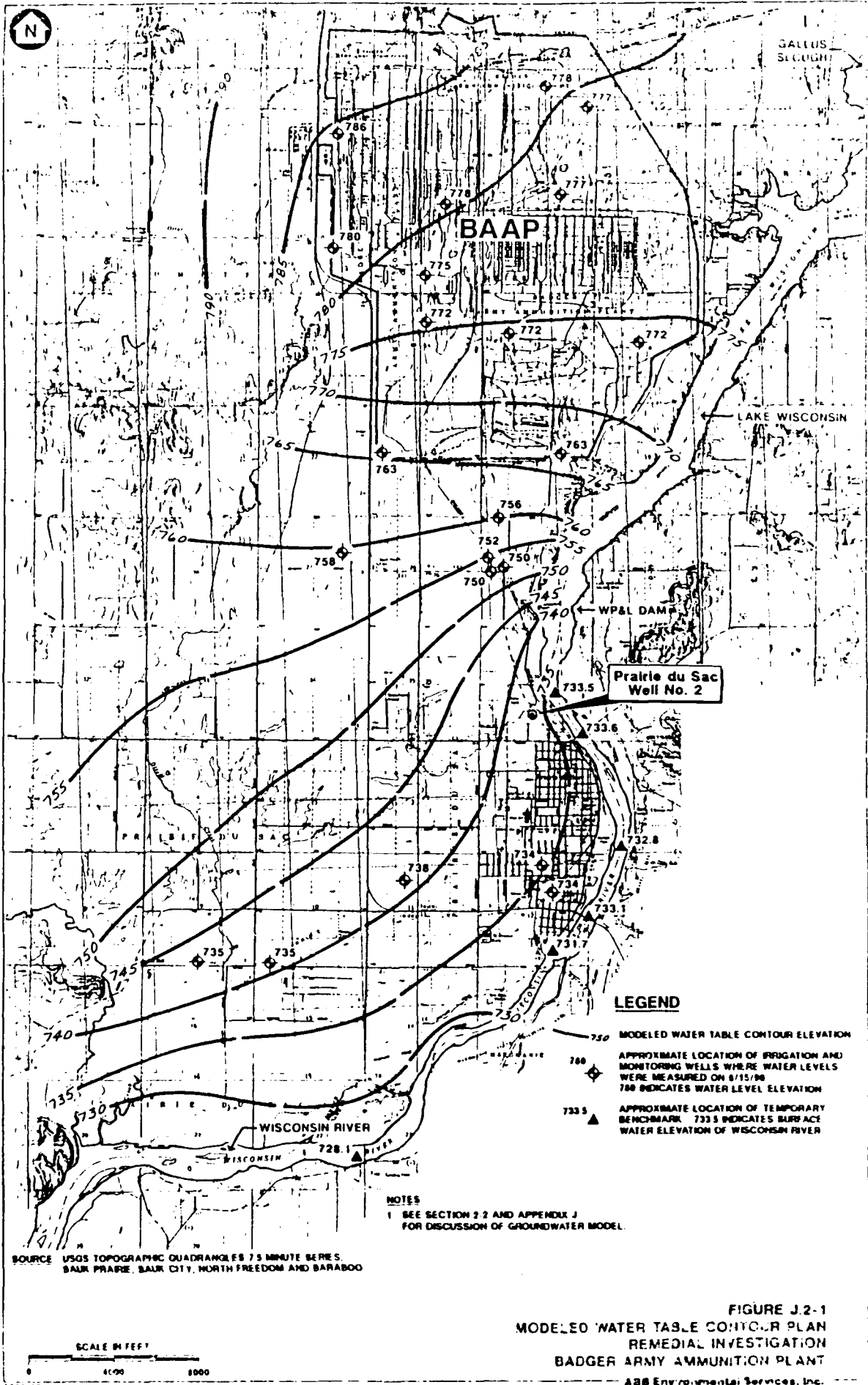
TABLE J.2-1  
 MASS BALANCE  
 REGIONAL GROUNDWATER FLOW MODEL

REMEDIAL INVESTIGATION  
 BADGER ARMY AMMUNITION PLANT

IN (WATER ENTERING MODEL)	OUT (WATER LEAVING MODEL)
Storage = 0.0	Storage = 0.0
Constant Head Boundary = 0.0	Constant Head Boundary = 1,674,300 (94.1%)
Recharge = 1,741,600 (97.8%)	Recharge = 0.0
River Leakage = 38,627 (2.2%)	River leakage = 2,184 (1.1%)
Head Dependent Boundary = 0.0	Head Dependent Boundary = 102,890 (5.8%)
Total In = 1,780,200	Total Out = 1,779,400

**Notes:**

1. All volumes are in cubic feet
2. In/Out difference is 876 cubic feet. This is equivalent to a 0.005 percent difference.



**LEGEND**

- 750 — MODELED WATER TABLE CONTOUR ELEVATION
- 780 ◆ APPROXIMATE LOCATION OF IRRIGATION AND MONITORING WELLS WHERE WATER LEVELS WERE MEASURED ON 8/15/98  
780 INDICATES WATER LEVEL ELEVATION
- 733.5 ▲ APPROXIMATE LOCATION OF TEMPORARY BENCHMARK 733.5 INDICATES SURFACE WATER ELEVATION OF WISCONSIN RIVER

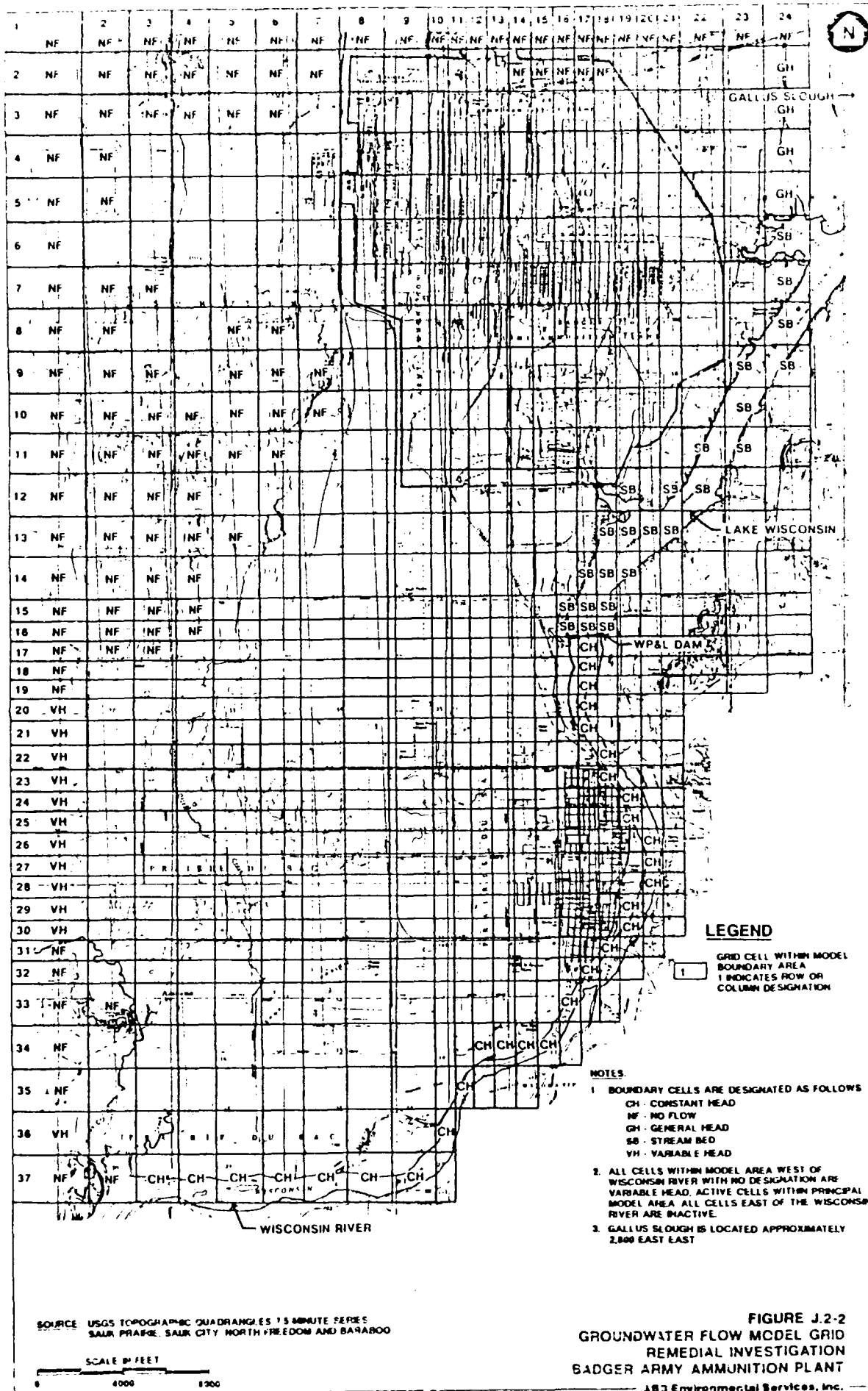
**NOTES**  
 1 SEE SECTION 2.2 AND APPENDIX J FOR DISCUSSION OF GROUNDWATER MODEL.

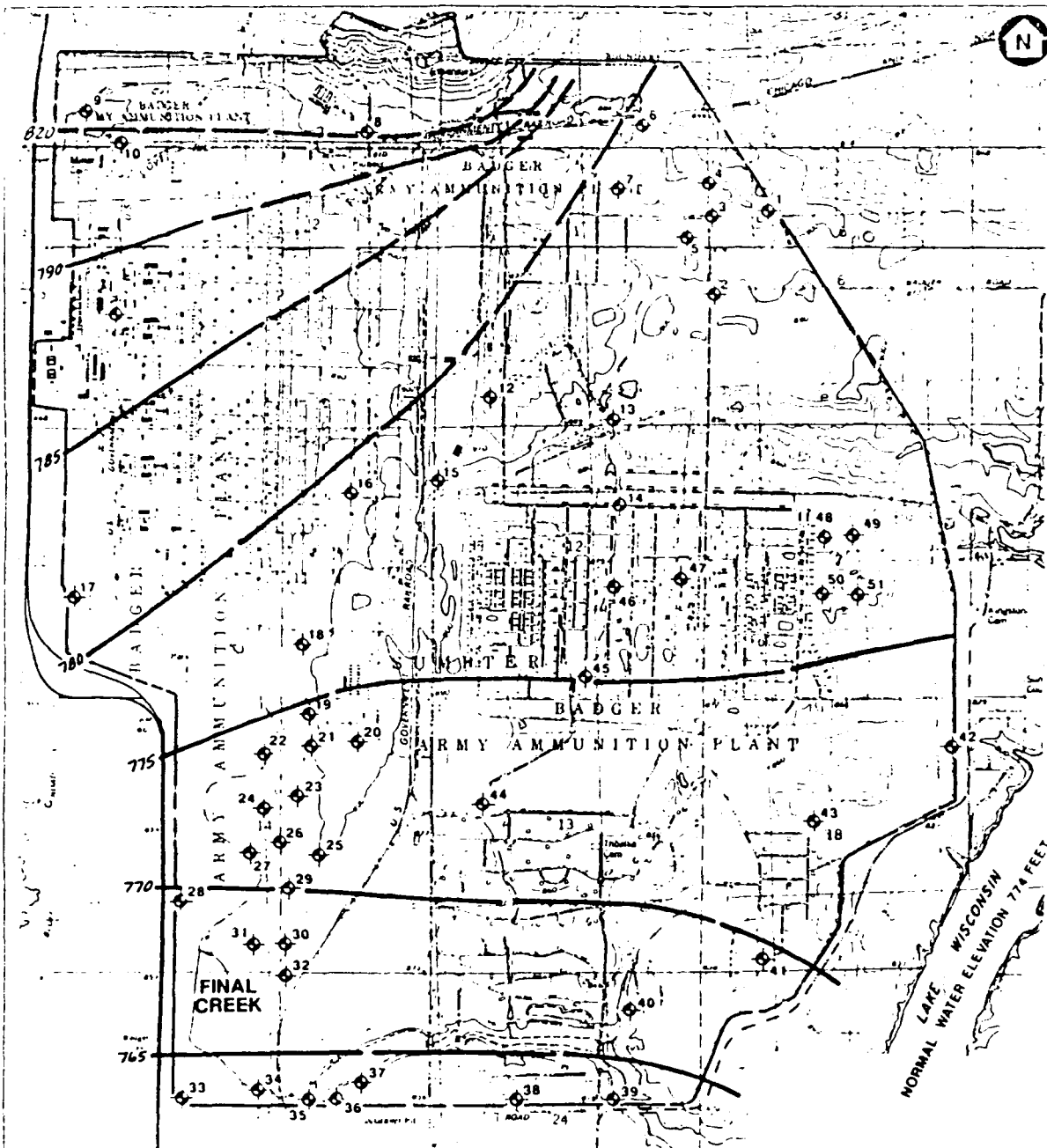
SOURCE USGS TOPOGRAPHIC QUADRANGLES 7.5 MINUTE SERIES, SAUK PRairie, SAUK CITY, NORTH FREEDOM AND BARABOO

SCALE IN FEET  
 0 4000 8000

**FIGURE J.2-1**  
 MODELED WATER TABLE CONTOUR PLAN  
 REMEDIAL INVESTIGATION  
 BADGER ARMY AMMUNITION PLANT  
 A38 Environmental Services, Inc.







MAP CODE	WELL NUMBER	WATER LEVEL (FT)	MAP CODE	WELL NUMBER	WATER LEVEL (FT)
1	ELN 82 02C	778.4	27	PBN 85 03A	770.9
2	DBN 89 02B	778.6	28	S 1109	768.0
3	ELN 82 04C	778.7	29	PBM 85 04	770.0
4	ELN 82 01C	779.1	30	PBN 85 04A	768.8
5	DBN 89 04B	778.5	31	PBM 89 07	768.4
6	S 1151	779.6	32	PBM 85 06	767.3
7	S 1132	779.2	33	S 1101	763.7
8	S 1129	823.1	34	S 1147	764.0
9	S 1128	822.0	35	S 1148	763.4
10	S 1127	812.5	36	S 1102	763.4
11	S 1126	787.2	37	S 1149	764.3
12	NAN 81 01A	778.9	38	S 1104	763.6
13	S 1124	777.9	39	SPN 89 05A	763.7
14	S 1119	776.8	40	S 1110	767.2
15	S 1150	778.4	41	S 1111	760.6
16	S 1125	778.9	42	S 1113	774.1
17	S 1123	781.9	43	S 1112	773.2
18	PBM 89 11	776.4	44	S 1115	772.8
19	PBN 82 01A	774.8	45	S 1118	775.2
20	LON 89 03A	773.6	46	RPM 89 02	776.4
21	PBN 82 02A	773.9	47	RPM 89 01	776.3
22	PBM 82 01	773.9	48	NLN 82 01A	776.0
23	PBM 82 05	772.6	49	NLN 82 02A	775.7
24	PBN 82 03A	772.2	50	NLN 82 03A	775.8
25	PBN 85 02A	771.1	51	NLN 82 05A	775.5
26	PBM 85 01	771.6			

**LEGEND**

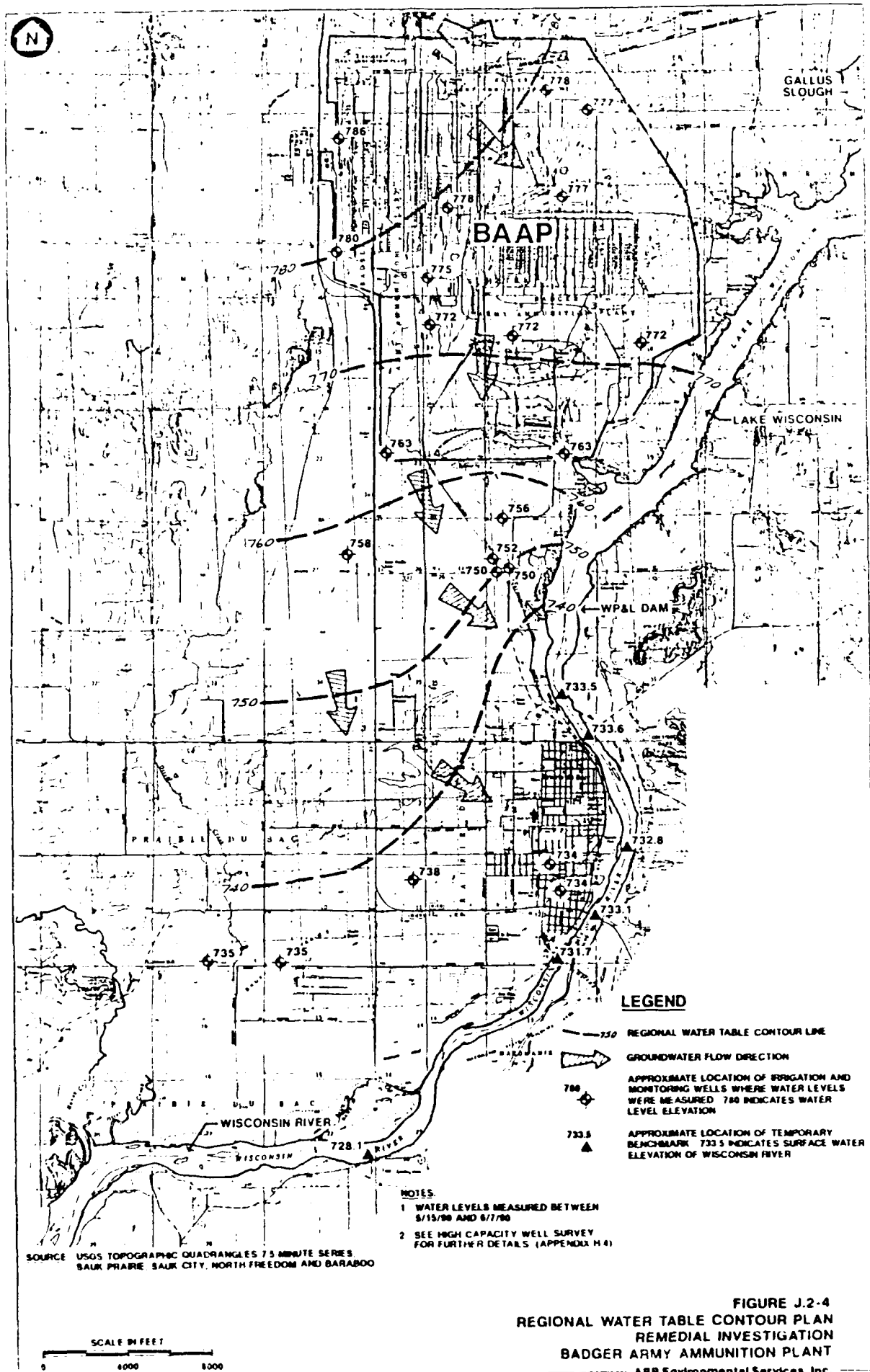
- ◆ APPROXIMATE LOCATION OF MONITORING WELL USED IN DEVELOPING WATER TABLE CONTOUR PLAN
- ◻ WATER LEVELS MEASURED IN THIS REGION APPEAR TO BE AFFECTED BY THE POTENTIOMETRIC SURFACE IN THE BEDROCK (S1129) AND BY THE PRESENCE OF FINE GRAINED SILT AND CLAY LAYERS (S1127).
- THE 820 CONTOUR REPRESENTS THE APPROXIMATE WATER TABLE ELEVATION IN THIS AREA.

**NOTES:**

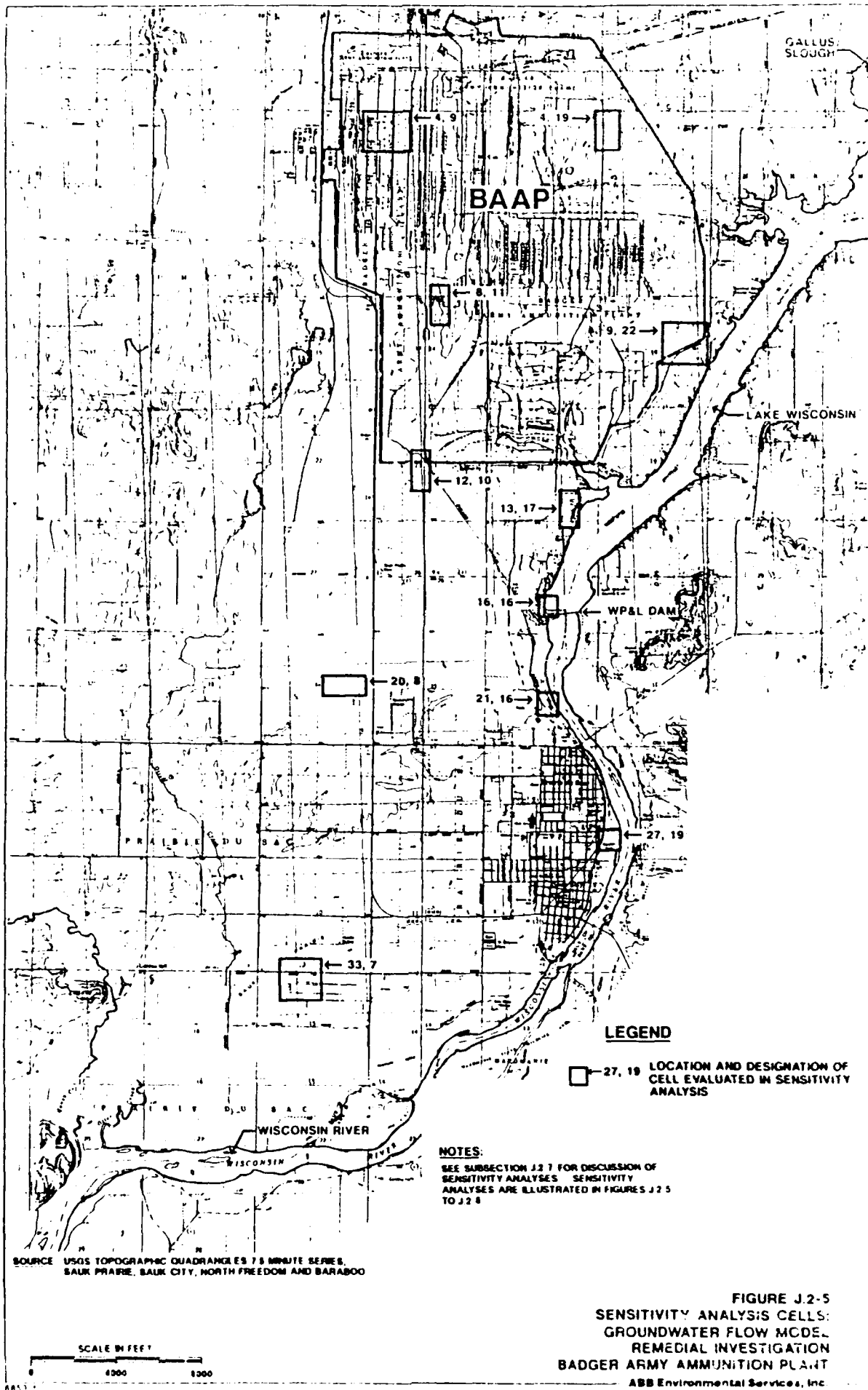
WATER LEVELS MEASURED ON OCTOBER 25, 1989  
 WELL SURVEY BASED ON U.S. COASTAL AND GEODETIC DATUM SURVEY BY VERBICHER ASSOC (1989)  
 BASE MAP FROM USGS 7.5 MIN TOPOGRAPHIC QUADRANGLE MAPS, SAUK CITY, SAUK PRairie AND BARABOO, WISCONSIN



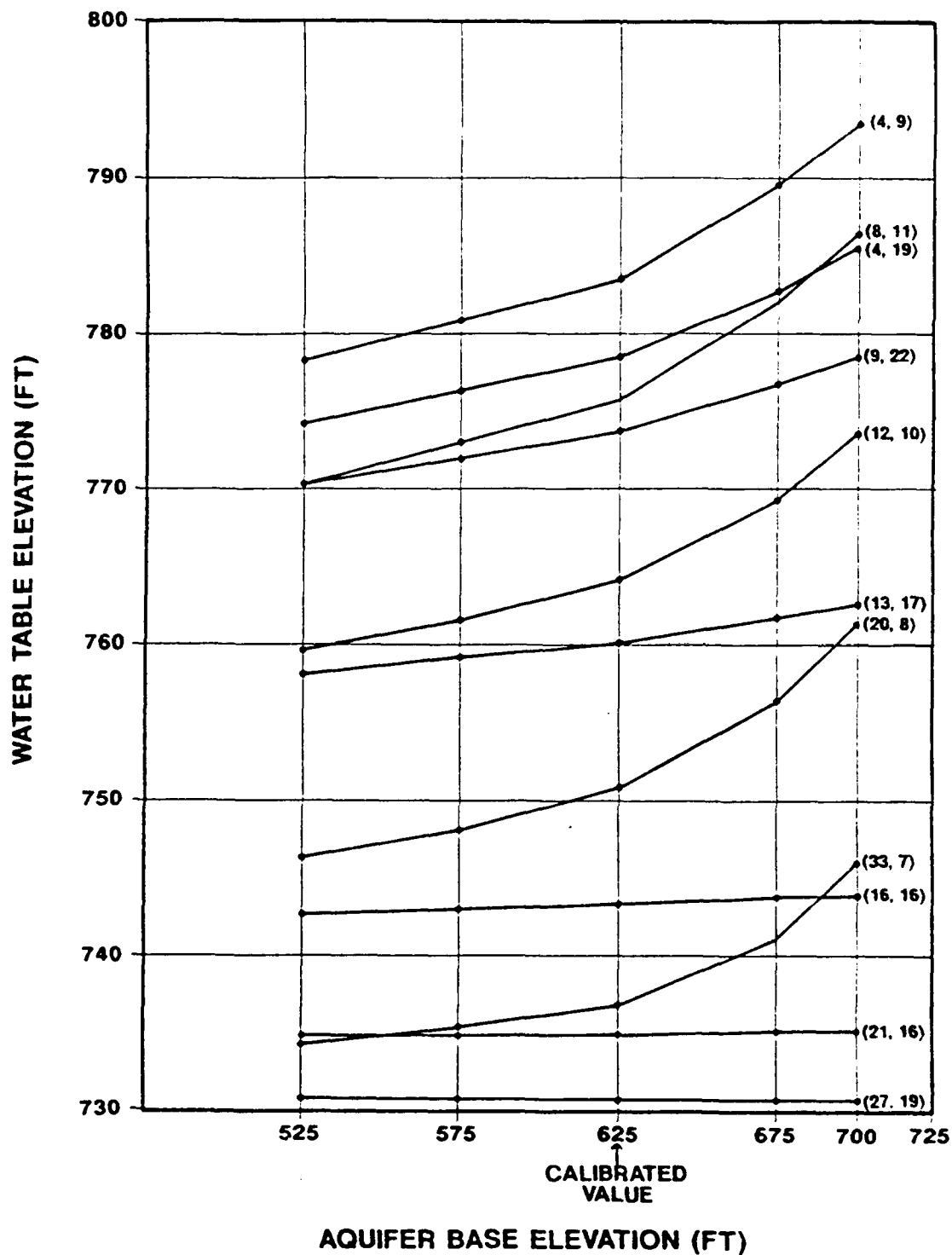
**FIGURE J.2-3**  
**BAAP WATER TABLE CONTOUR PLAN**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**  
 ABB Environmental Services, Inc



**FIGURE J.2-4**  
**REGIONAL WATER TABLE CONTOUR PLAN**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**  
 ABB Environmental Services, Inc.



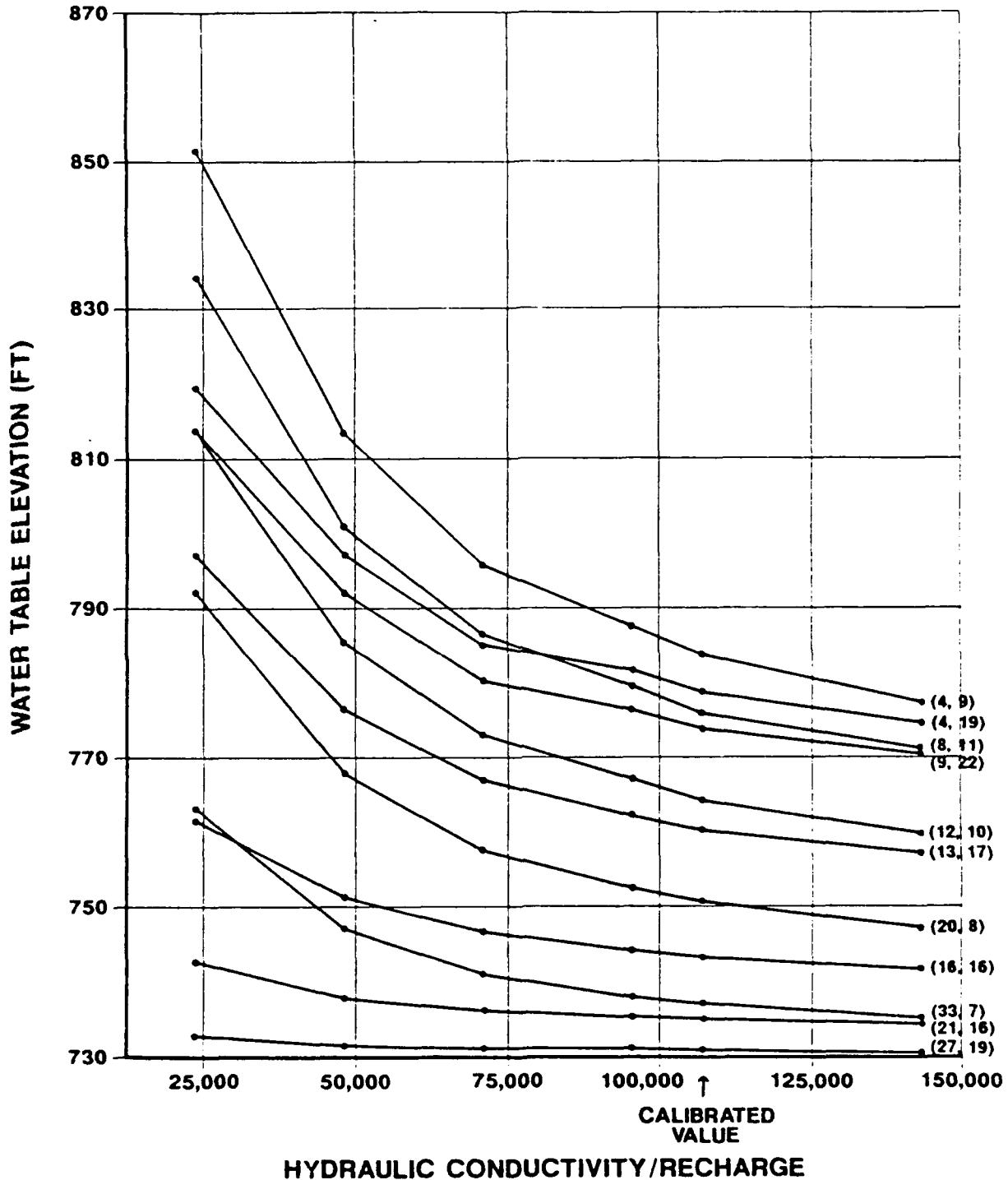
**FIGURE J.2-5**  
**SENSITIVITY ANALYSIS CELLS:**  
**GROUNDWATER FLOW MODEL**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**  
 ABB Environmental Services, Inc.



**NOTE:**

(4, 9) INDICATES MODEL CELL EVALUATED FOR SENSITIVITY ANALYSIS. THE CELLS ARE LOCATED IN FIGURE J.2-5.

**FIGURE J.2-6**  
**SENSITIVITY ANALYSIS -**  
**AQUIFER BASE ELEVATION**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

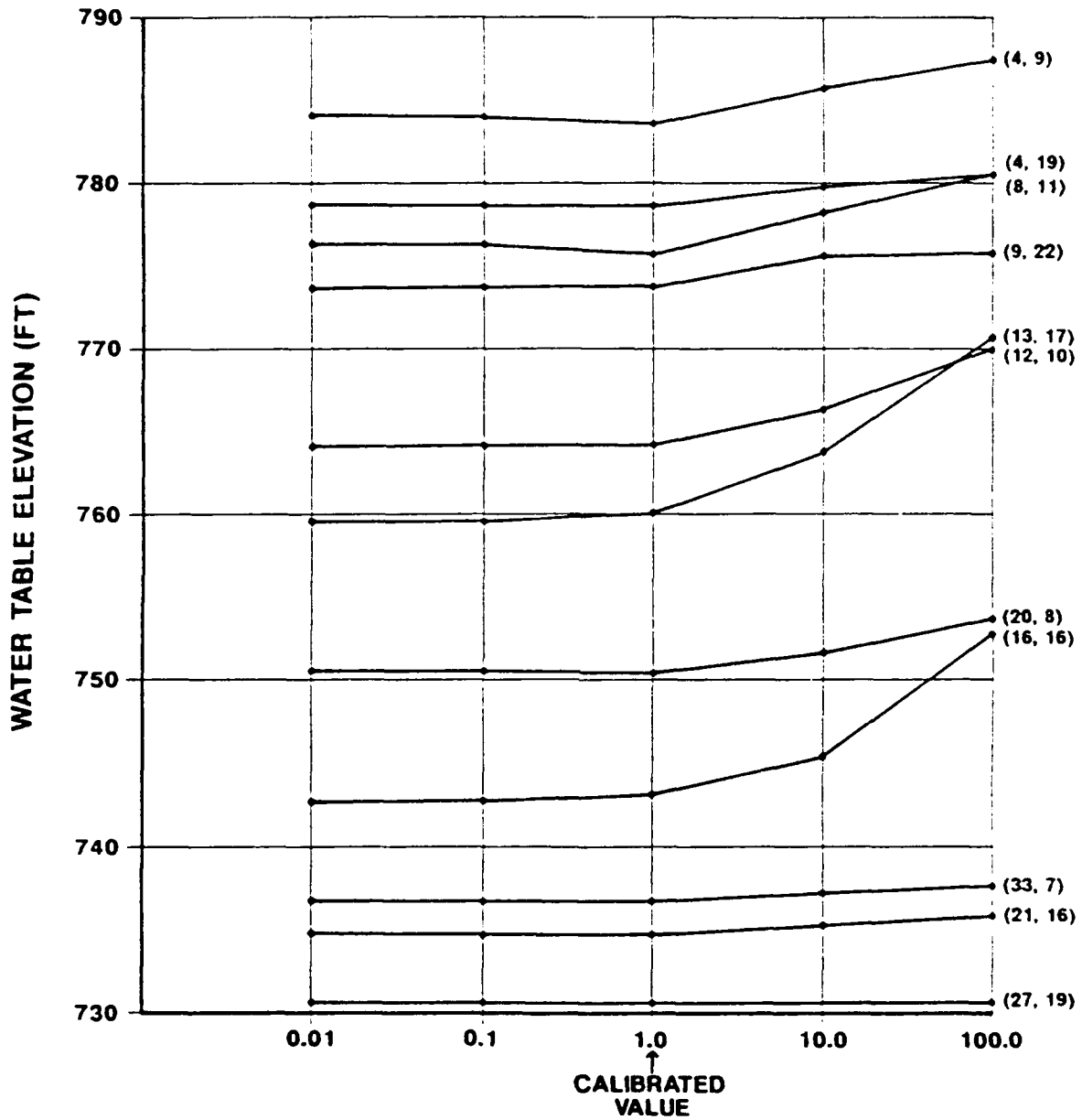


**NOTES:**

1. (4, 9) INDICATES MODEL CELL EVALUATED FOR SENSITIVITY ANALYSIS. THE CELLS ARE LOCATED IN FIGURE J.2-5.
2. DISCUSSION OF HYDRAULIC CONDUCTIVITY/RECHARGE RATIO INCLUDED IN SUBSECTION J.2-7.

**FIGURE J.2-7**  
**SENSITIVITY ANALYSIS -**  
**HYDRAULIC CONDUCTIVITY/RECHARGE**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

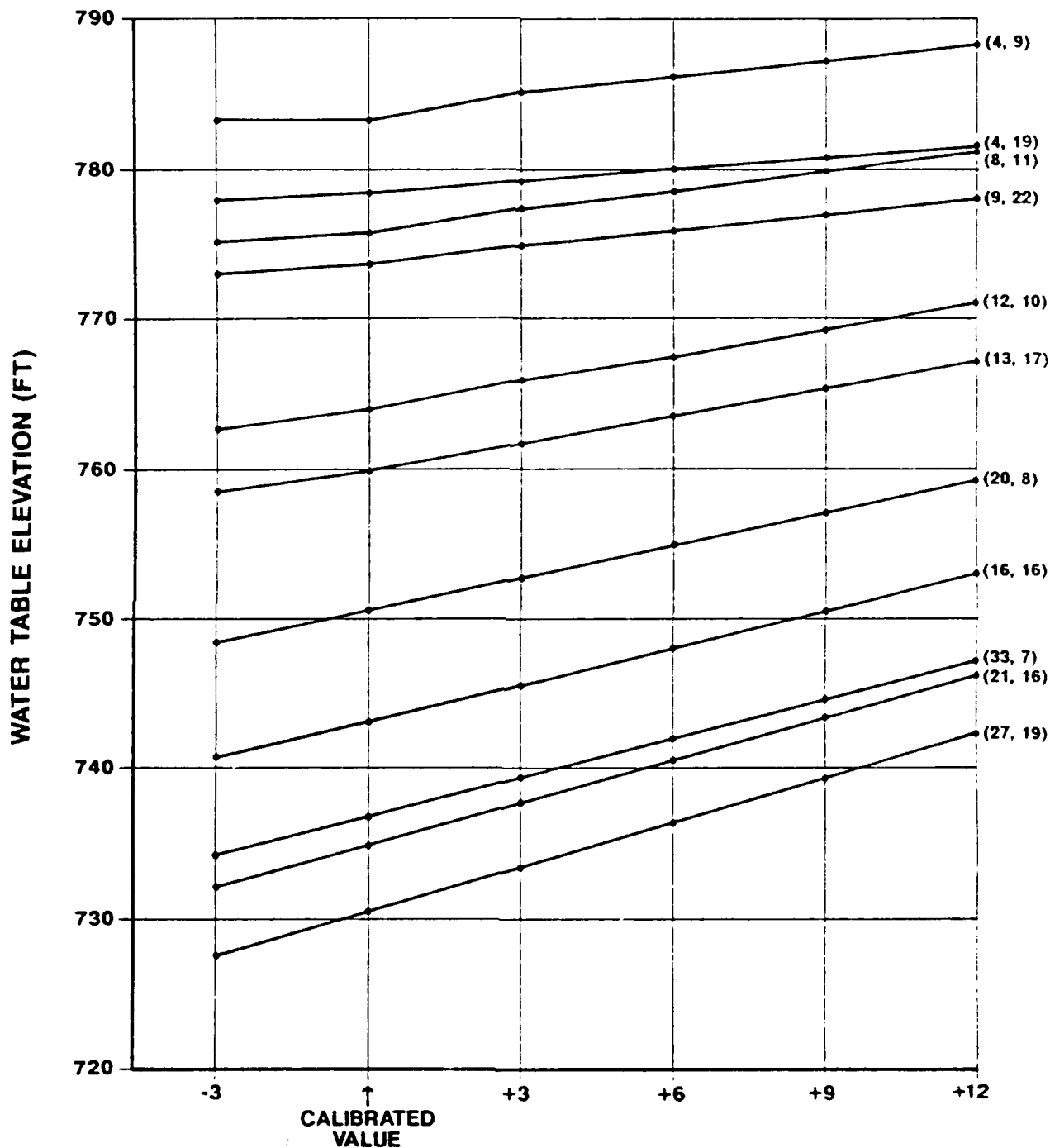
ABB Environmental Services, Inc.



VARIATION IN STREAMBED CONDUCTANCE  
BY ORDER OF MAGNITUDE

NOTE: (4, 9) INDICATES MODEL CELL EVALUATED FOR SENSITIVITY ANALYSIS. THE CELLS ARE LOCATED IN FIGURE J.2-5.

FIGURE J.2-8  
SENSITIVITY ANALYSIS -  
STREAMBED CONDUCTANCE  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT  
ABB Environmental Services, Inc.



**NOTE:**

(4, 9) INDICATES MODEL CELL EVALUATED FOR SENSITIVITY ANALYSIS. THE CELLS ARE LOCATED IN FIGURE J.2-5.

**CONSTANT HEAD VARIATION FROM CALIBRATED VALUES (FT)**

**FIGURE J.2-9  
SENSITIVITY ANALYSIS -  
CONSTANT HEAD VARIATION  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT**

AB3 Environmental Services, Inc.



**BAAP Regional Groundwater Flow Model**

**MODFLOW Input Files**



.0000E+00	.0000E+00	795.5	794.7	.0000E+00	.0000E+00	781.0	778.2	776.9	776.3
776.0	775.7	775.5	775.3	775.2	775.1	775.0	775.0	775.0	775.0
775.0	775.1	775.2	775.4						
.0000E+00	.0000E+00	.0000E+00	795.5	.0000E+00	.0000E+00	.0000E+00	774.2	773.9	773.7
773.5	773.4	773.3	773.2	773.1	773.1	773.1	773.2	773.3	773.5
773.6	773.9	774.3	775.0						
.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	770.6	770.7	770.7
770.6	770.6	770.6	770.6	770.6	770.7	770.8	771.0	771.3	771.6
771.9	772.3	772.9	.0000E+00						
.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	765.4	766.9	767.3	767.5
767.5	767.5	767.5	767.5	767.6	767.7	767.9	768.3	768.8	769.3
769.9	770.8	771.9	.0000E+00						
.0000E+00	.0000E+00	.0000E+00	.0000E+00	764.1	762.5	763.3	763.9	764.2	764.2
764.1	764.0	763.9	763.9	763.9	764.1	764.5	765.0	765.8	766.7
767.6	769.1	.0000E+00	.0000E+00						
.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	760.7	760.9	761.1	761.1	760.7
760.5	760.2	759.8	759.5	759.4	759.6	760.1	761.0	762.2	763.8
764.7	.0000E+00	.0000E+00	.0000E+00						
.0000E+00	.0000E+00	.0000E+00	.0000E+00	757.5	758.3	758.5	758.4	757.9	757.2
756.6	756.0	755.2	754.5	753.9	753.6	753.7	754.5	756.2	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
.0000E+00	.0000E+00	.0000E+00	.0000E+00	756.4	756.7	756.7	756.4	755.6	754.6
753.8	752.8	751.6	750.3	749.0	747.6	746.3	745.9	.0000E+00	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
.0000E+00	.0000E+00	.0000E+00	.0000E+00	755.7	755.8	755.7	755.2	754.1	752.9
751.9	750.7	749.2	747.5	745.6	743.2	740.6	740.0	.0000E+00	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
.0000E+00	.0000E+00	.0000E+00	754.3	755.0	754.9	754.6	754.0	752.7	751.3
750.1	748.7	747.0	745.0	742.5	738.9	733.0	733.0	.0000E+00	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
.0000E+00	754.6	754.1	754.0	754.3	754.1	753.6	752.8	751.4	749.8
748.5	747.0	745.1	742.9	740.4	737.0	733.0	.0000E+00	.0000E+00	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
.0000E+00	.0000E+00	.0000E+00	.0000E+00	753.6	753.3	752.7	751.7	750.1	748.4
747.1	745.5	743.6	741.4	739.0	735.9	732.5	.0000E+00	.0000E+00	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
754.7	754.1	753.6	753.2	752.9	752.5	751.7	750.6	748.9	747.2
745.8	744.2	742.3	740.3	738.0	735.3	732.5	.0000E+00	.0000E+00	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
754.6	753.9	753.2	752.7	752.3	751.7	750.8	749.5	747.8	746.1
744.7	743.1	741.3	739.4	737.3	734.9	732.0	732.0	.0000E+00	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
754.3	753.6	752.8	752.2	751.6	750.9	749.9	748.5	746.7	745.0
743.7	742.2	740.5	738.7	736.9	734.9	732.9	731.5	.0000E+00	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
754.0	753.2	752.3	751.6	750.9	750.0	748.9	747.5	745.7	744.0
742.8	741.3	739.8	738.2	736.6	734.9	733.1	731.5	731.5	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
753.7	752.7	751.8	751.0	750.2	749.2	748.0	746.5	744.7	743.1
741.9	740.6	739.1	737.7	736.2	734.7	733.2	731.9	731.0	731.0
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
753.3	752.3	751.2	750.3	749.4	748.3	747.1	745.6	743.8	742.2
741.0	739.8	738.5	737.2	735.8	734.4	733.1	731.8	730.5	730.5
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
752.9	751.8	750.6	749.6	748.6	747.4	746.1	744.5	742.8	741.2
740.1	739.0	737.8	736.6	735.3	734.1	732.8	731.7	730.9	730.5
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
752.5	751.3	750.0	748.9	747.7	746.4	745.1	743.5	741.8	740.3
739.2	738.1	737.0	735.9	734.7	733.6	732.4	731.4	730.7	730.0
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
752.2	750.8	749.4	748.1	746.7	745.4	744.0	742.4	740.7	739.3
738.3	737.2	736.2	735.1	734.0	732.9	731.9	731.0	730.3	730.0
.0000E+00	.0000E+00	.0000E+00	.0000E+00						
751.9	750.5	748.8	747.2	745.7	744.3	742.9	741.3	739.6	738.2
737.2	736.2	735.2	734.2	733.2	732.2	731.2	730.3	729.5	729.5
.0000E+00	.0000E+00	.0000E+00	.0000E+00						



1 35

1

0	.100E+01						
11	.100E+01(7G11.4)			12			
2000.	2000.	2000.	2000.	2000.	2000.	2000.	2000.
2000.	2000.	2000.	1000.	1000.	1000.	1000.	1000.
1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.
2000.	2000.	2000.					
11	.100E+01(7G11.4)			12			
2000.	2000.	2000.	2000.	2000.	2000.	2000.	2000.
2000.	2000.	2000.	2000.	2000.	2000.	2000.	2000.
1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.
1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.
1000.	1000.	1000.	1000.	2000.	2000.	2000.	2000.
2000.	2000.						
0	.150E+03						
11	.100E+01(7G11.4)			12			
.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	775.0
775.0	775.0	775.0	775.0	775.0	775.0	775.0	775.0
775.0	775.0	775.0	775.0	775.0	775.0	775.0	775.0
775.0	700.0	650.0					
.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	775.0
750.0	750.0	750.0	775.0	775.0	750.0	775.0	775.0
775.0	775.0	750.0	700.0	700.0	700.0	675.0	
550.0	625.0	600.0					
.0000E+00	775.0	775.0	750.0	775.0	750.0	700.0	
700.0	700.0	700.0	700.0	700.0	700.0	700.0	
675.0	675.0	675.0	650.0	650.0	625.0	625.0	
625.0	600.0	550.0					
.0000E+00	.0000E+00	750.0	750.0	725.0	700.0	675.0	
675.0	650.0	650.0	650.0	650.0	650.0	650.0	
650.0	650.0	650.0	650.0	650.0	625.0	625.0	
625.0	600.0	550.0					
.0000E+00	750.0	750.0	750.0	725.0	700.0	675.0	
650.0	650.0	650.0	650.0	650.0	650.0	650.0	
650.0	625.0	625.0	625.0	625.0	625.0	625.0	
625.0	600.0	550.0					
.0000E+00	.0000E+00	.0000E+00	750.0	750.0	725.0	700.0	
650.0	650.0	625.0	625.0	625.0	625.0	625.0	
625.0	625.0	625.0	625.0	625.0	625.0	625.0	
625.0	600.0	575.0					
.0000E+00	.0000E+00	750.0	750.0	.0000E+00	.0000E+00	725.0	
700.0	650.0	625.0	625.0	625.0	625.0	625.0	
625.0	625.0	625.0	625.0	625.0	625.0	625.0	
625.0	600.0	575.0					
.0000E+00	.0000E+00	.0000E+00	750.0	.0000E+00	700.0	.0000E+00	
675.0	650.0	625.0	625.0	625.0	625.0	625.0	
625.0	625.0	625.0	625.0	625.0	625.0	625.0	
625.0	600.0	550.0					
.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	
675.0	650.0	625.0	625.0	625.0	625.0	625.0	
625.0	625.0	625.0	625.0	625.0	625.0	625.0	
600.0	575.0	.0000E+00					
.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	675.0	
650.0	625.0	625.0	625.0	625.0	625.0	625.0	
625.0	625.0	625.0	625.0	625.0	625.0	600.0	
575.0	550.0	.0000E+00					
.0000E+00	.0000E+00	.0000E+00	.0000E+00	750.0	700.0	675.0	
650.0	625.0	625.0	625.0	625.0	625.0	625.0	
625.0	625.0	600.0	600.0	600.0	600.0	575.0	
550.0	.0000E+00	.0000E+00					
.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	575.0	650.0	





4	42			
4				
1	2	24	.774E+03	.867E+04
1	3	24	.774E+03	.120E+05
1	4	24	.774E+03	.153E+05
1	5	24	.774E+03	.153E+05



50 5  
.00000 .10000E-01 11.0000E+00 1

1 -1  
0 0  
0 14E-04

24	45			
24				
1	6	24	774.0000 381.70000	730.0000
1	7	24	774.0000 142.90000	730.0000
1	8	24	774.0000 428.60000	730.0000
1	9	23	774.0000 234.40000	730.0000
1	9	24	774.0000 251.40000	730.0000
1	10	23	774.0000 401.90000	730.0000
1	11	22	774.0000 294.60000	730.0000
1	11	23	774.0000 142.90000	730.0000
1	12	19	774.0000 142.90000	730.0000
1	12	21	774.0000 98.23000	730.0000
1	12	22	774.0000 428.60000	730.0000
1	13	18	774.0000 178.90000	730.0000
1	13	19	774.0000 259.00000	730.0000
1	13	20	774.0000 260.00000	730.0000
1	13	21	774.0000 169.70000	730.0000
1	14	17	774.0000 112.50000	730.0000
1	14	18	774.0000 254.00000	730.0000
1	14	19	774.0000 128.60000	730.0000
1	15	16	774.0000 35.71000	730.0000
1	15	17	774.0000 124.30000	730.0000
1	15	18	774.0000 115.10000	730.0000
1	16	16	774.0000 31.74000	730.0000
1	16	17	774.0000 117.20000	730.0000
1	16	18	774.0000 51.59000	730.0000

3	0	30	0
3	3	1	1
1	0	1	0

Appendix J.3  
Propellant Burning Ground Groundwater Flow Model

### J.3 PROPELLANT BURNING GROUND GROUNDWATER FLOW MODEL

Two three-dimensional groundwater flow models were constructed to assist in the interpretation of the overburden aquifer in the vicinity of the Propellant Burning Ground and Interim Remedial Measure (IRM) extraction wells. These models are intended to serve as a tool in furthering the conceptual understanding of the geologic and hydrogeologic conditions in this vicinity. This includes an assessment of the influence the existing IRM extraction wells are having on the aquifer. In addition, the models will be used to evaluate various alternatives proposed in the Feasibility Study (FS).

The models consisted of a generalized "box" model and a more site-specific Propellant Burning Ground model. The box model was developed to assess the importance of high permeability gravel zones on the vertical flow within the aquifer, particularly flow from the gravel zones to underlying sandy zones. This assisted in the delineation of layers within the site-specific model. The site-specific Propellant Burning Ground model is simulated with steady state conditions founded on the results of the BAAP regional model (see Appendix J.2). However, the site-specific model has a much finer grid spacing in the vicinity of the Propellant Burning Ground, including assessment of IRM extraction well performance.

The discussion of the models includes a presentation of the conceptual geological framework as well as a summary of the hydraulic data collected and utilized for the model (see Section 6.3 for a detailed discussion of geologic and hydrogeologic findings). This discussion is followed by descriptions of the preprocessor and model code, assignments of model parameters and boundary conditions, results of model calibration, mass balance, and sensitivity analysis for each model.

#### J.3.1 Conceptual Setting

The modeling effort was based on a conceptual framework of the Propellant Burning Ground geologic/hydrogeologic system, that consists of an unconfined overburden aquifer under steady-state conditions. The overburden aquifer occurs in a thick sequence of highly permeable, unconsolidated sands and gravels, overlying sandstone bedrock units with a lower permeability. Within the Propellant Burning Ground Model gravel layers are assigned hydraulic conductivity values approximately 25 percent greater than the sand layers. The lower permeability of the bedrock unit likely limits groundwater flow between the bedrock and unconsolidated flow systems. Given this condition and the lack of available information about the bedrock flow system, the model does not include the bedrock units as part of the

## APPENDIX J

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active aquifer. The lateral boundary conditions for the models were taken from the BAAP regional groundwater model (Appendix J.2). Boundary conditions for the models consist of no-flow boundaries to the east and west representing parallel flow lines and constant head boundaries on the northern and southern boundaries representing transects of equal head. The majority of the flow into the model is expected to enter and leave the model through the constant head boundaries, as the models represent a slice taken out of the larger model.

### J.3.2 Data Collection

The majority of the aquifer data used in the two models came from the BAAP regional groundwater model (See Appendix J.2). Data from borings installed in the Propellant Burning Ground area were used to establish the elevations of the model layers (see Section 6.3). Data from the October 25, 1989 water level elevations and the December, 1991 pumping test (Appendix J.1) data were used to calibrate the site-specific Propellant Burning Ground model.

### J.3.3 Software and Hardware

Selection of the groundwater model numerical code was based on several considerations: The code had to have the ability to include as boundary or initial conditions all significant hydrogeologic influences, be well accepted and documented, and be readily available for use by others (in the public domain). The USGS Modular Three-Dimensional Finite Difference Groundwater Flow Model Code (MODFLOW) (MacDonald and Harbaugh, 1988) was selected for the models. MODFLOW was selected for its ability to simulate three dimensional aquifer conditions, its flexibility in input parameter assignment and acceptability in the modeling community. The MODFLOW model output is a matrix of hydraulic heads at specified locations accompanied by a reiteration of the model input parameters and a mass balance.

The MODFLOW model code is installed as Geraghty and Miller's version for 386-based PC implementation (Geraghty and Miller, 1990). This version of the code also includes new modules for the Preconditioned Conjugate Gradient solver package, the Re-wetting package, and the Stream Routing package.

The governing equation for the model is based on the application of Darcy's Law and conservation of mass to the Laplace Equation and assumes that the axes are aligned along the principal flow directions or principal axis of anisotropy:

$$\frac{\delta}{\delta x}(K_{xx}b\frac{\delta h}{\delta x}) + \frac{\delta}{\delta y}(K_{yy}b\frac{\delta h}{\delta y}) + \frac{\delta}{\delta z}(K_{zz}b\frac{\delta h}{\delta z}) = S\frac{\delta h}{\delta t} + W(xyt)$$

where:

- $K_{xx}$ ,  $K_{yy}$  and  $K_{zz}$  are values of hydraulic conductivity along the x, y and z axes
- b is the aquifer thickness
- h is the potentiometric head
- W is a volumetric flux representing sources and/or sinks
- S is the specific storage of the porous material
- t is time

This equation is solved at each cell of the model by using finite difference techniques. The finite difference technique solves the governing equation by approximating the solution to the partial differential equation through a system of algebraic equations which are applied to each individual cell. The solution to the system of equations is achieved by first assuming a head value for each cell, the initial head array, and then using matrix mathematics to revise the solution based on the various stresses applied to the model. The previous and present solutions are then checked against each other, and the process reiterated until a minimal preselected difference, the closure criterion, is attained between all cells for the two final solutions. In this modeling effort, a closure criterion of 0.01 feet was used.

The USGS particle tracking program MODPATH (Pollock, 1989) was selected for simulating groundwater flow lines. Flow lines are simulated by computing particle pathlines. MODPATH works with MODFLOW output to calculate changes in particle positions over time. The version of MODPATH used is Geraghty and Miller's version for 386-based PC implementation.

Output head matrices were contoured with Golden Software's SURFER (Golden Software, 1989) package during and simulation runs. Manual smoothing and interpretation was necessary for representation of conditions along the edges of the model due to limitations of the software to deal appropriately with some boundary conditions.

MODELCAD (developed by Geraghty and Miller, Inc. 1989), a graphical interface groundwater model preprocessor was used to assemble the data sets for MODFLOW. This



## APPENDIX J

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preprocessor enables the user to visually assemble the model data sets, easily developing the model grid, boundary conditions, layers and parameters.

### J.3.4 Box Model

A simple box model was created to assess the hydrogeologic interaction of the interbedded sand and gravel layers during the pumping of an extraction well. This effort was undertaken to establish the degree to which groundwater flow is dominated by the gravel layers. A single pumping well, screened in the top sand and gravel layers, was located in the middle of the box. The model was run as a steady state model, with particle tracking to determine layer interaction.

#### J.3.4.1 Model Parameters

The box model consisted of seven layers, dividing the overburden aquifer above the bedrock into five sand layers (layers 1, 3, 4, 5, and 6) and two gravel layers (layers 2 and 7) (see Figure J.3-1). All figures are located at the end of this Appendix Section. Layer thicknesses were based upon borings made in the area of the Propellant Burning Ground IRM extraction wells. Grid spacing was 50 feet for both rows and columns. The final model consisted of 45 rows and 50 columns (2,250 cells). Figure J.3-2 shows the grid and the assignment of boundary conditions.

The box model boundaries consisted of constant head cells of 772 feet along the northern boundary and 769 feet along the southern boundary, with no-flow boundaries along the eastern and western boundaries. The no-flow boundaries represent flow lines. As discussed in the regional model (Appendix J.2), it is assumed that bedrock flow system does not interact with the overburden aquifer.

Horizontal hydraulic conductivity for the sand layers was set at the same value as the regional model (150 ft/day). Horizontal hydraulic conductivity for the gravel layers was set at 1,500 ft/day. Although this is higher than most estimates of the hydraulic conductivity for the gravel layers, this value was selected as a "worst case" conservative scenario where the gravel layer may dominate flow. Vertical hydraulic conductivity was set at 3 times less than the horizontal hydraulic conductivity to also provide a conservative model.

The value for the recharge rate remained the same as in the regional model (6 in./yr). For the MODPATH particle tracking, the aquifer porosity is required, its value was set at .30, an average value for sand and gravel. The pumping rate for the well was set at 100 gpm (the rated capacity of the existing IRM extraction wells). This rate was split proportionally

between layers 1 and 2. Particles simulating the contaminant plume were input into the north edge of the model for 600 feet on either side of the well to simulate groundwater flow toward the pumping well.

#### J.3.4.2 Calibration

This model was constructed as a conceptual/schematic model. The heads were derived from the BAAP regional model for the area near the IRM extraction wells. No calibration was conducted as the model was intended only to evaluate the influence of vertical flow between the sand and gravel layers and to assess the need for vertical layering in the site-specific model.

#### J.3.4.3 Mass Balance

Table J.3-1 presents the mass balance output for the box model. As this table indicates, there was a good correlation between input and output water volumes (0.06 percent discrepancy). As the model was calibrated to steady state conditions, there was no gain (input) or loss (output) in storage. Water supplied to the model was dominated by flow from the constant head cells in the north end of the model (96%) with the remainder being supplied by recharge (4%). Water left the model primarily through constant head cells on the southern boundary of the model (89%) with the remainder being pumped out of the IRM extraction wells (11%).

#### J.3.4.4 Sensitivity Analysis

The box model underwent a sensitivity analysis in which the values of model parameters were independently varied to determine the sensitivity of each parameter within the model. This analysis was conducted by varying horizontal and vertical hydraulic conductivity, recharge, constant head elevation, and bottom elevation in independent steady state simulations. Figure J.3-3 shows the locations of the cells analyzed in the sensitivity analysis. This included cells:

17,10,1	-	Layer 1, near the northern boundary.
22,13,1	-	Layer 1, north of the extraction well.
23,16,1	-	Layer 1, south of the extraction well.
23,20,1	-	Layer 1, south of the extraction well.
32,27,1	-	Layer 1, south of the extraction well.
4,38,1	-	Layer 1, near the southern boundary.
43,37,1	-	Layer 1, near the southern boundary.

## APPENDIX J

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23,16,2	-	Layer 2, south of the extraction well.
23,20,2	-	Layer 2, south of the extraction well.
23,16,5	-	Layer 5, south of the extraction well.
23,20,5	-	Layer 5, south of the extraction well.

Model response to variation in each of the five parameters was analyzed by comparing the water level change in each cell as each parameter was varied above and below its calibrated value. The results of the IRM Extraction model sensitivity analysis are presented in Figures J.3-4 through J.3-8.

Figure J.3-4 illustrates the sensitivity of the model to horizontal hydraulic conductivity. The model did not show a great response to reasonable changes in sand layer hydraulic conductivity over the range that was analyzed. Only the cells close to the pumping well (23,16 and 23,20, layers one and two) show an increase in head as sand horizontal hydraulic conductivity is increased.

Figure J.3-5 illustrates the sensitivity of the model predicted to variation in the vertical hydraulic conductivity. The evaluated model cells did not show a great response to the changes in vertical hydraulic conductivity over the range analyzed. Again, only the cells close to the pumping well (23,16 and 23,20, layers one and two) show an increase in head as vertical hydraulic conductivity is increased. One cell (23,16 in the fifth layer) decreased when the horizontal/vertical hydraulic conductivity reached 1:1. This reflects the pumping well zone-of-influence reaching the fifth layer with this lower horizontal/vertical hydraulic conductivity ratio.

Figure J.3-6 illustrates the sensitivity of the model to variations in the constant head boundary conditions. Heads along southern constant head boundary were varied. The response of the model was an increase along the head as the constant head boundaries were increased for all evaluated cells. Cells closer to the constant head boundaries being varied correlated closely with the amount that the constant head cells were varied. Cells further from the varied constant head boundaries had less of a change in value.

Figure J.3-7 illustrates the sensitivity of the model to the recharge. The evaluated model cells did not show a great response to the changes in recharge over the range that was analyzed. Only one cell, close to the pumping well (23,20 in the first and second layers), shows an increase in head as recharge is increased from 3 inches/year to 5 inches/year. Figure J.3-8 illustrates the sensitivity of the model to the thickness of the upper gravel layer (layer 2). The evaluated cells did not show a great response to the changes in gravel layer thickness over the range that was analyzed. Only the cells close to the pumping well (23,16

and 23,20, in the first and second layers) show an increase in head as the gravel layer thickness is increased.

The box model was most sensitive to changes in constant heads over the range of parameters analyzed. The model demonstrated only moderate sensitivity in cells close to the pumping well to variation in the other model parameters.

#### J.3.4.5 Results

Even with a conservative maximum horizontal hydraulic conductivity of 1,500 ft/day in the gravel layers (layers 2 and 7), the pumping well influenced groundwater flow in layer 7, immediately above the bedrock. This indicates that the gravel layers do not dominate flow in the overburden aquifer. Figures J.3-9 through J.3-15 show the simulated potentiometric surfaces and particle flowlines in the different layers. In the top two layers, capture zone radius is approximately 100 feet (layer 1) and 50 feet (layer 2). As expected, there was a limited ability for the pumping well to capture particles in the deeper layers.

#### J.3.5 Site-Specific Propellant Burning Ground Model

The site-specific Propellant Burning Ground model was developed to provide a more detailed model of this area and to evaluate the effectiveness of the IRM extraction wells. This model is intended to serve as a tool in evaluating different remedial measures for the Propellant Burning Ground during the FS.

##### J.3.5.1 Model Parameters

The Propellant Burning Ground model covers the Propellant Burning Ground and an area 2,000 feet to the south of the southern BAAP Boundary and 1,000 feet to the east and west. The study area was approximately 10,125 feet long by 7,250 feet wide (See Figure J.3-16). Groundwater flow is generally southward across the site with an approximately 13-foot drop in head across the site (gradient equals 0.0013 ft/ft).

The Propellant Burning Ground model consisted of five layers, representing the three sand layers (layers 1, 3 and 4) and two gravel layers (layers 2 and 5) of the overburden aquifer (See Figure J.3-17). The lower sand unit was split into two model layers to assess the movement of particles in this area. Gravel layer and bedrock elevations were based upon borings made during the installation of the Propellant Burning Ground monitoring wells and borings.

## APPENDIX J

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The initial Propellant Burning Ground model boundaries consisted of constant head cells of 776 feet along the northern boundary and 763 feet at the southern boundary, with no-flow boundaries along the eastern and western boundaries. The boundary types and constant head elevations were derived from the results of the calibrated BAAP regional model (Appendix J.2).

Initial horizontal hydraulic conductivity was assigned the same value as the box model (150 ft/day for the sand layers and 1,500 ft/day for the gravel layers). Vertical conductivity for each layer was also set at 10 times less than the horizontal conductivity.

The recharge rate was set at 6 in/yr, using the same value as the regional model. Porosity, required for the particle tracking program, was set at .30 for all model layers. The pumping rate for the extraction wells was evaluated at 60 and 200 gpm, split proportionally between layers 1 and 2. These rates reflect existing conditions (60 gpm) and the pumping rate utilized for the BCW-3 aquifer test (200 gpm). Particles were started in columns 7 to 50 in the first row of each layer (3,100 feet wide). The width of the simulated plume was chosen to approximate the Propellant Burning Ground contaminant plume at a location in the central portion of the site.

Once basic site parameters were quantified, a base map was set up in MODELCAD. A grid with spacing of 250 feet for both rows and columns, was superimposed on the map. To increase model definition in the area of the IRM extraction wells, the grid density was increased by fining the spacing down to 50 feet. South of the IRM extraction wells the row spacing was set to 125 feet. Figure J.3-16 shows the location of the grid in relation to the IRM extraction wells and also details the boundary conditions for the model. The final grid consisted of 80 rows and 60 columns (4,800 cells).

### J.3.5.2 Model Calibration

The Propellant Burning Ground model was first calibrated by approximating the conditions from the regional model and adjusting them to provide a reasonable fit to the known average conditions.

The Propellant Burning Ground model was then calibrated by comparing the head output by the model to values collected from monitoring wells on October 25, 1989. This date was chosen because it was used to calibrate the regional model. The comparison is summarized in Table J.3-2. Figure J.3-18 shows the location of the cells used for the calibration. The average difference for cells used in the calibration is approximately .5 foot.

As a further calibration, the model was run with parameters to simulate the aquifer test (See Appendix J.1). IRM extraction well BCW-3 was pumped at 200 GPM with BCW-1 and BCW-2 turned off. The horizontal hydraulic conductivity of the overburden sand and gravel layers were set at 195 and 240 ft/day, respectively.

Because of the change in the horizontal hydraulic conductivity, the regional model was rerun using a hydraulic conductivity of 195 ft/day. Heads in the Propellant Burning Ground model area from the BAAP regional model initial calibration and the supplemental calibration are presented in Table J.3-3. Heads in the vicinity of the Propellant Burning Ground decreased by approximately 5 feet from the 150 ft/day initial calibrated regional model to the supplemental calibrated regional model, resulting in a better match with the October 25, 1989 water levels. This enabled an adjustment of the southern constant head cells to elevations approximately 1.5 feet lower than the initial calibrated values.

Figure J.3-19 shows a cross section of the aquifer comparing the elevation of a particle "recharging" the model at cell (1,30) in the first layer of the model (a location equivalent to the southern end of the Propellant Burning Ground). Water recharging the aquifer from this area is uncontaminated. As Figure J.3-19 indicates, the observed CCL4 plume sinks south of this area in response to accretion of uncontaminated recharge at the water table. The particle, sinking due to modeled recharge, provides a good fit to the observed sinking contaminant plume.

For the final calibration the following parameters were applied:

Horizontal Hydraulic Conductivity in sand layers: 195 ft/day  
Horizontal Hydraulic Conductivity in gravel layers: 240 ft/day  
Northern Constant Head cells: 776.0 feet  
Southern Constant Head Cells: 761.5 feet  
Horizontal\Vertical Anisotropy Ratio: 3:1  
Recharge: 6 inches/year

#### J.3.5.3 Mass Balance

Table J.3-4 presents the mass balance output for the calibrated Propellant Burning Ground model. As this table indicates, there was a good correlation between input and output water volumes (0.61 percent discrepancy). As the model was calibrated to steady state conditions, there was no gain (input) or loss (output) in storage. Water supplied to the model was dominated by flow from the constant head cells in the north end of the model (78%) with the remainder being supplied by recharge (22%). Water left the model primarily through

## APPENDIX J

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constant head cells on the southern boundary of the model (88%) with the remainder being pumped out of the IRM extraction wells (12%).

The conceptual model for this model indicates that the majority of the flow entering and leaving the model would come from the constant head cells at the boundaries. Darcy's Law was used to calculate a rough flow across the boundaries, using an average thickness (layer thickness varied in response to bedrock elevation) and hydraulic gradient for each model layer. The total calculated amount of flow across the boundaries is 348,080.3 ft<sup>3</sup>. This is 89% of the input flux the model calculated for the constant head cells and 98% of the output flux for the southern constant head cells.

### J.3.5.4 Sensitivity Analysis

Following calibration the Propellant Burning Ground model underwent a sensitivity analysis in which the values of model parameters were independently varied to determine the sensitivity of each parameter within the model. This analysis was conducted by varying vertical and horizontal hydraulic conductivity, recharge, constant head elevation, and gravel layer thickness in independent steady state simulations.

Ten observation cells spaced throughout the active model were specified for comparison of the sensitivity evaluations. Figure J.3-18 presents the cell locations. The ten cells are:

4,7,1	-	Layer 1, near the northern boundary.
11,54,1	-	Layer 1, near the northern boundary.
28,21,1	-	Layer 1, south of the extraction wells.
34,14,1	-	Layer 1, near extraction well BCW-1.
48,41,1	-	Layer 1, south of the extraction wells.
74,5,1	-	Layer 1, near the southern boundary.
76,55,1	-	Layer 1, near the southern boundary.
34,14,3	-	Layer 3, near extraction well BCW-1.
34,14,5	-	Layer 5, near extraction well BCW-1.
75,12,5	-	Layer 5, near the southern boundary.

Model response to variation in each of the five parameters was analyzed by comparing the water level change in each cell as each parameter was varied above and below its calibrated value. The results of the Propellant Burning Ground model sensitivity analysis are presented in Figures J.3-20 through J.3-24.

Figure J.3-20 illustrates the sensitivity of the model to variations in the horizontal hydraulic conductivity of the sand layers. The evaluated model cells varied slightly as the sand hydraulic conductivity was varied. The cells in the center of the model show a greater variation than the cells close to the constant head boundaries.

Figure J.3-21 illustrates the sensitivity of the model to variations in the horizontal/vertical hydraulic conductivity ratio. The model shows a slight decrease in heads with an increase in vertical hydraulic conductivity.

Figure J.3-22 illustrates the sensitivity of the model to variations in constant head. The response of the model was linear at all evaluated cells. Cells close to the constant head boundaries being varied, correlated closely with the amount that the constant head boundaries were varied. Cells further from the varied constant head boundaries had less variation in water level elevation.

Figure J.3-23 illustrates the sensitivity of the model to the recharge. The evaluated cells increased slightly as the recharge was increased. The greatest changes occurred in the center of the model, away from the influence of the constant head boundaries. The range of recharge was not large enough to cause the groundwater flow to change direction.

Figure J.3-24 illustrates the sensitivity of the model to the thickness of the upper gravel layer. Borings made in the area around the Propellant Burning Ground show gravel layer thicknesses up to 30 feet thick. The evaluated model cells did not show a great response to the changes in gravel layer thickness over the range that was analyzed.

Because of the effect of recharge on particle depth, a sensitivity analysis was performed comparing the change in particle depth as recharge is varied. Figure J.3-25 shows the sensitivity of a particle starting at cell (1,30,1) to variation in recharge. Variations of 2 inches per year of recharge produce a 10 foot difference in depth over a 10,000 foot particle track.

The Propellant Burning Ground model was most sensitive to changes in constant head boundaries over the range of parameters analyzed. The model demonstrated only moderate sensitivity to variation in the other model parameters.

#### J.3.5.5 Results

The calibrated Propellant Burning Ground model was run with the IRM extraction wells set to simulate the December 1991 aquifer test. Figures J.3-26 through J.3-30 illustrate the

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## APPENDIX J

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output heads for the five aquifer layers of the Propellant Burning Ground model with one extraction well (BCW-3) pumping at 200 gpm, one well (Source Control Well 1) pumping at 60 gpm and two wells (BCW-1 and BCW-2) not pumping. A comparison of the drawdowns measured during the actual aquifer test and from the model are presented in Table J.3-5. The results indicate good correlation. At 75 feet from BCW-3, the model was within 0.01 feet of the average observed water level. At 250 feet from BCW-3, the model simulated the well drawdown to approximately 0.1 foot.

Figures J.3-31 through J.3-35 illustrate the potentiometric surface contours and particle tracking for the Propellant Burning Ground model with the four IRM extraction wells operating at 60 gpm. The wells are capturing particles in a 100 foot radius around the extraction wells in the top layer (layer 1). Vertically the model indicates particle capture predominately in the top two layers (60 feet below the water table) with limited particle capture in the third layer (60 to 150 feet below the water table) and only disturbance of the particle paths in the bottom two layers. In the bottom two layers, the extraction wells only changed the flow lines of particles, drawing them closer together.

### J.3.6 Summary and Conclusions

Two three-dimensional, numerical groundwater flow models simulating the conditions in the Propellant Burning Ground have been developed and calibrated. The modeled heads, flow directions and gradients match well with water level elevations measured in the field. Mass balance within the model as well as that measured between the model and field conditions correlate well.

The sensitivity analyses performed on the models indicate that the model is most sensitive to changes in the constant head boundary elevations. Changing the other parameters caused slight variations in head, primarily at the interior cells.

The box model is useful in understanding the interaction between the sand and gravel layers of the aquifer. The gravel layers do not appear to dominate groundwater flow, even using a gravel hydraulic conductivity one order of magnitude higher than the sand layer. The box model also served as the basis for establishing layers in the Propellant Burning Ground model.

The Propellant Burning Ground model indicates that the current IRM extraction wells are partially effective at capturing the Propellant Burning Ground groundwater contaminant plume. Based on particle tracking at the current pumping rate, the model shows the IRM extraction wells to have a horizontal capture zone of approximately 100 feet in the top sand

layer (layer 1) and a horizontal capture zone of approximately 50 feet in the top gravel layer (layer 2). In the second sand layer(layer 3) the capture zone is approximately 25 feet. In layers 4 and 5, no particles are captured. However, the flow line particles are drawn closer together. This site-specific modeling effort indicates that contaminated groundwater is flowing past the IRM extraction wells.

**J.3**  
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- Golden Software, 1989. *Documentation of SURFER*, Golden, CO.
- McDonald, M.G. and A.W. Harbaugh, 1988. *A Modular Three-dimensional Finite-difference Groundwater Flow Model*, U.S. Geological Survey, National Center, Reston, VA.
- Pollock, D.W., 1989. *Documentation of Computer Programs to Compute and Display Pathlines Using Results from the U.S. Geological Survey Three-dimensional Finite-difference Groundwater Flow Model*, U.S. Geological Survey, National Center, Reston, VA.

TABLE J.3-1  
 MASS BALANCE  
 BOX MODEL

REMEDIAL INVESTIGATION  
 BADGER ARMY AMMUNITION PLANT

IN (WATER ENTERING MODEL)	OUT (WATER LEAVING MODEL)
Storage = 0.0	Storage = 0.0
Constant Head Boundary = 181,580 (96%)	Constant Head Boundary = 170,050 (88.8%)
Wells = 0.0	Wells = 19,057 (11.2%)
Recharge = 7,398 (4%)	Recharge = 0.0
<b>Total In = 188,980</b>	<b>Total Out = 189,100</b>

Notes:

1. All volumes are in cubic feet
2. In/Out difference is 121.59 cubic feet. This is equivalent to a 0.06 percent difference.

TABLE J.3-2  
COMPARISON OF CALIBRATED MODEL VALUES  
TO OBSERVED WATER TABLE VALUES

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

CELL	WELL	MODEL	10/25/89	ABSOLUTE VALUE DIFFERENCE
03,45	PBM-89-09	775.3	776.4	1.10
08,45	PBN-89-10A	773.4	773.15	0.25
08,45	PBN-89-10B	773.4	773.11	0.29
08,45	PBN-89-10C	773.4	773.43	0.03
08,45	PBN-89-10D	773.4	773.19	0.21
09,33	PBM-82-01	773	773.9	0.90
11,59	S-1115	772.8	772.8	0.00
14,49	PBM-89-06	771.1	770.9	0.20
15,39	PBM-85-01A	770.6	771.61	1.01
15,39	PBN-89-01B	770.6	770.97	0.37
15,39	PBN-89-01C	770.6	770.97	0.37
15,39	PBN-89-01D	770.6	771.02	0.42
15,14	PBN-89-05	770.7	770.7	0.00
17,38	PBN-82-04	771.9	771.9	0.00
17,38	PBN-85-04A	769.8	770	0.20
17,38	PBN-89-04B	769.8	768.34	1.46
17,38	PBN-89-04C	769.8	768	1.80
18,5	S-1109	769.5	769	0.50
26,26	PBM-89-07	768.1	768.4	0.30
30,47	PBM-89-08	768.1	768.41	0.31
53,37	PBN-89-12A	766.3	766.3	0.00
53,37	PBN-89-12B	766.3	766.19	0.11
64,28	SPN-89-03A	764.4	764	0.40
64,28	SPN-89-03B	764.4	763.73	0.67
64,28	SPN-89-03C	764.4	763.66	0.74
65,5	SPN-89-01	764.2	763.7	0.50
66,45	SPN-89-04	764.1	763.4	0.70
			Average:	0.48

**Note:**

All values are in feet

TABLE J.3-3  
REGIONAL MODEL COMPARISON OF INITIAL CALIBRATION TO SUPPLEMENTAL CALIBRATION

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

MODEL CELL	INITIAL CALIBRATION (FEET MSL)	SUPPLEMENTAL CALIBRATION (FEET MSL)	DIFFERENCE (FEET)
8,9	777.4	771.6	5.80
8,10	776.8	771.1	5.70
8,11	776.4	770.9	5.50
8,12	776.1	770.7	5.40
8,13	775.9	770.6	5.30
8,14	775.7	770.5	5.20
8,15	775.5	770.5	5.00
9,9	774.3	768.8	5.50
9,10	774	768.6	5.40
9,11	773.9	768.6	5.30
9,12	773.7	768.5	5.20
9,13	773.6	768.5	5.10
9,14	773.5	768.5	5.00
9,15	773.4	768.5	4.90
10,9	771	765.8	5.20
10,10	771	765.8	5.20
10,11	770.9	765.9	5.00
10,12	770.9	765.9	5.00
10,13	770.8	766	4.80
10,14	770.8	766	4.80
10,15	770.8	766.1	4.70
11,9	767.6	762.7	4.90
11,10	767.7	762.9	4.80
11,11	767.7	763	4.70
11,12	767.7	763	4.70
11,13	767.7	763.1	4.60
11,14	767.7	763.2	4.50
11,15	767.8	763.3	4.50

TABLE J.3-3  
REGIONAL MODEL COMPARISON OF INITIAL CALIBRATION TO SUPPLEMENTAL CALIBRATION

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

MODEL CELL	INITIAL CALIBRATION (FEET MSL)	SUPPLEMENTAL CALIBRATION (FEET MSL)	DIFFERENCE (FEET)
12,9	764.4	759.8	4.60
12,10	764.4	759.8	4.60
12,11	764.3	759.9	4.40
12,12	764.2	759.8	4.40
12,13	764.1	759.8	4.30
12,14	764.1	759.9	4.20
12,15	764.1	760.0	4.10
		Average:	4.92

Note:

All values are in feet

**TABLE J.3-4  
MASS BALANCE  
SITE-SPECIFIC PROPELLANT BURNING GROUND MODEL**

**REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT**

IN (WATER ENTERING MODEL)	OUT (WATER LEAVING MODEL)
Storage = 0.0	Storage = 0.0
Constant Head Boundary = 313,090 (78%)	Constant Head Boundary = 352,700 (88.4%)
Wells = 0.0	Wells = 46,192 (11.6%)
Recharge = 88,237 (22%)	Recharge = 0.0
Total In = 401,330	Total Out = 398,890

**Notes:**

1. All volumes are in cubic feet
2. In/Out difference is 2440.7 cubic feet. This is equivalent to a 0.61 percent difference.



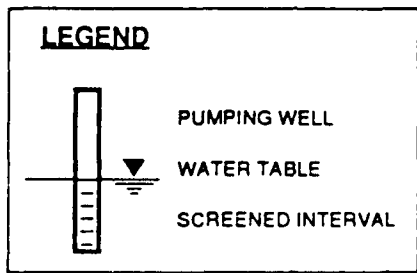
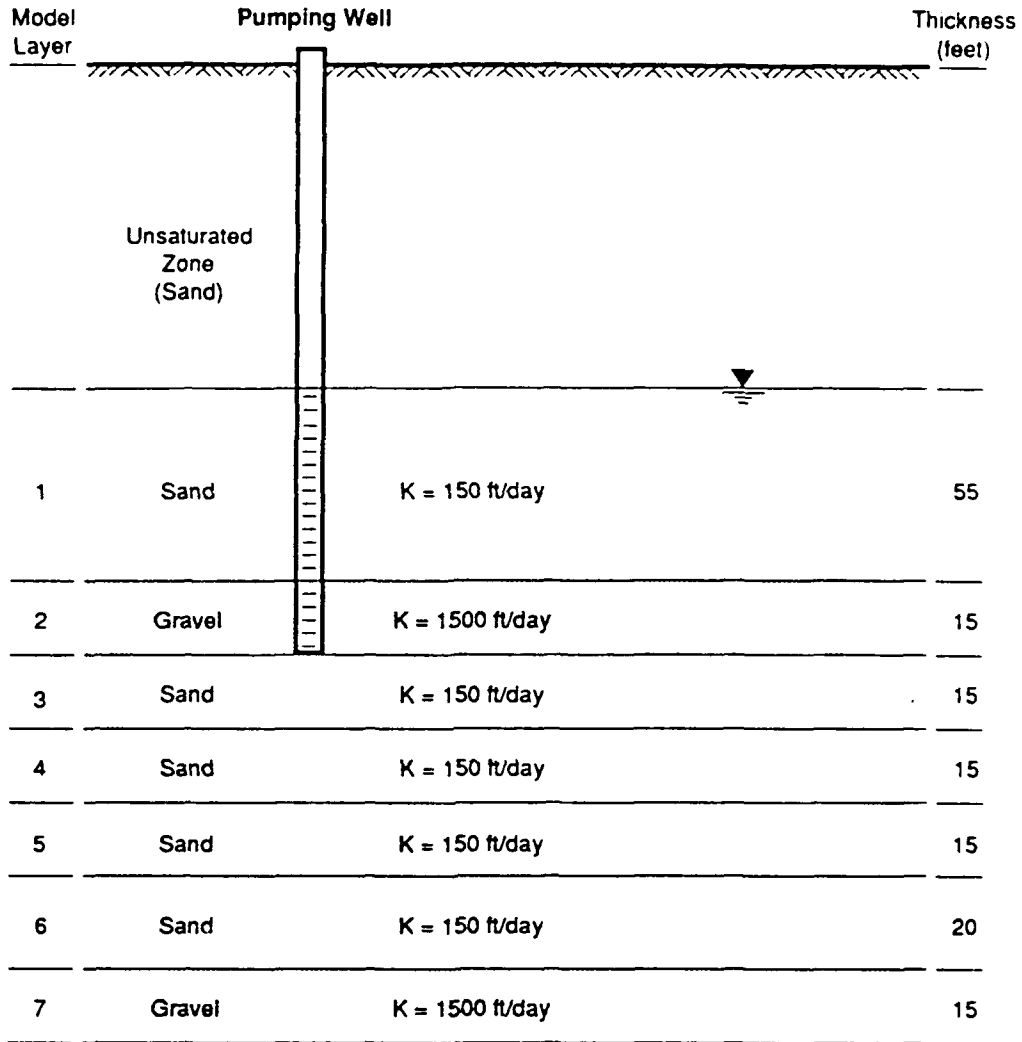
TABLE J.3-5  
COMPARISON OF MODEL CALIBRATED VALUES TO PUMPING TEST AVERAGES

REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

WELL	DISTANCE	ACTUAL DRAWDOWN	MODEL PREDICTED DRAWDOWN	DIFFERENCE
PBP-91-01	75	0.51	0.5	0.01
PBP-91-02	219	0.32	0.2	0.12
PBP-91-06	199	0.3	0.2	0.1
PBN-89-04	250	0.2	0.1	0.1

Note:

All Values are in feet



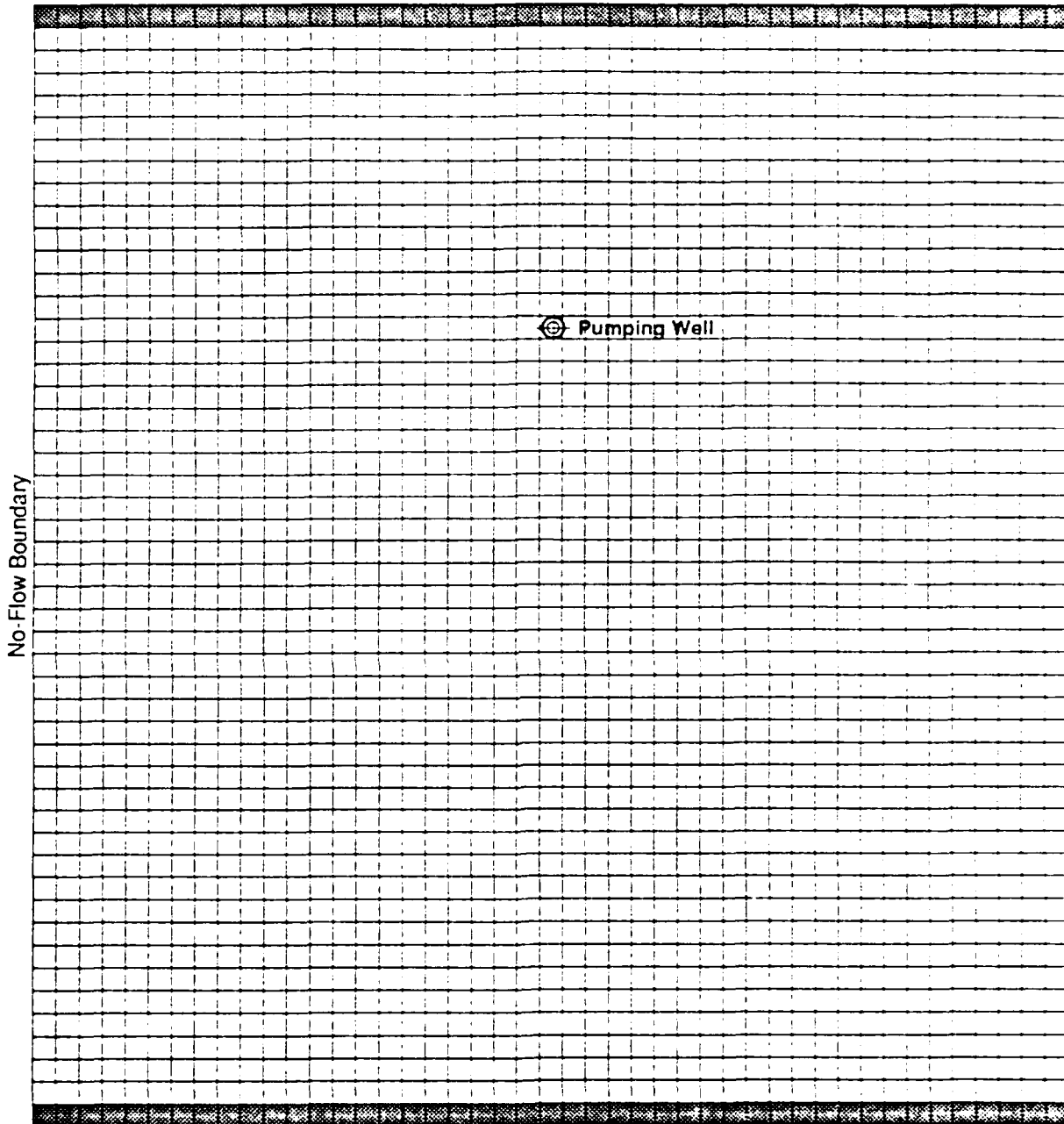
NOT TO SCALE

**FIGURE J.3-1**  
**BOX MODEL LAYERS**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc.



Constant Head Boundary = 772 FT MSL




No-Flow Boundary

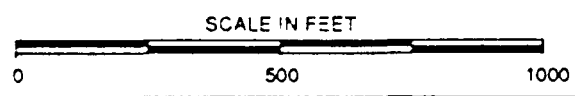
No-Flow Boundary

⊙ Pumping Well

Constant Head Boundary = 769 FT MSL

**LEGEND**

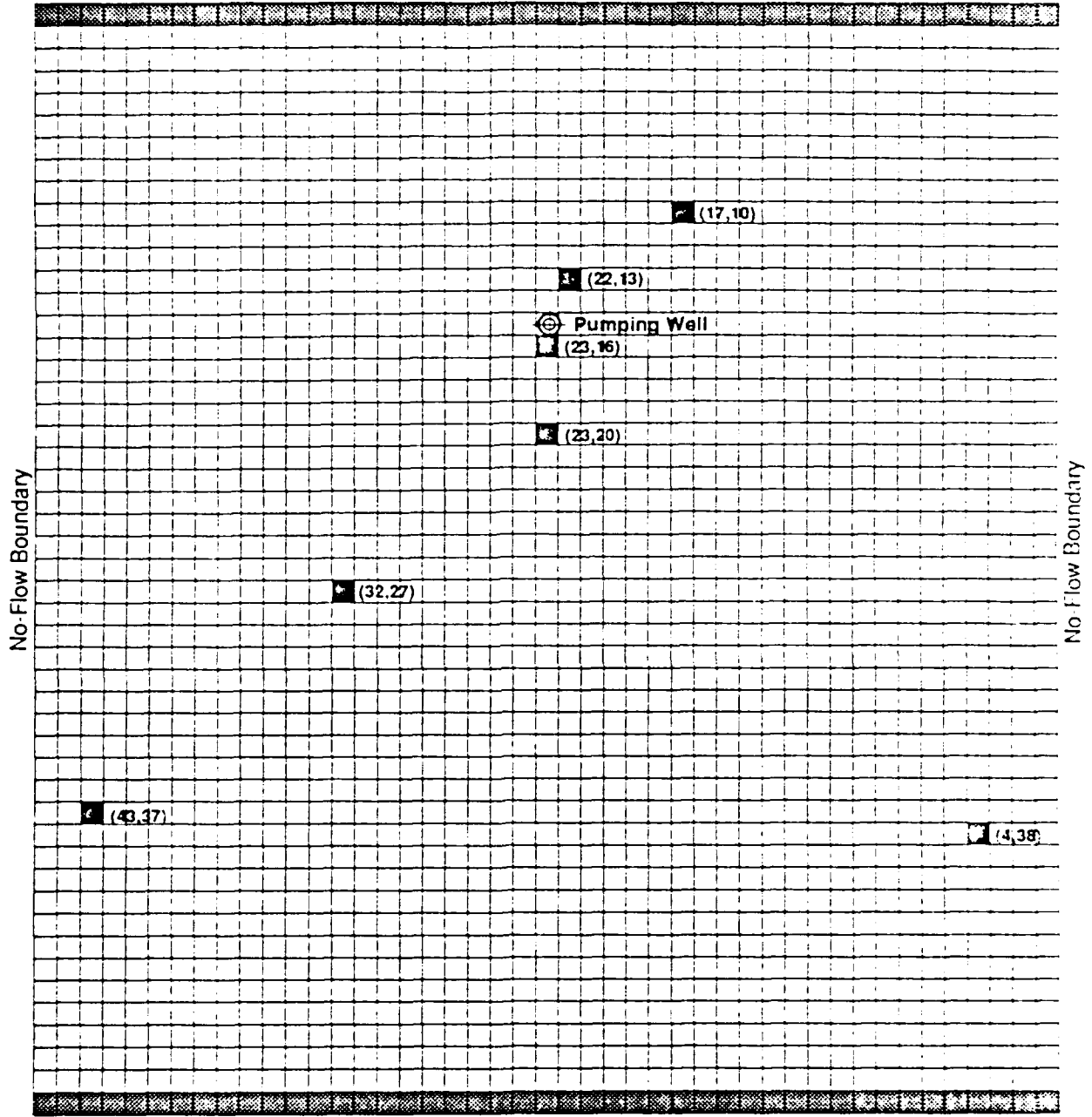
 CONSTANT HEAD CELL



**FIGURE J.3-2**  
**BOX MODEL GRID**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**  
— ABB Environmental Services, Inc. —



Constant Head Boundary = 772 FT MSL



**LEGEND**



CONSTANT HEAD CELL



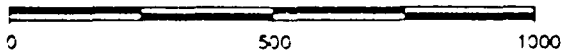
LOCATION AND DESIGNATION OF CELL EVALUATED IN SENSITIVITY ANALYSIS

COLUMN NUMBER

(43,37)

ROW NUMBER

SCALE IN FEET

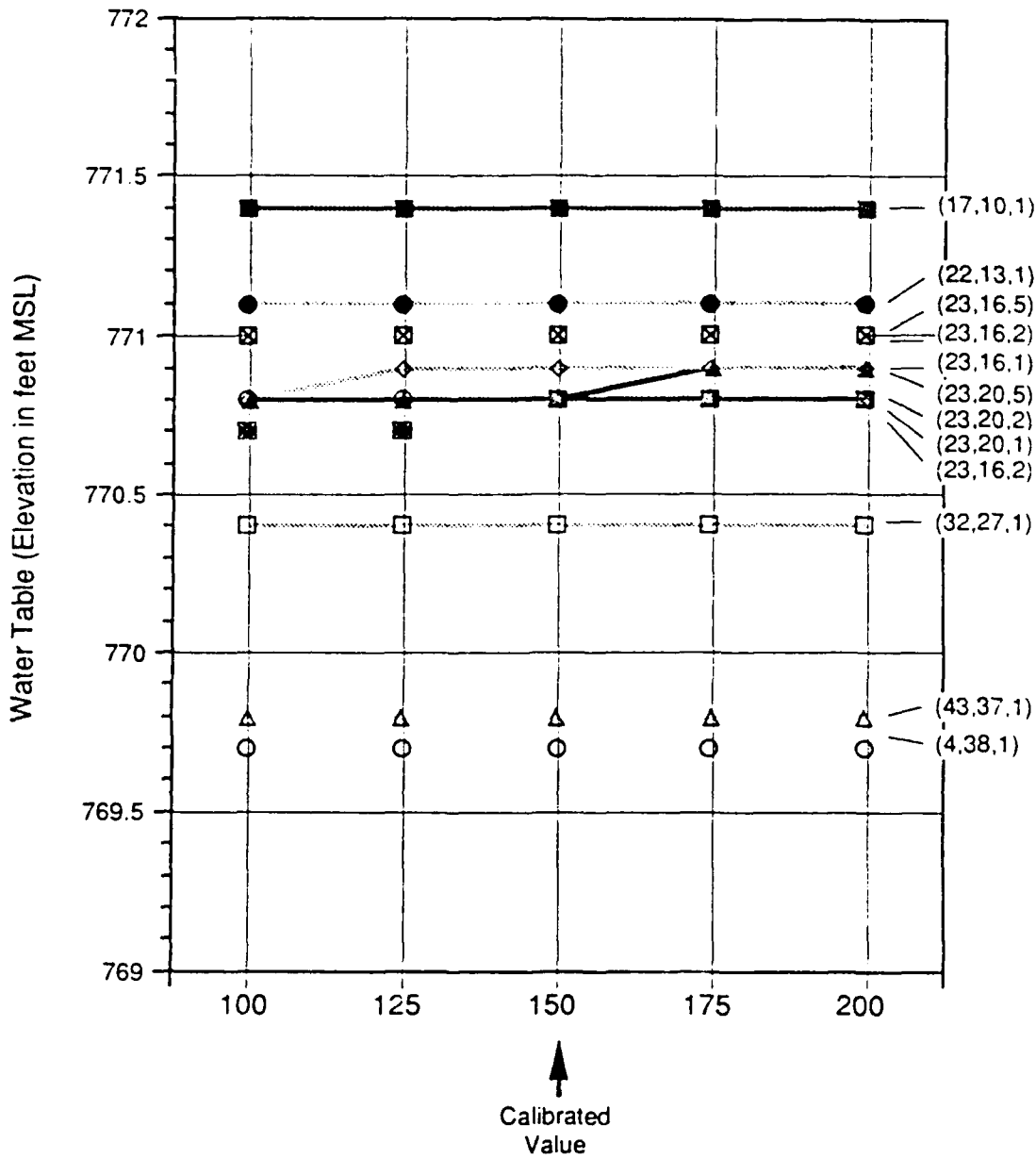


**NOTE:**

ALL CELLS EVALUATED FOR SENSITIVITY ARE IN LAYER 1 (TOP OF MODEL) EXCEPT 23-16 AND 23-20 WHERE LAYERS 2 (GRAVEL) AND 5 (SAND) WERE ALSO EVALUATED

**FIGURE J.3-3  
LOCATIONS OF CELLS USED IN  
SENSITIVITY ANALYSIS  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc.



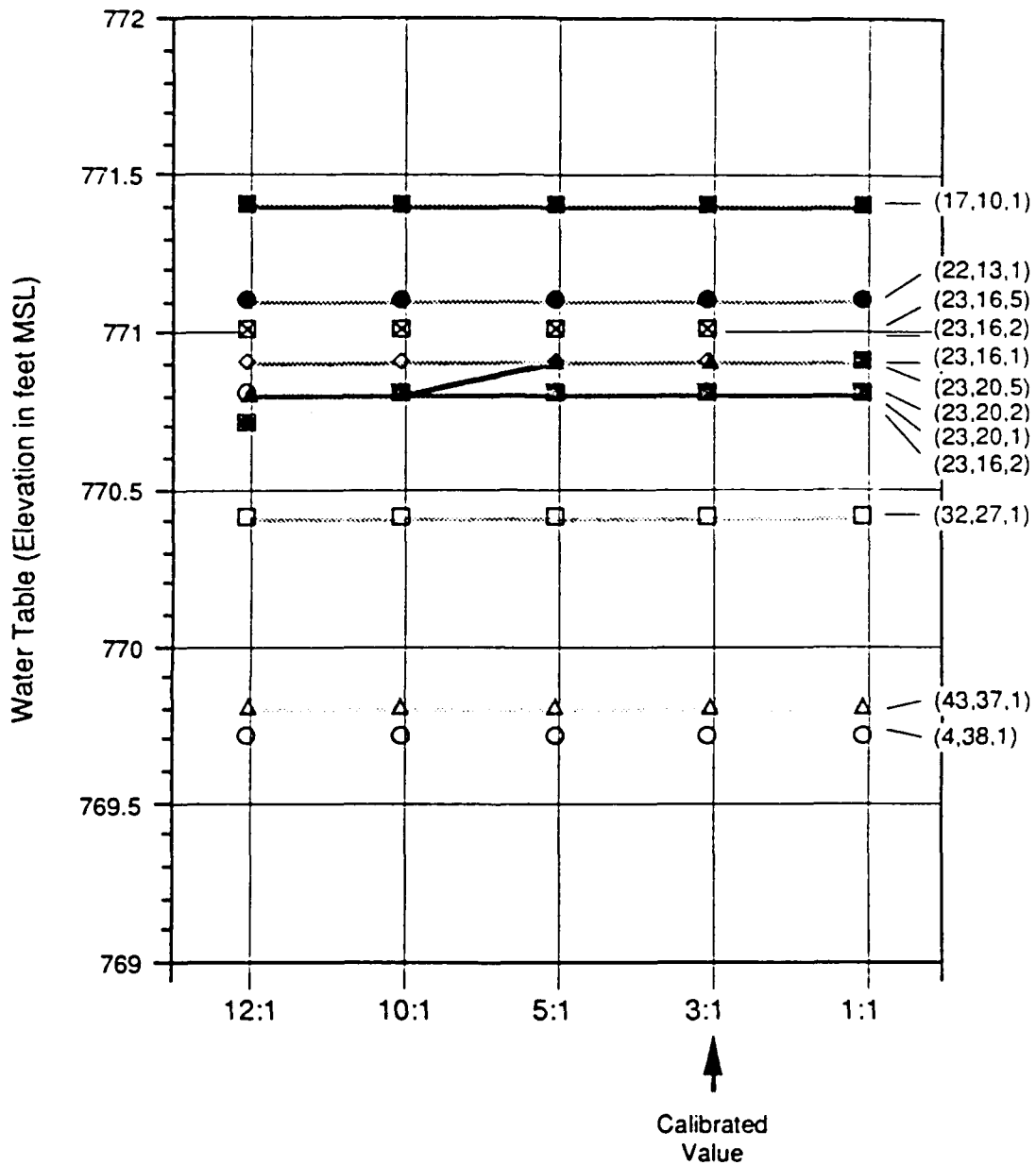
**Cell Identification**

Row Number  
 Column Number  
 Layer Number

(75,12,5)

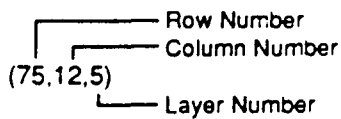
Note: See Figure J.3-3 for Cell Location

**FIGURE J.3-4**  
**HORIZONTAL K - SENSITIVITY ANALYSIS**  
**BOX MODEL**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**



Horizontal/Vertical Hydraulic Conductivity Anisotropy Ratio

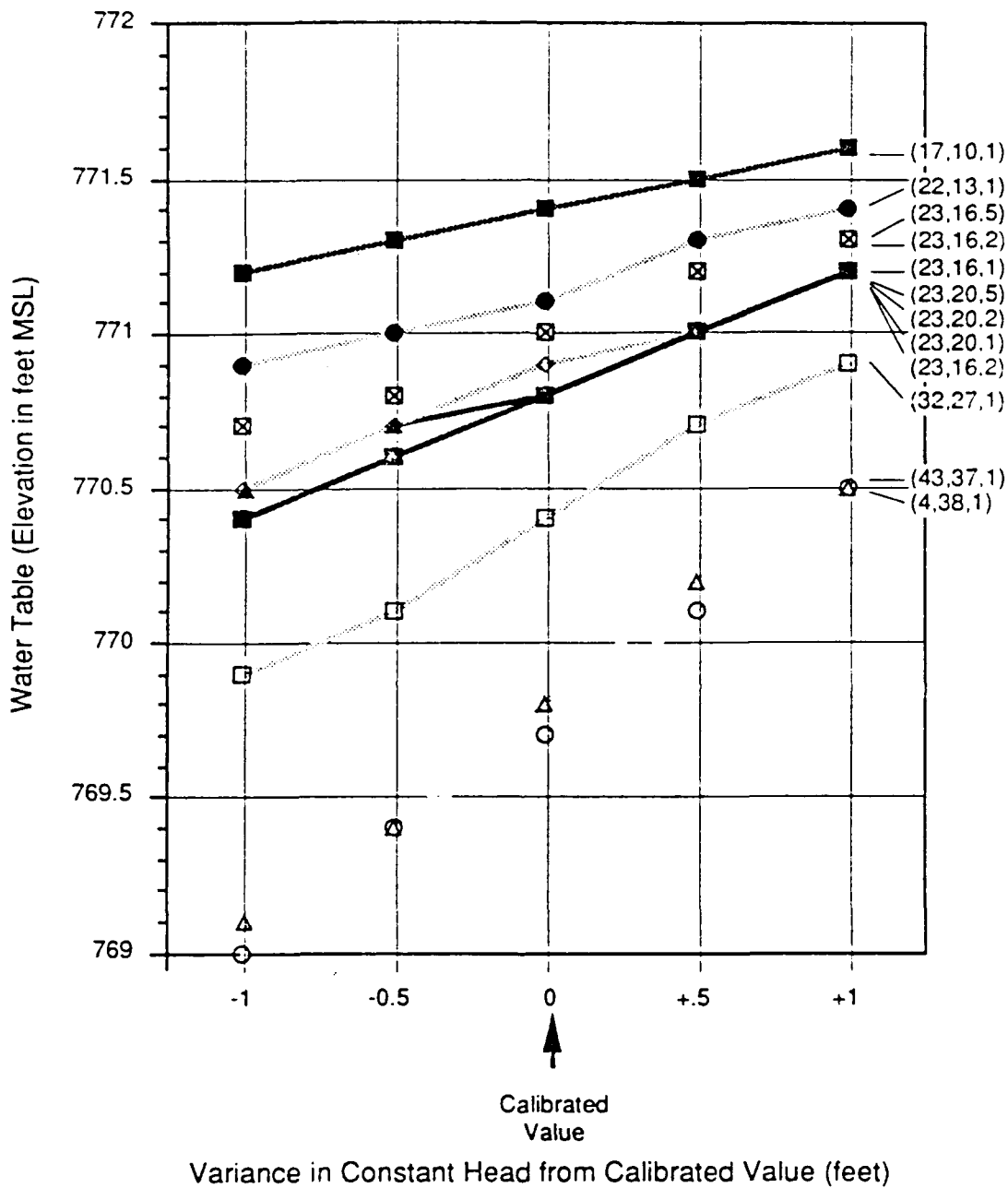
**Cell Identification**



Note: See Figure 3-3 for Cell Location

**FIGURE J.3-5  
 VERTICAL K - SENSITIVITY ANALYSIS  
 BOX MODEL  
 IRM EVALUATION  
 BADGER ARMY AMMUNITION PLANT**

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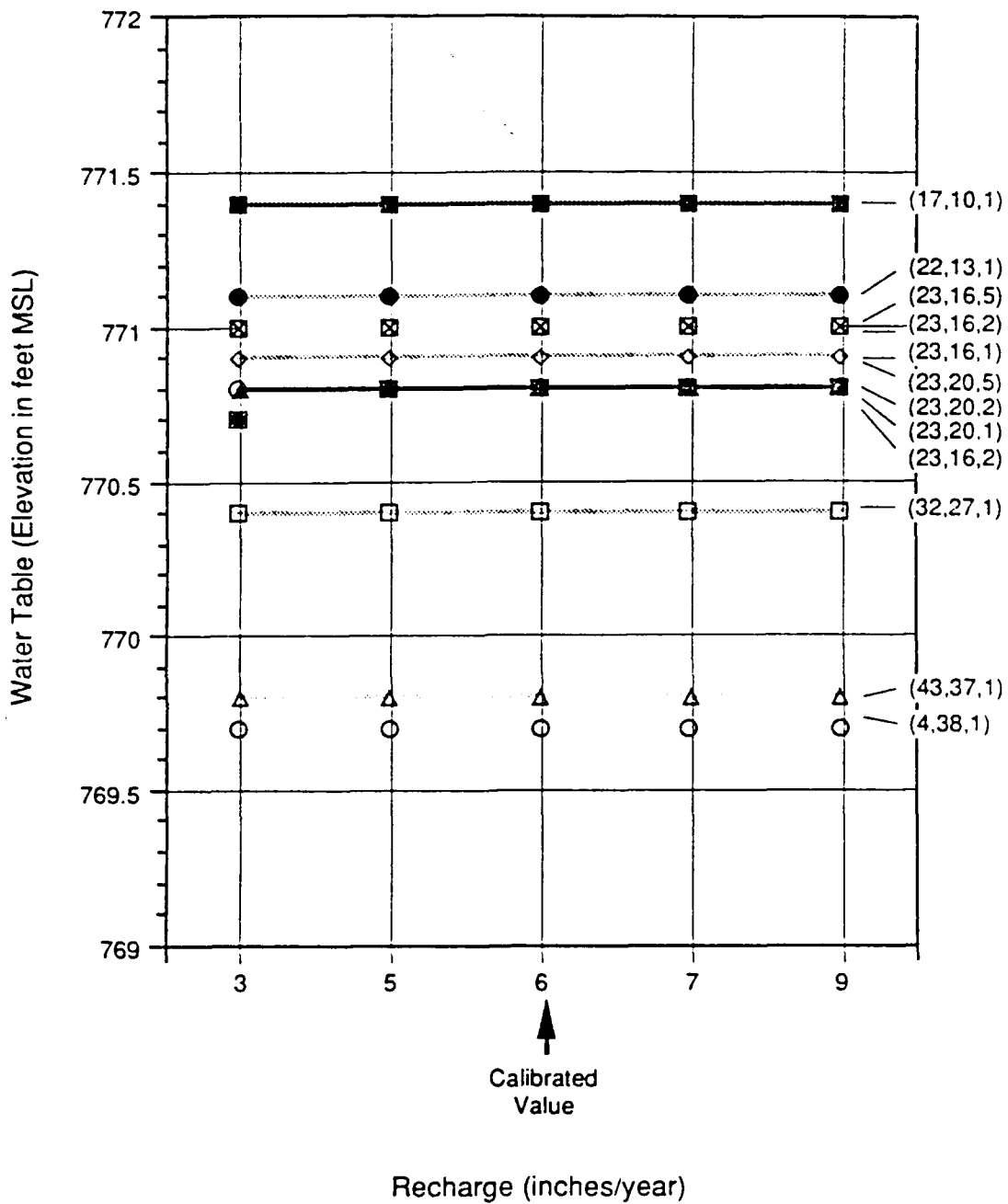
**Cell Identification**

┌── Row Number  
 └──┬── Column Number  
 (75.12.5)  
 └── Layer Number

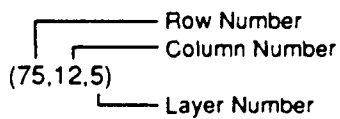
Note: See Figure J.3-3 for Cell Location

**FIGURE J.3-6**  
**CONSTANT HEAD - SENSITIVITY ANALYSIS**  
**BOX MODEL**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc.



**Cell Identification**

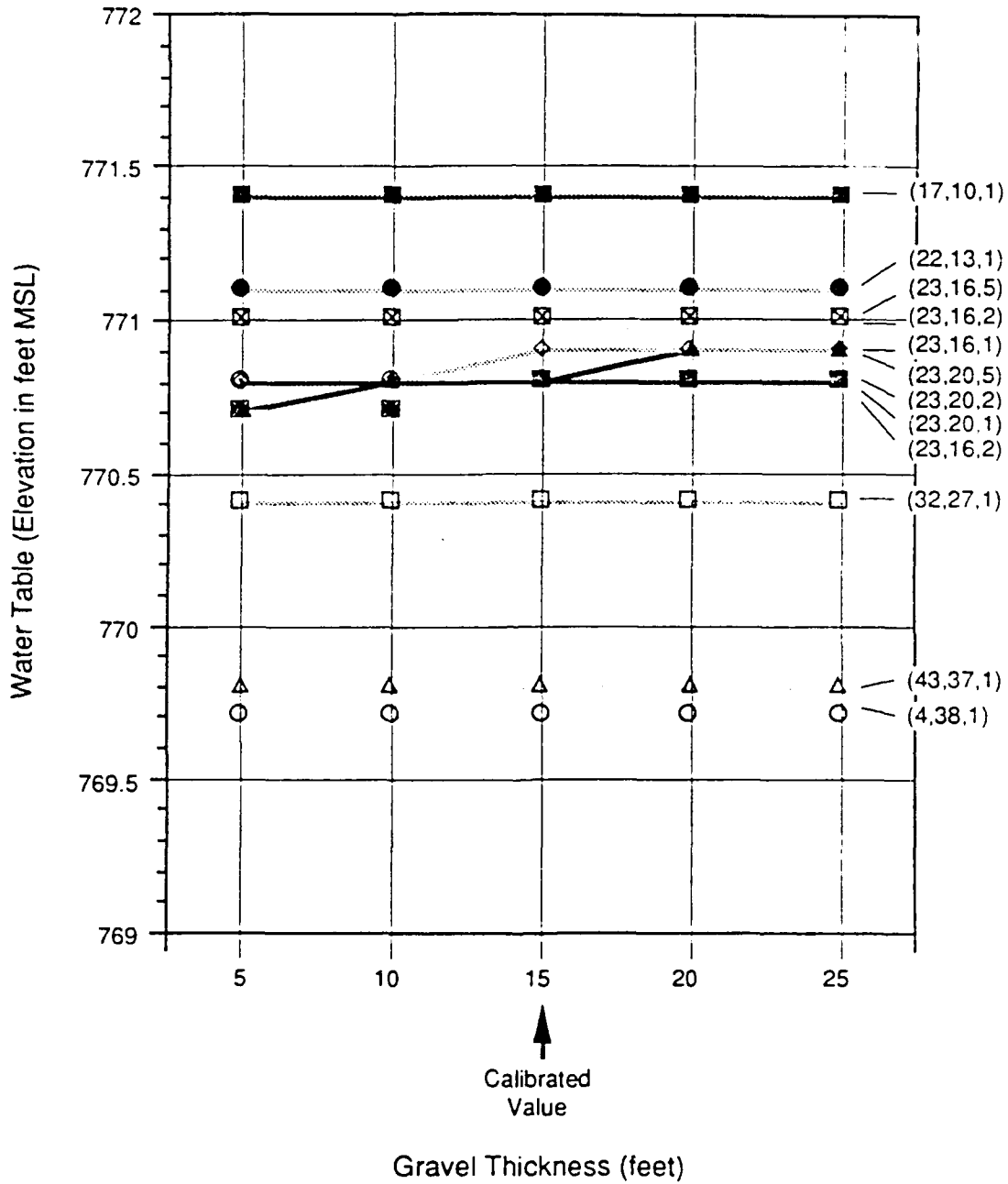


**Note:** See Figure J.3-3 for Cell Location

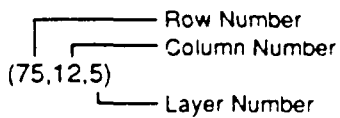
**FIGURE J.3-7  
RECHARGE - SENSITIVITY ANALYSIS  
BOX MODEL  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc





**Cell Identification**

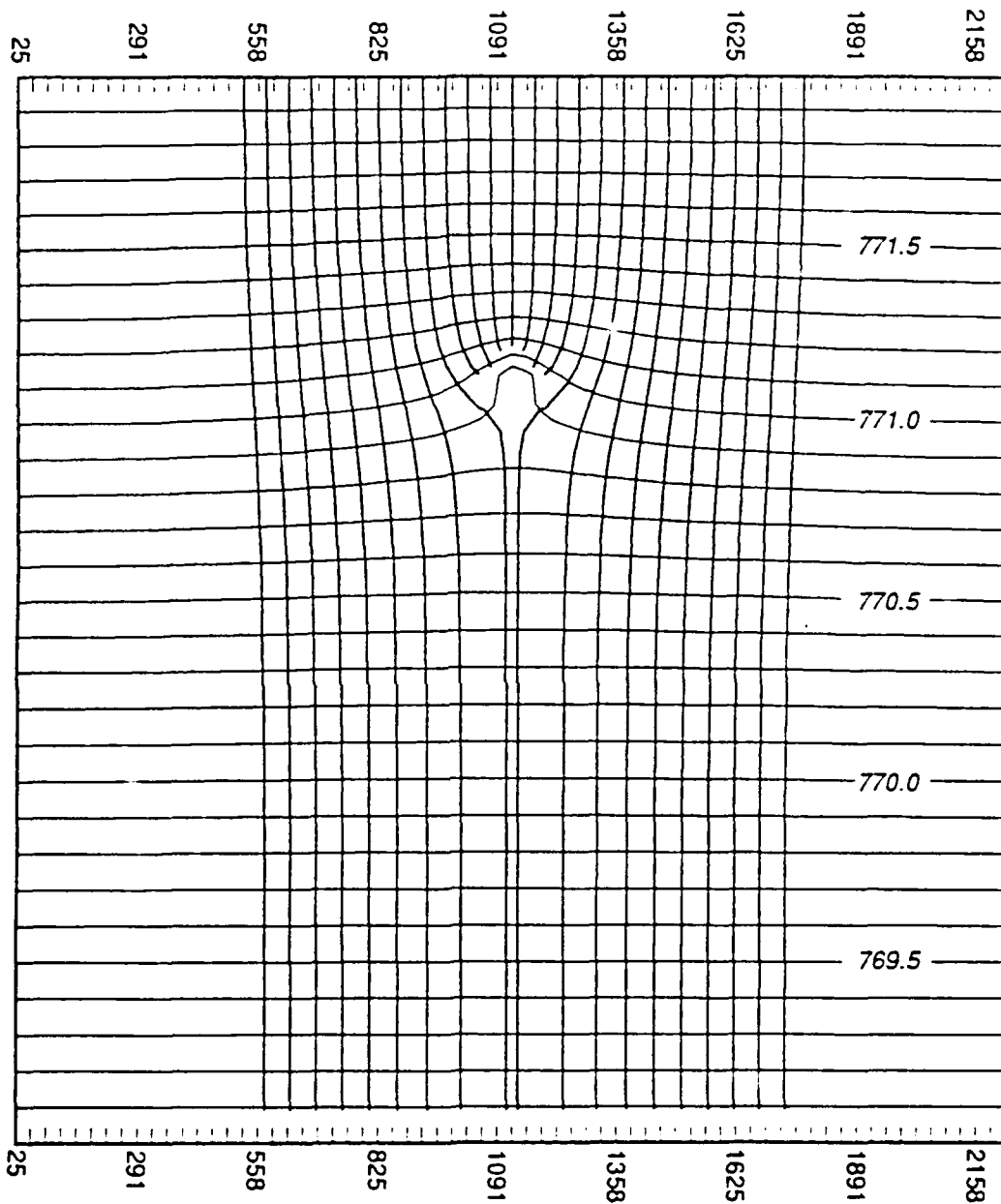


Note: See Figure J.3-3 for Cell Location

**FIGURE J.3-8**  
**GRAVEL THICKNESS - SENSITIVITY ANALYSIS**  
**BOX MODEL**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**



TEST 1 LAYER 1 -  $K = 150 \text{ ft/day}$   
 $Q = 100 \text{ gpm}$



NOTE: ELEVATION IN FEET MSL

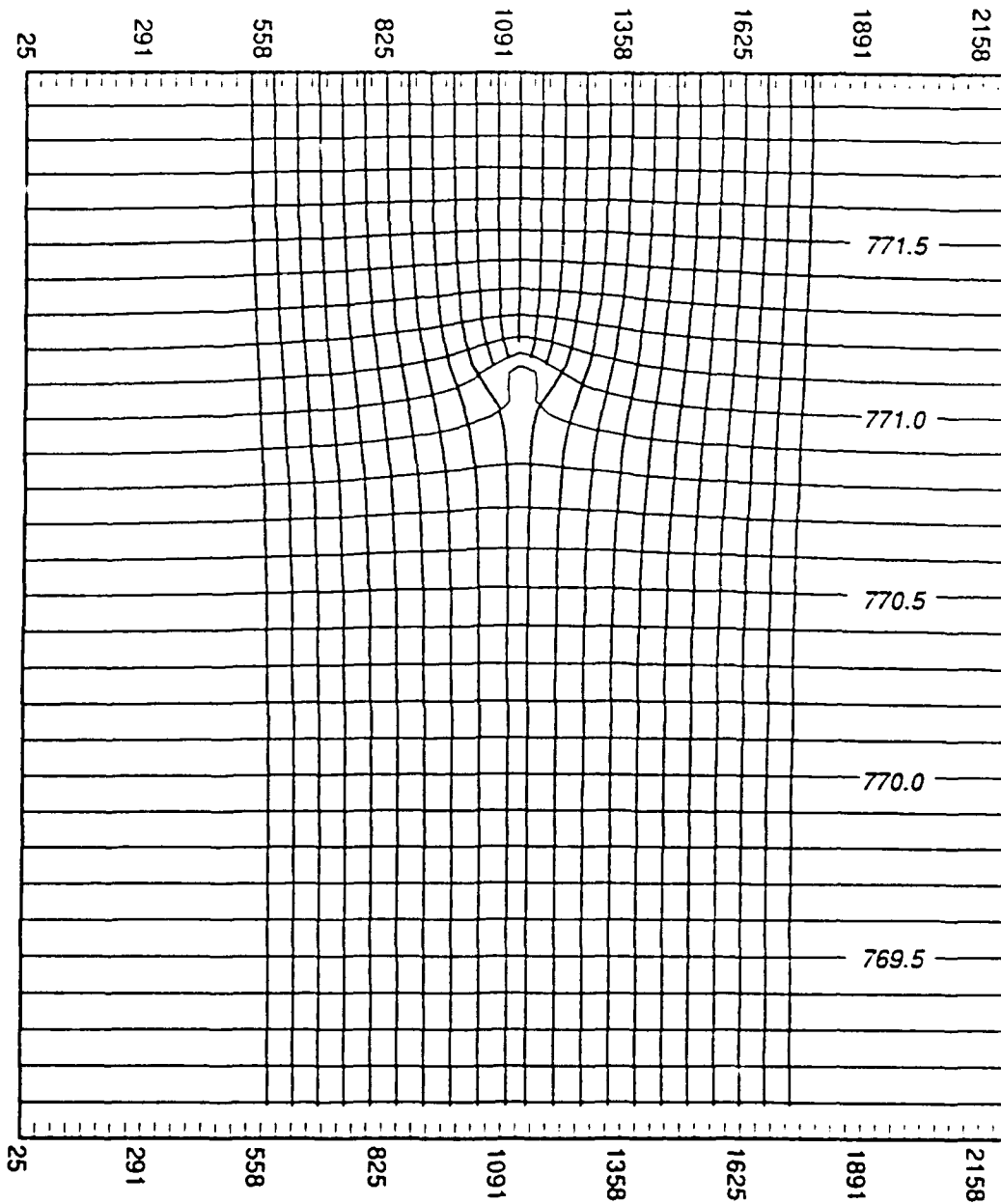


**FIGURE J.3-9**  
**CONTOUR INTERVALS AND PARTICLE TRACKING**  
**FOR BOX MODEL FOR LAYER 1**  
**PROPELLANT BURNING GROUND**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc



TEST 1 LAYER 2 - K = 1500 ft/day  
Q = 100 gpm



NOTE: ELEVATION IN FEET MSL

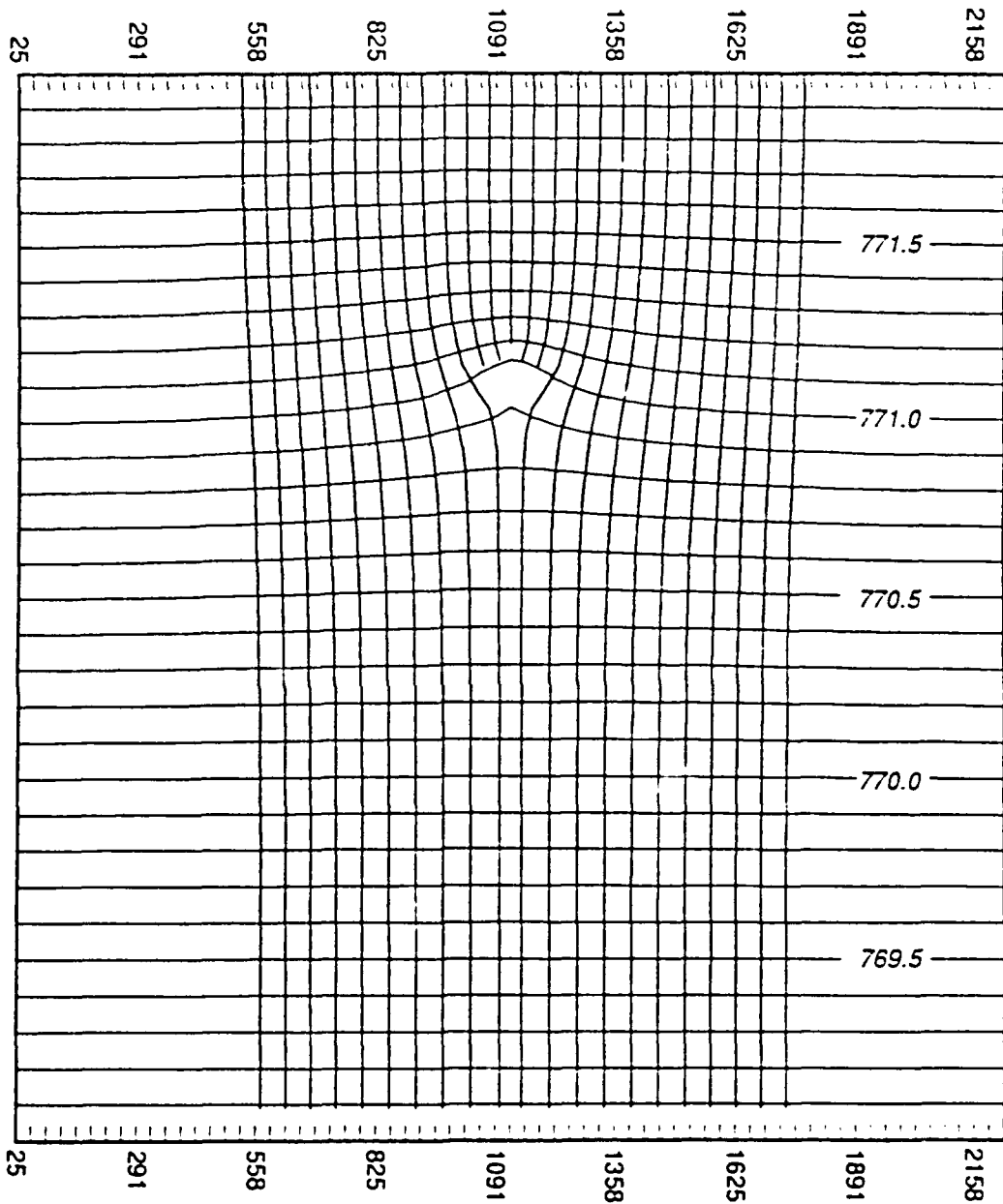


FIGURE J.3-10  
CONTOUR INTERVALS AND PARTICLE TRACKING  
FOR BOX MODEL FOR LAYER 2  
PROPELLANT BURNING GROUND  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

ABB Environmental Services, Inc.



TEST 1 LAYER 3 - K = 150 ft/day  
Q = 100 gpm



NOTE: ELEVATION IN FEET MSL.

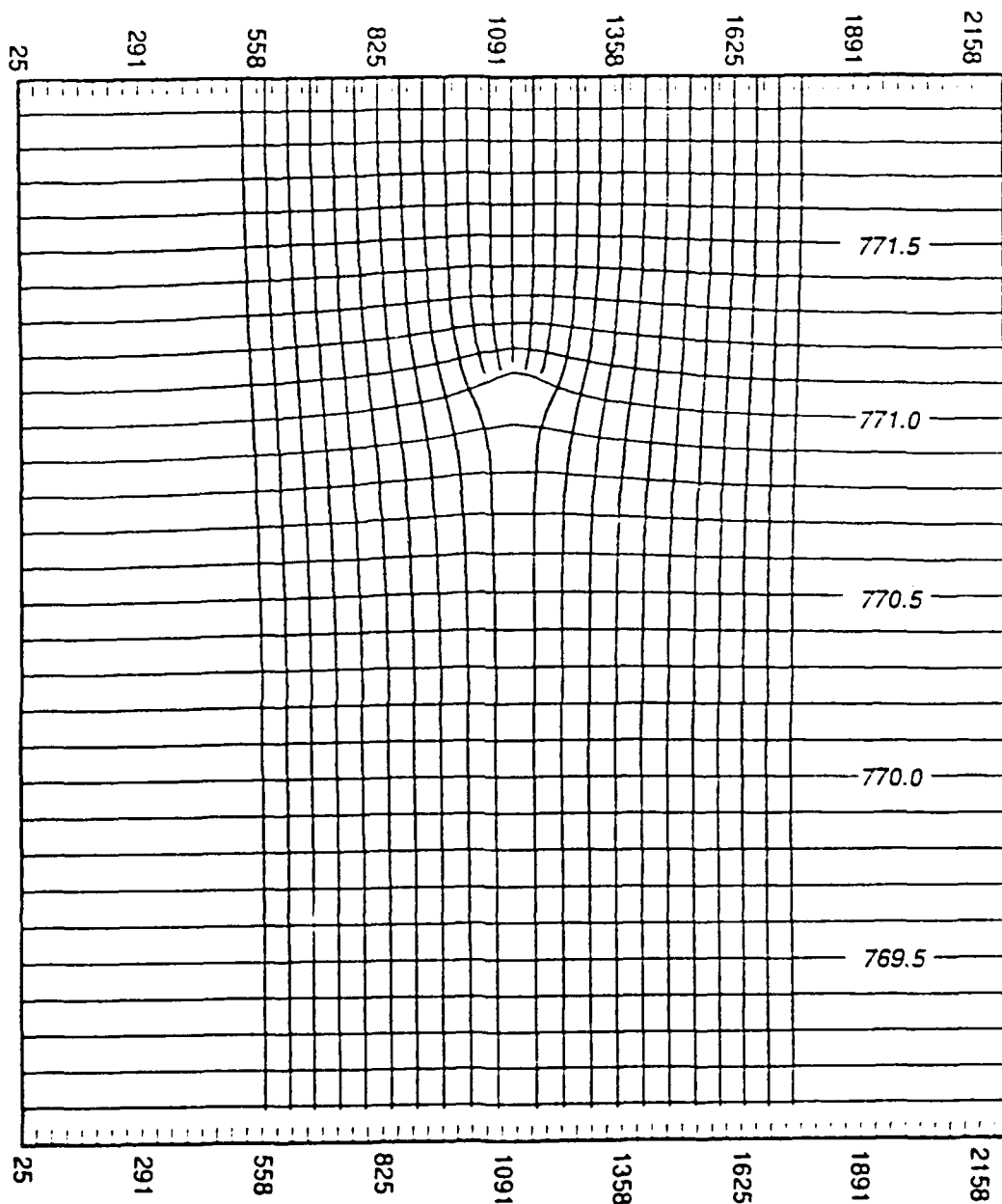


**FIGURE J.3-11**  
**CONTOUR INTERVALS AND PARTICLE TRACKING**  
**FOR BOX MODEL FOR LAYER 3**  
**PROPELLANT BURNING GROUND**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc.



TEST 1 LAYER 4 - K = 150 ft/day  
Q = 100 gpm



NOTE: ELEVATION IN FEET MSL

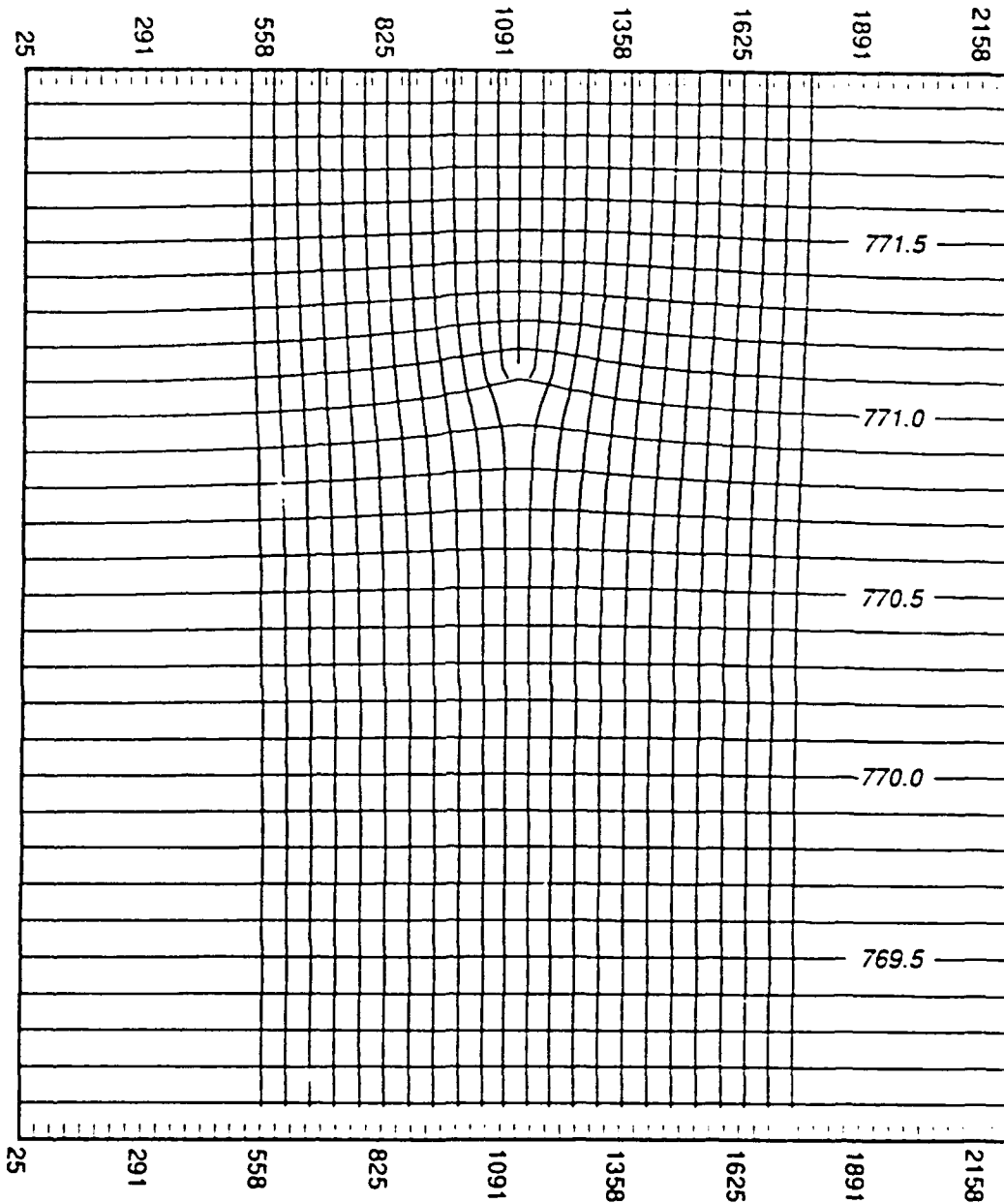


FIGURE J.3-12  
CONTOUR INTERVALS AND PARTICLE TRACKING  
FOR BOX MODEL FOR LAYER 4  
PROPELLANT BURNING GROUND  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

ABB Environmental Services, Inc.



TEST 1 LAYER 5 - K = 150 ft/day  
Q = 100 gpm



NOTE: ELEVATION IN FEET MSL

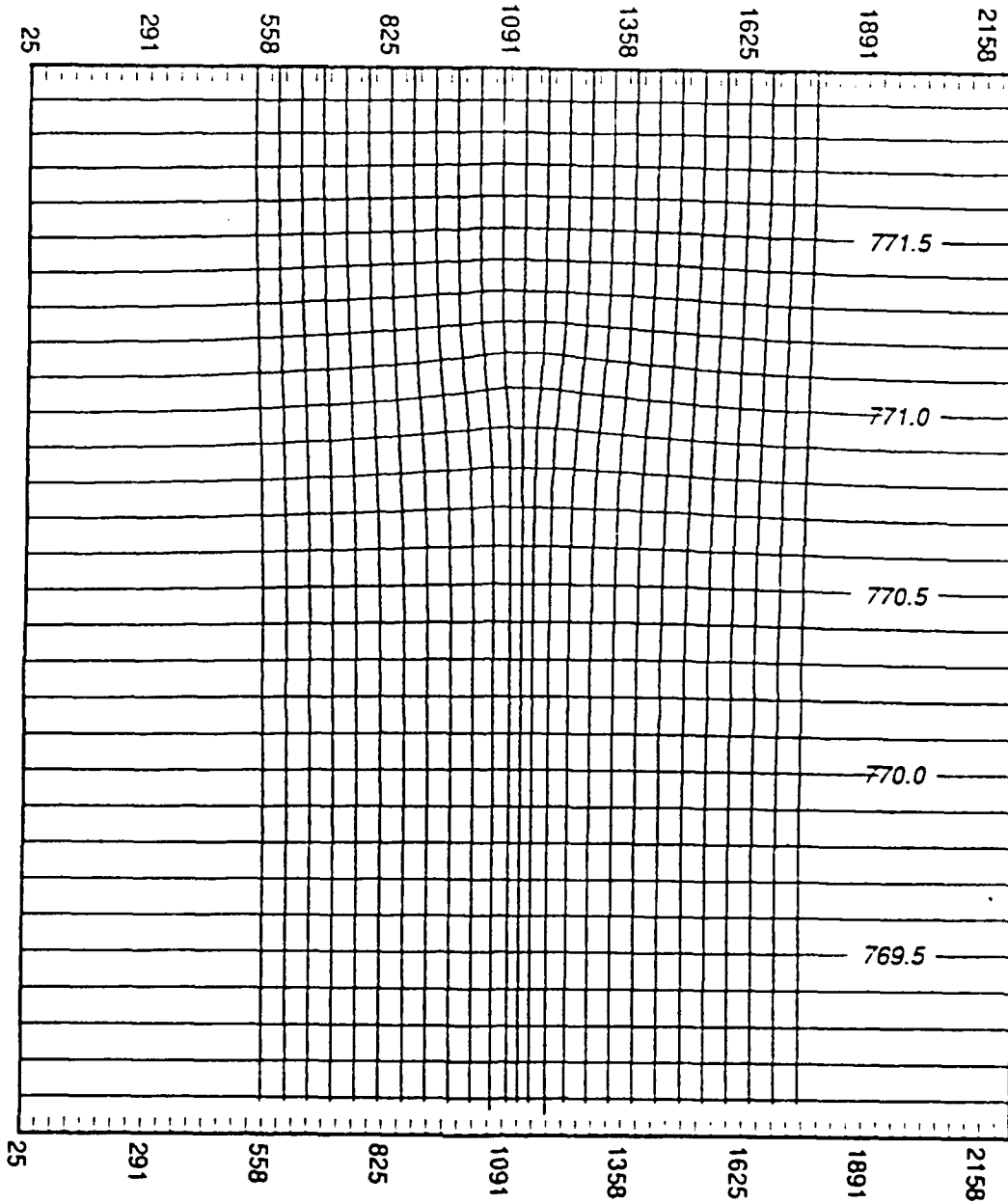


**FIGURE J.3-13**  
**CONTOUR INTERVALS AND PARTICLE TRACKING**  
**FOR BOX MODEL FOR LAYER 5**  
**PROPELLANT BURNING GROUND**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc.



TEST 1 LAYER 6 - K = 150 ft/day  
Q = 100 gpm



NOTE: ELEVATION IN FEET MSL

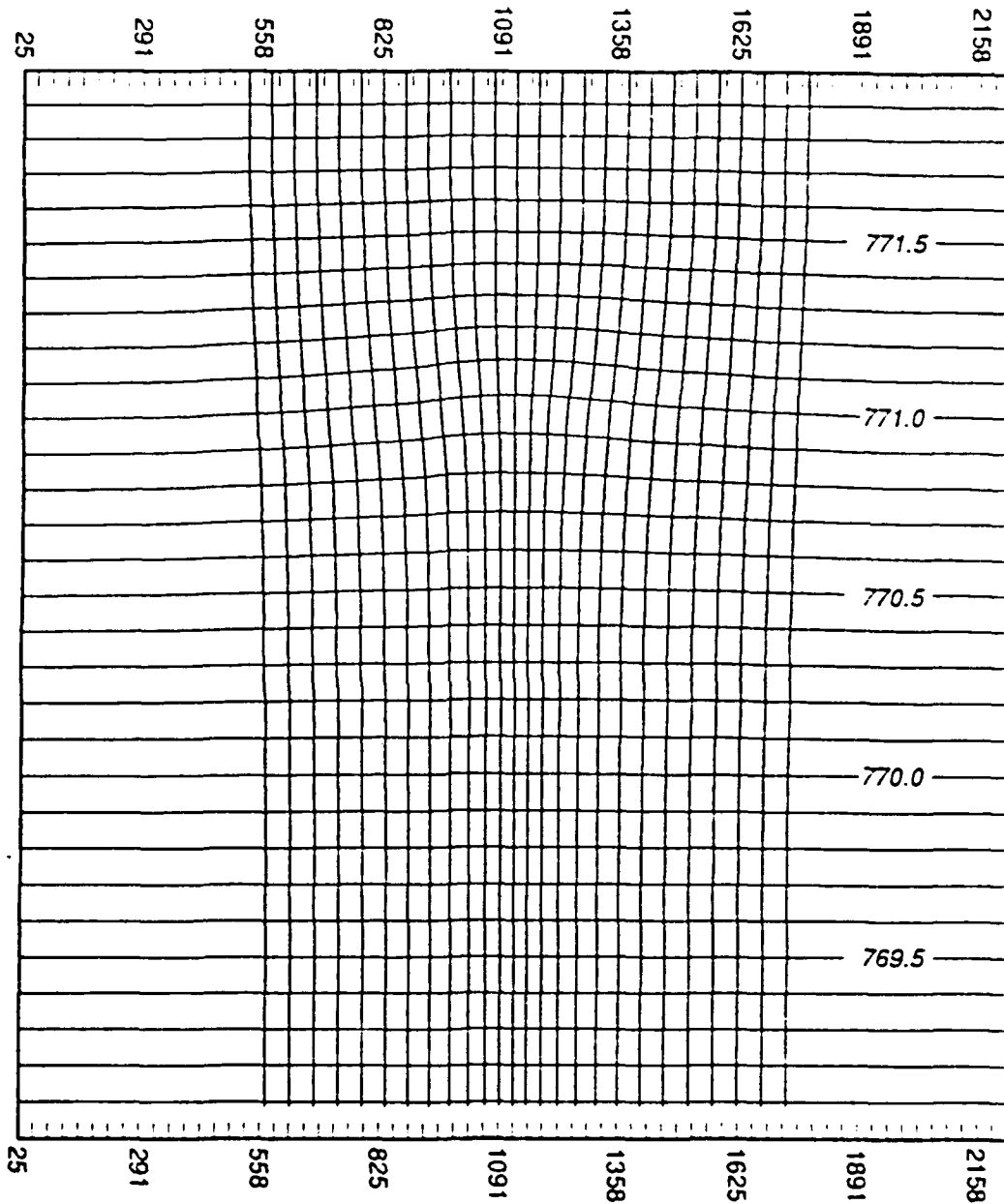


FIGURE J.3-14  
CONTOUR INTERVALS AND PARTICLE TRACKING  
FOR BOX MODEL FOR LAYER 6  
PROPELLANT BURNING GROUND  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

ABB Environmental Services, Inc.



TEST 1 LAYER 7 -  $K = 1500 \text{ ft/day}$   
 $Q = 100 \text{ gpm}$



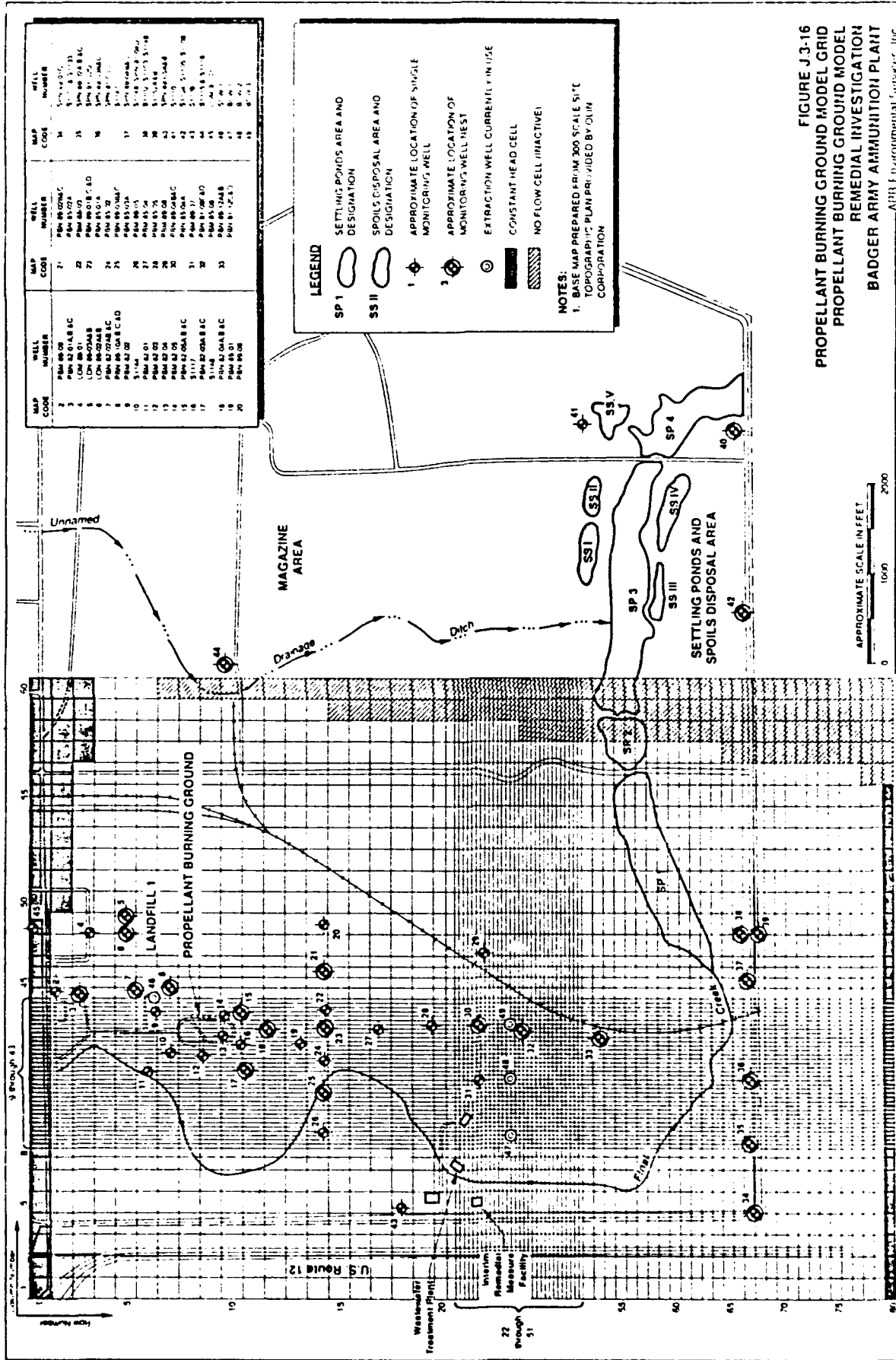
NOTE: ELEVATION IN FEET MSL



**FIGURE J.3-15**  
**CONTOUR INTERVALS AND PARTICLE TRACKING**  
**FOR BOX MODEL FOR LAYER 7**  
**PROPELLANT BURNING GROUND**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc.

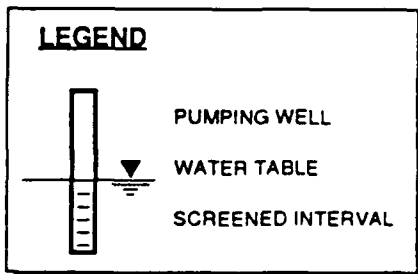
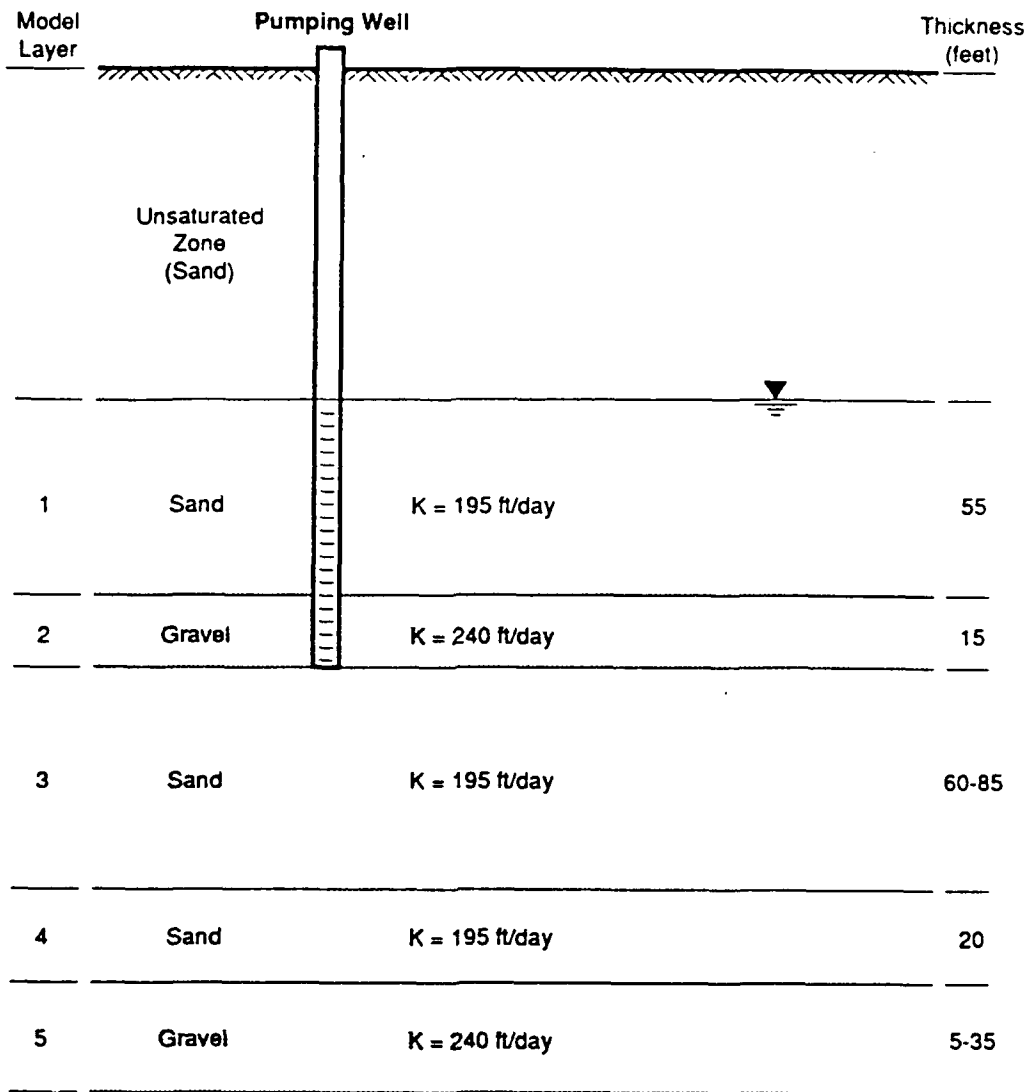




**FIGURE J-3-16**  
**PROPELLANT BURNING GROUND MODEL GRID**  
**PROPELLANT BURNING GROUND MODEL**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

APB Environmental Services, Inc.

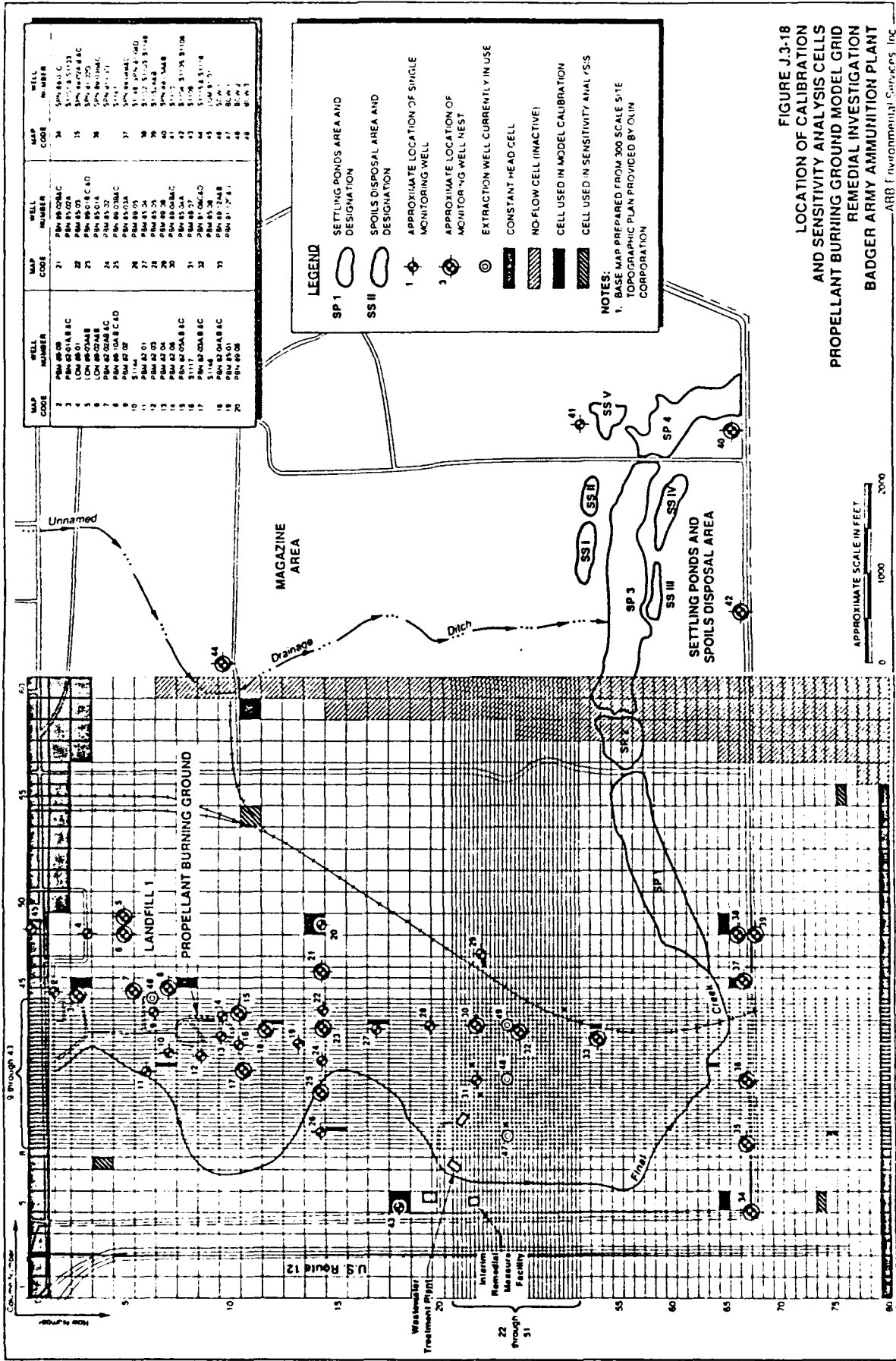




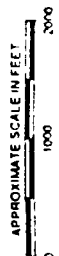
NOT TO SCALE

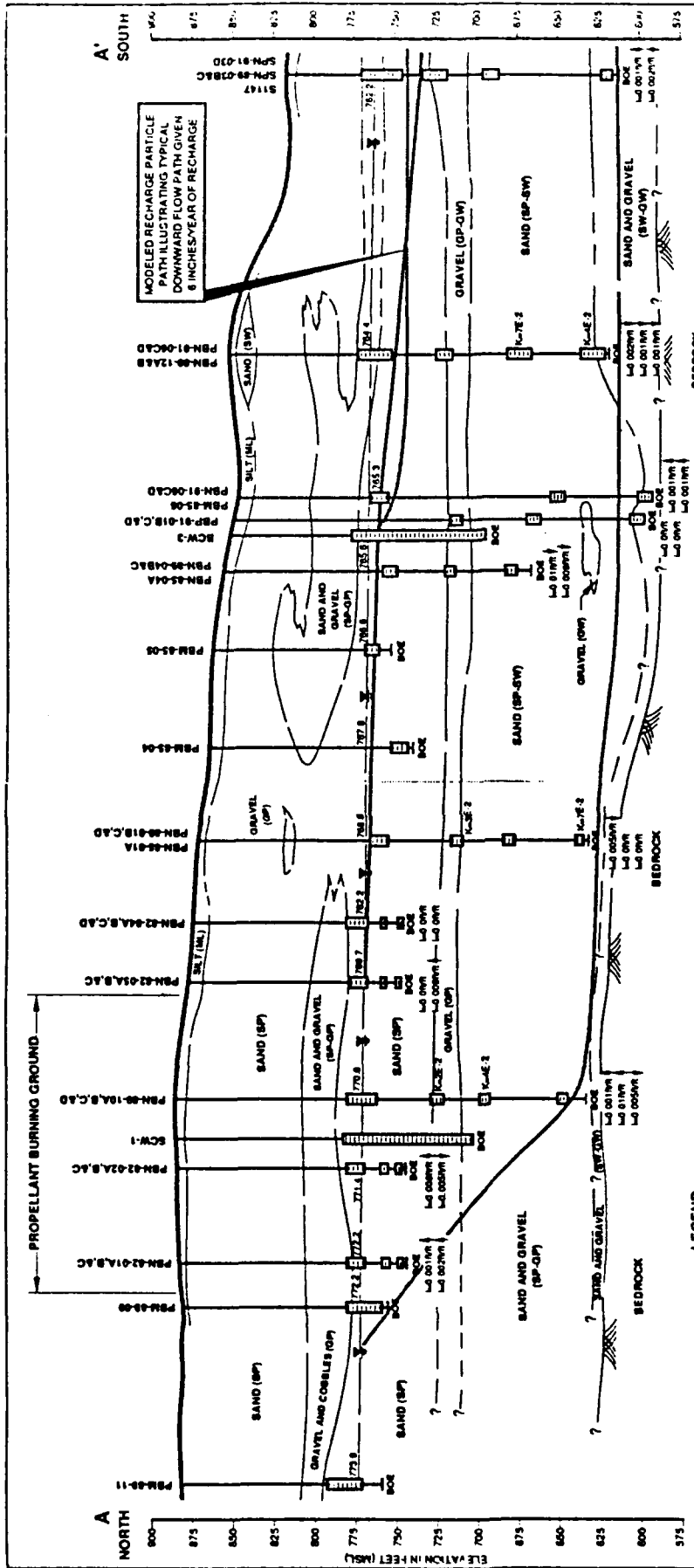
**FIGURE J.3-17  
MODEL LAYERS  
PROPELLANT BURNING GROUND  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc.



**FIGURE J.3-18**  
**LOCATION OF CALIBRATION**  
**AND SENSITIVITY ANALYSIS CELLS**  
**PROPELLANT BURNING GROUND MODEL GRID**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**  
 ARB Environmental Services, Inc.





**FIGURE J-3-19**  
**MODELED RECHARGE PARTICLE PATH**  
**AND DETECTED VOC CONTAMINANT**  
**PLUME CROSS SECTION**  
**PROPELLANT BURNING GROUND,**  
**SETTLING POUNDS AND**  
**SPOILS DISPOSAL AREA**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

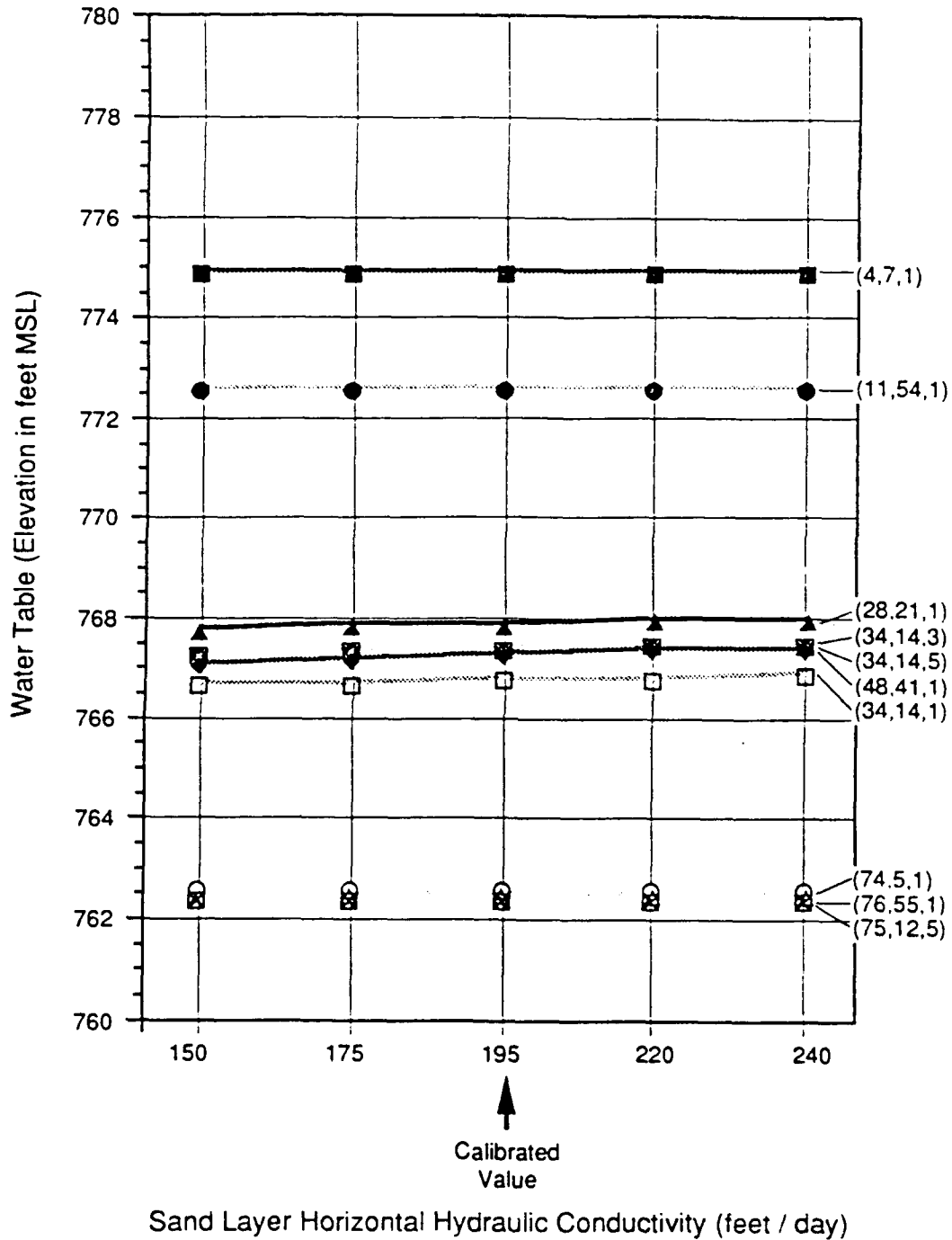
ABB Environmental Services, Inc.

- NOTES:**
1. SEE FIGURE 2-7 FOR LOCATION AND ORIENTATION OF PROFILE.
  2. PROFILES ARE BASED ON AN INTERPRETATION OF AVAILABLE SUBSURFACE DATA. ACTUAL CONDITIONS BETWEEN EXPLORATIONS MAY VARY FROM THOSE SHOWN.
  3. ON MULTIPLE WELL METS, GRADIENTS ARE LISTED IN ORDER OF SHALLOW TO DEEP WELLS, I, A TO B TO C AND C TO D.
  4. WATER LEVELS MEASURED IN WATER TABLE WELLS ON 12/15/91 ARE LISTED.
  5. BEDROCK SURFACE ELEVATION ESTIMATED FROM PMS #6-10 AND PRODUCTION WELL NO. 3.
  6. BEDROCK SURFACE ELEVATION ESTIMATED FROM PMS #6-10 IS LOCATED ADJACENT TO PMS #6-10. SP-11 AND 11C LOCATED APPROXIMATELY 1200 FEET SOUTH OF PMS #6-10. PMS #6-10 IS APPROXIMATELY 1200 FEET SOUTH OF PMS #6-10. PMS #6-10 IS APPROXIMATELY 1200 FEET SOUTH OF PMS #6-10.
  7. PMS #6-10 IS USED ONLY FOR GEOLOGIC INFORMATION AND AQUIFER ANALYSIS. IT IS NOT A MONITORING WELL CLUSTER.
  8. ALL EXTRACTION WELLS WERE TURNED OFF FOR PARTICLE TRACKING RUN.
  9. ESTIMATED EXTENT OF VOC PLUME IS BASED ON DETECTION OF TICLE AND/OR CCL4.

- LEGEND**
- WELL IDENTIFICATION: SUFFICES REFER TO WATER TABLE (W), AND PREZOMETER (P.C.A.D.)
  - GROUND SURFACE
  - SOILS DESCRIPTION AND USES CLASSIFICATION
  - WATER TABLE ELEVATION
  - SCREENED INTERVAL
  - IN-FIELD PERMEABILITY TEST RESULTS IN GRAPH
  - BOTTOM OF EXPLORATION
  - GROUNDWATER VERTICAL GRADIENT (ARROW INDICATES DIRECTION OF VERTICAL GRADIENT)
  - ESTIMATED EXTENT OF VOC PLUME, DASHED WHERE APPROXIMATED



8/27/92 2:14

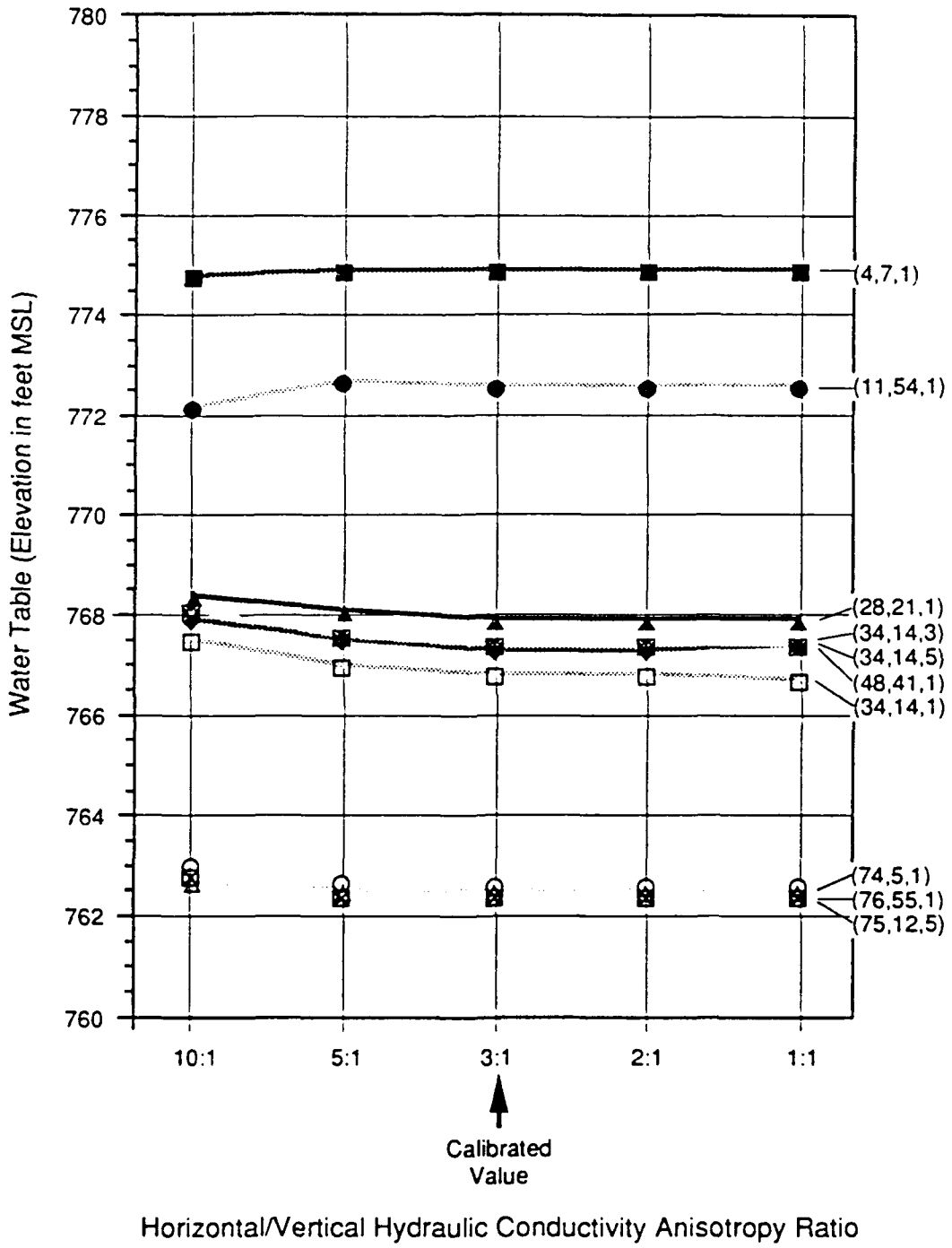


**Cell Identification**

— Row Number  
 — Column Number  
 (75,12,5)  
 — Layer Number

**Note:** See Figure J.3-18 for Cell Location.

**FIGURE J.3-20  
 HORIZONTAL K - SENSITIVITY ANALYSIS  
 PROPELLANT BURNING GROUND MODEL  
 REMEDIAL INVESTIGATION  
 BADGER ARMY AMMUNITION PLANT**

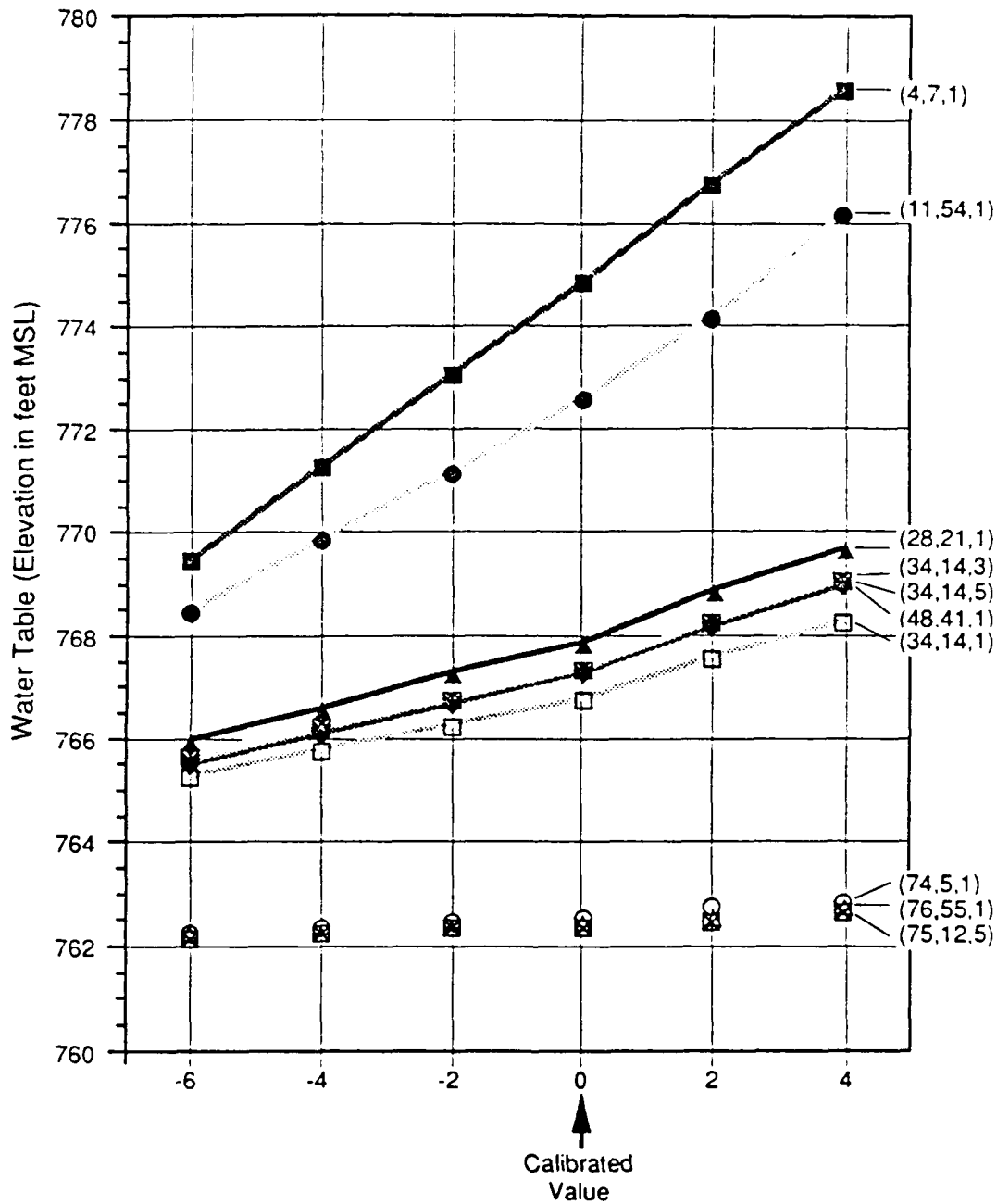


**Cell Identification**

— Row Number  
 — Column Number  
 (75,12,5)  
 — Layer Number

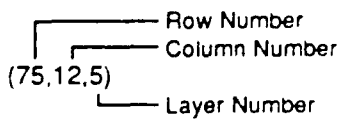
Note: See Figure J.3-18 for Cell Location

**FIGURE J.3-21**  
**VERTICAL K - SENSITIVITY ANALYSIS**  
**PROPELLANT BURNING GROUND MODEL**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**



Variance in Constant Head from Calibrated Value (feet)

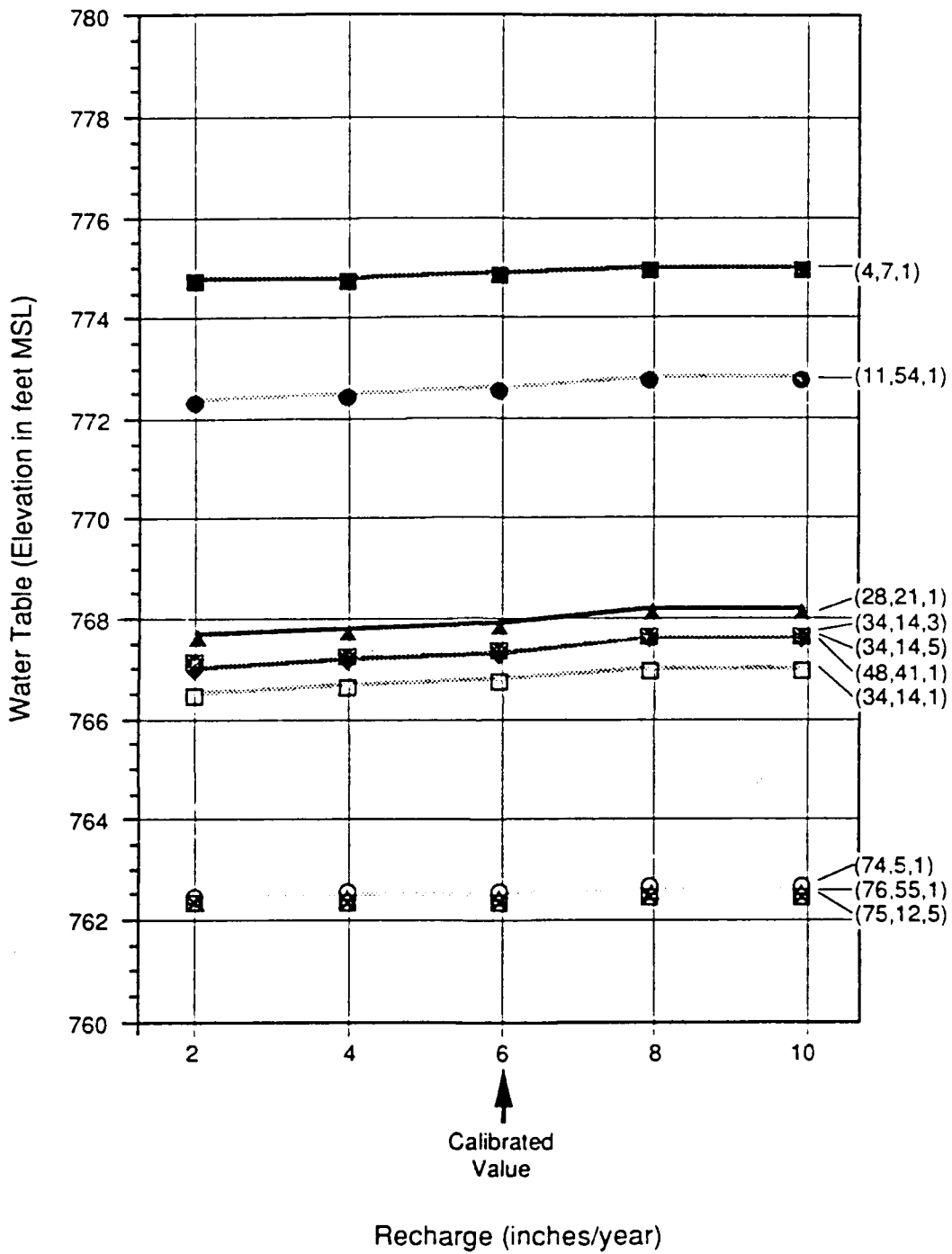
**Cell Identification**



Note: See Figure J.3-18 for Cell Location

**FIGURE J.3-22  
CONSTANT HEAD - SENSITIVITY ANALYSIS  
PROPELLANT BURNING GROUND MODEL  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc.



**Cell Identification**

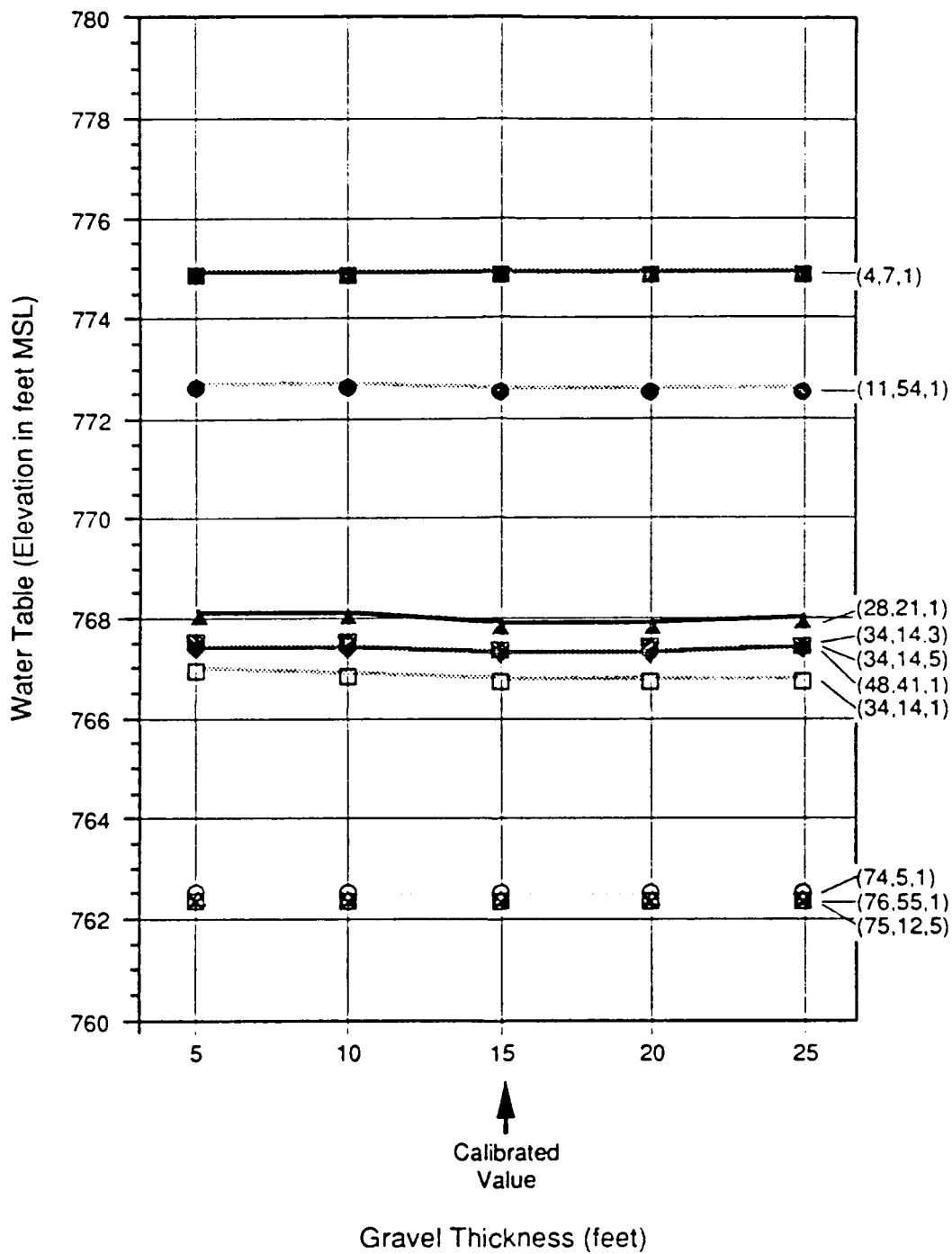
┌── Row Number  
 │ ┌── Column Number  
 (75,12,5)  
 └── Layer Number

**Note:** See Figure J.3-18 for Cell Location

**FIGURE J.3-23**  
**RECHARGE - SENSITIVITY ANALYSIS**  
**PROPELLANT BURNING GROUND MODEL**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc





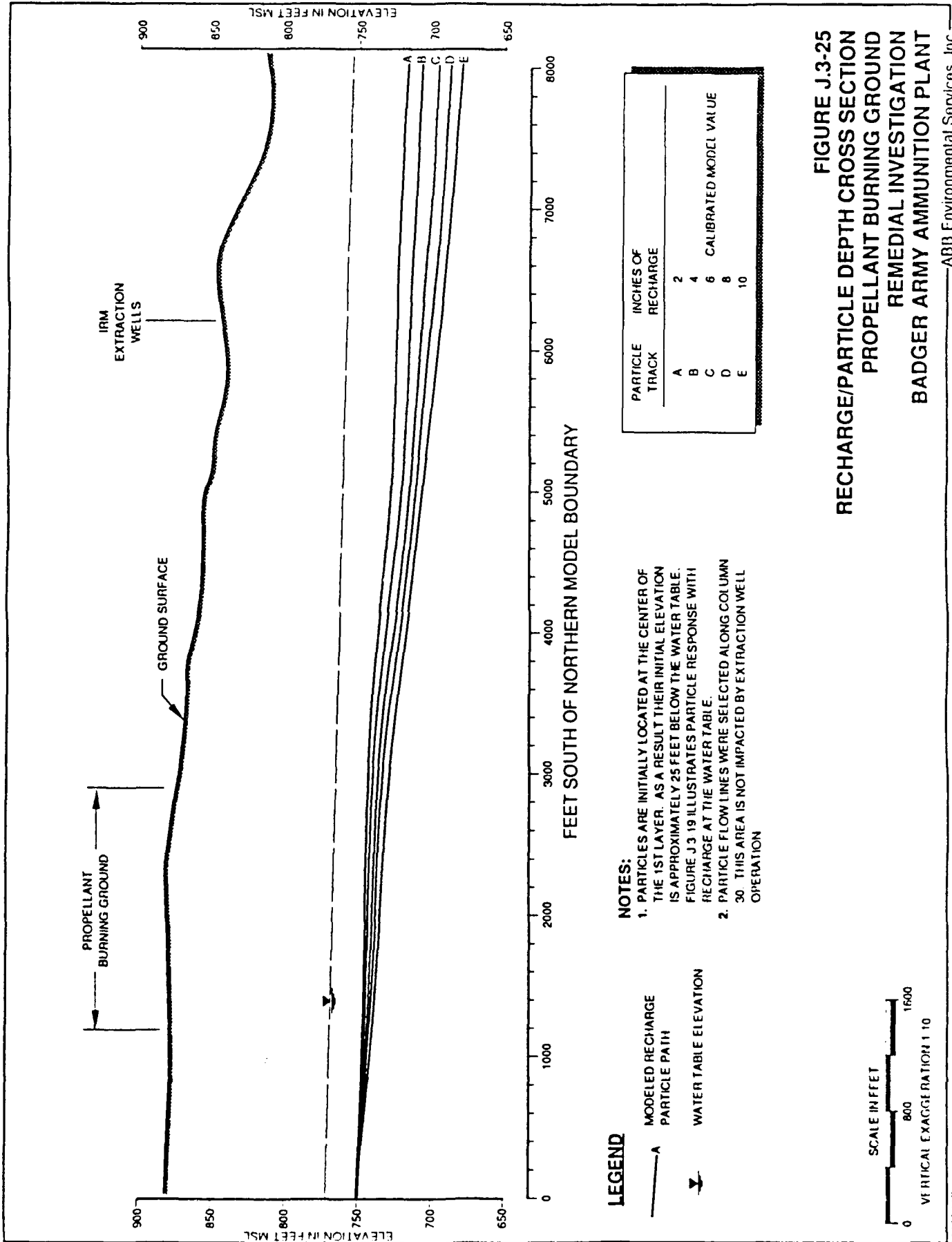
**Cell Identification**

Row Number  
 Column Number  
 Layer Number  
 (75,12,5)

Note: See Figure J.3-18 for Cell Location

**FIGURE J.3-24**  
**GRAVEL THICKNESS - SENSITIVITY ANALYSIS**  
**PROPELLANT BURNING GROUND MODEL**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

ABB Environmental Services, Inc.



PROPELLANT  
BURNING GROUND

IRM  
EXTRACTION  
WELLS

GROUND SURFACE

ELEVATION IN FEET MSL  
900  
850  
800  
750  
700  
650

0 1000 2000 3000 4000 5000 6000 7000 8000  
FEET SOUTH OF NORTHERN MODEL BOUNDARY

**LEGEND**

- MODELED RECHARGE
- PARTICLE PATH
- WATER TABLE ELEVATION

**NOTES:**

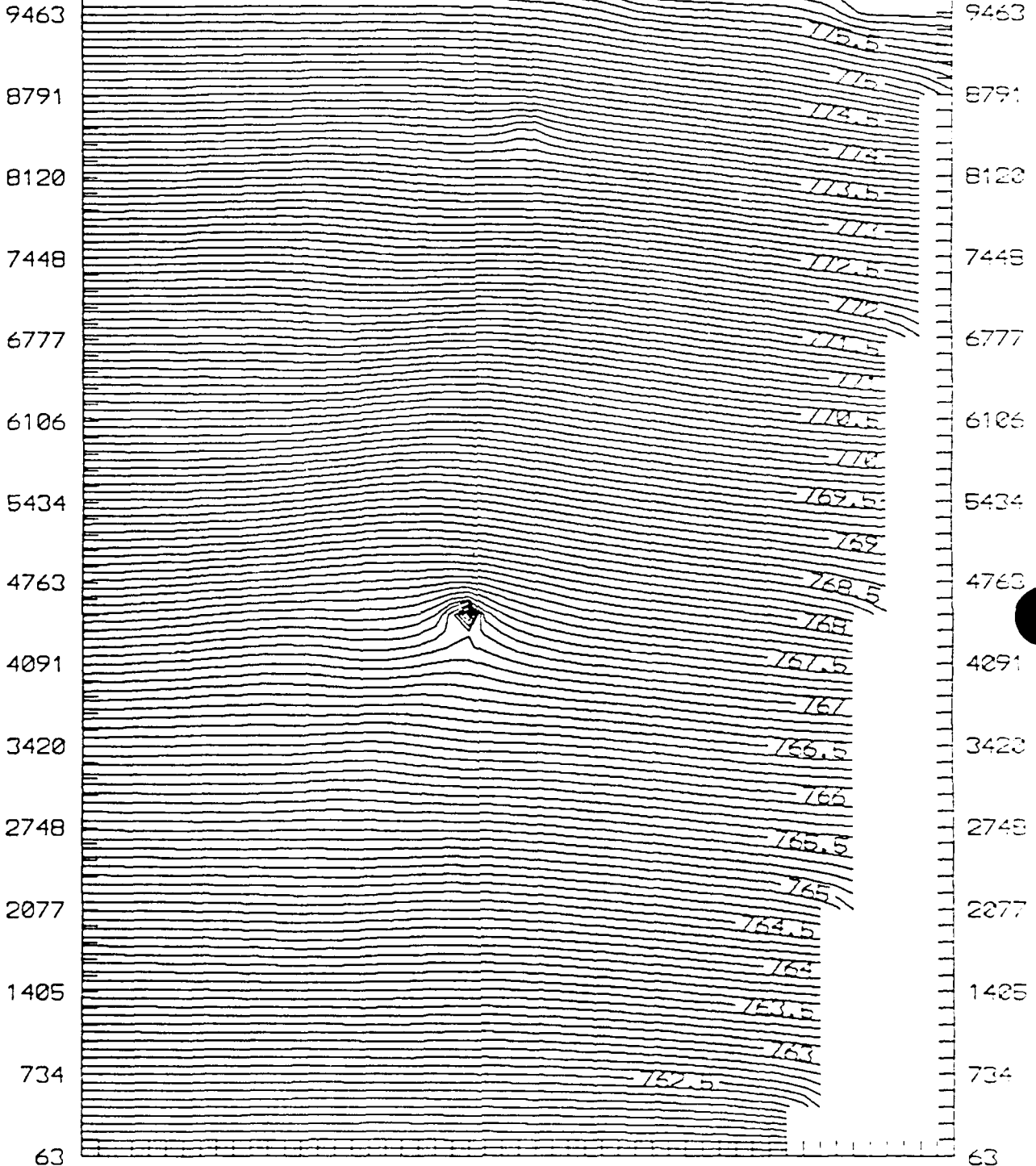
1. PARTICLES ARE INITIALLY LOCATED AT THE CENTER OF THE 1ST LAYER. AS A RESULT THEIR INITIAL ELEVATION IS APPROXIMATELY 25 FEET BELOW THE WATER TABLE. FIGURE J.3.19 ILLUSTRATES PARTICLE RESPONSE WITH RECHARGE AT THE WATER TABLE.
2. PARTICLE FLOW LINES WERE SELECTED ALONG COLUMN 30. THIS AREA IS NOT IMPACTED BY EXTRACTION WELL OPERATION

PARTICLE TRACK	INCHES OF RECHARGE
A	2
B	4
C	6
D	8
E	10

SCALE IN FEET  
0 800 1600  
VERTICAL EXAGGERATION 1:10

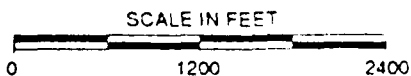
**FIGURE J.3-25**  
**RECHARGE/PARTICLE DEPTH CROSS SECTION**  
**PROPELLANT BURNING GROUND**  
**REMEDIAL INVESTIGATION**  
**BADGER ARMY AMMUNITION PLANT**

TEST 4 LAYER 1 - K = 195 ft/day  
Q = 200 gpm



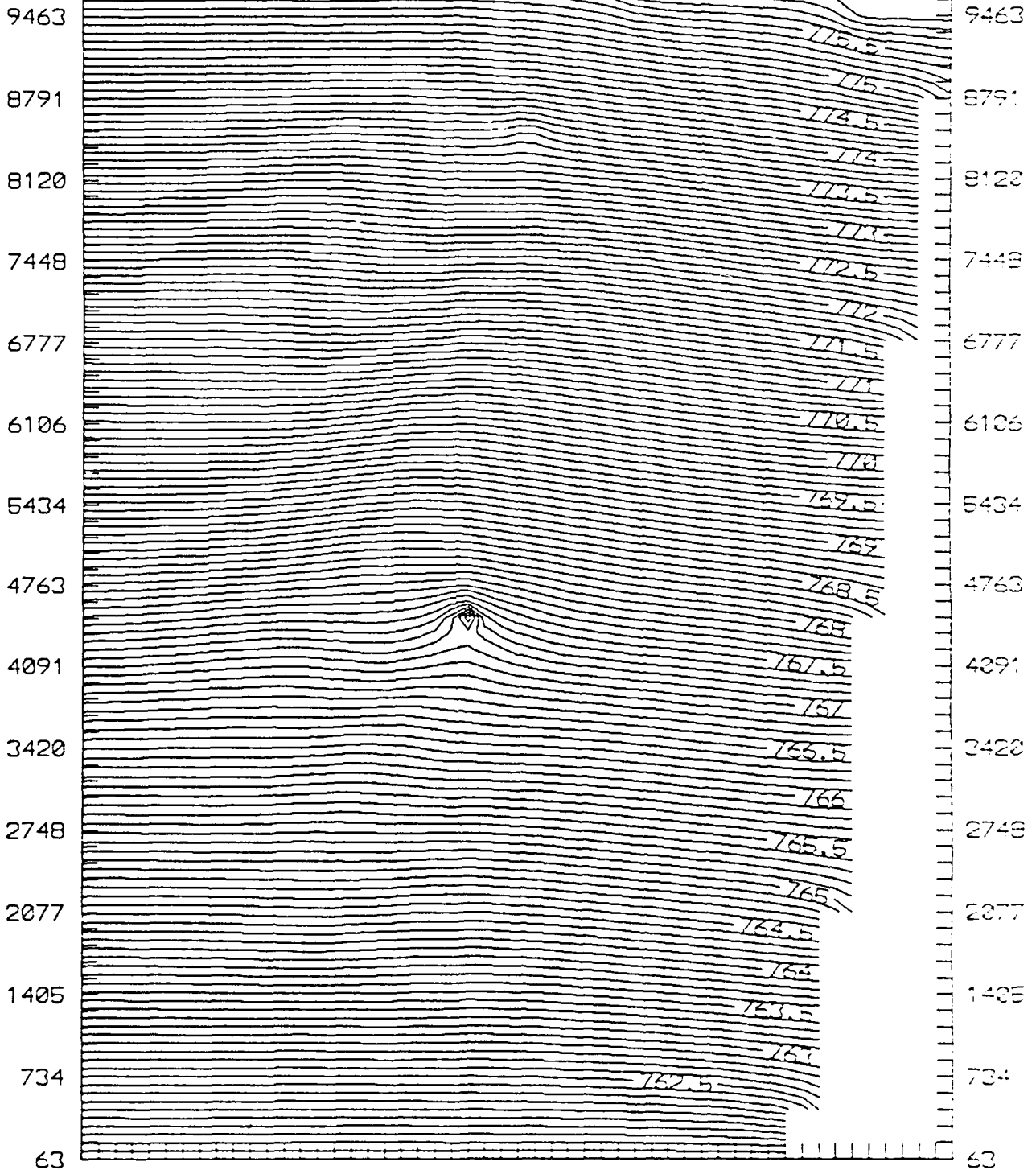
NOTE: ELEVATION IN FEET MSL.

FIGURE J.3-26  
CONTOUR INTERVALS FOR AQUIFER TEST SIMULATION FOR LAYER 1  
PROPELLANT BURNING GROUND  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT  
ABB Environmental Services, Inc.





TEST 4 LAYER 2 - K = 240 ft/day  
Q = 200 gpm



NOTE: ELEVATION IN FEET MSL

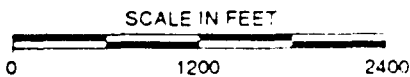
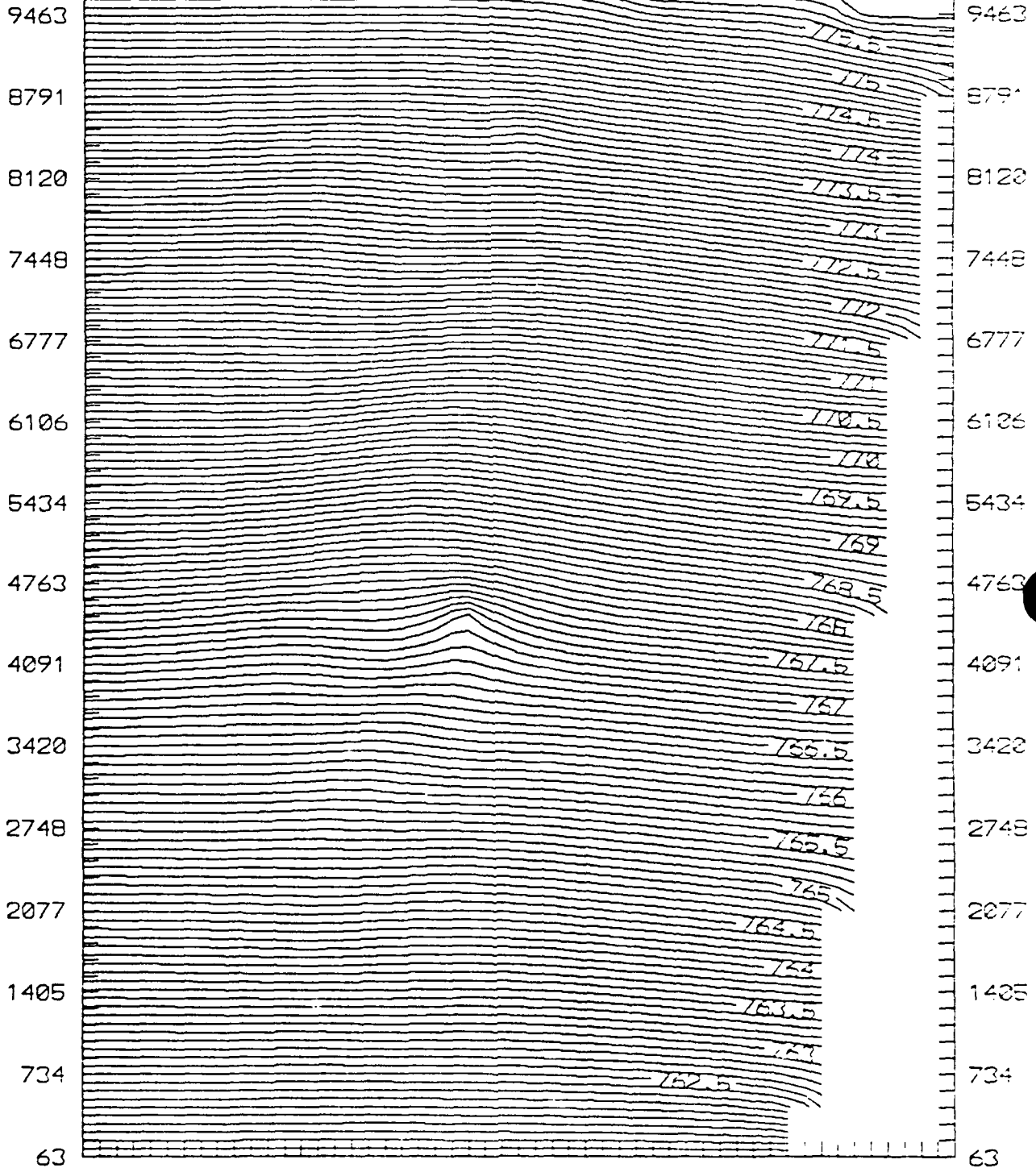


FIGURE J.3-27  
CONTOUR INTERVALS FOR AQUIFER TEST SIMULATION FOR LAYER 2  
PROPELLANT BURNING GROUND  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

ABB Environmental Services, Inc.

TEST 4 LAYER 3 - K = 195 ft/day  
Q = 200 gpm



NOTE: ELEVATION IN FEET MSL.

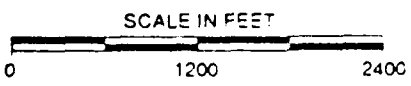
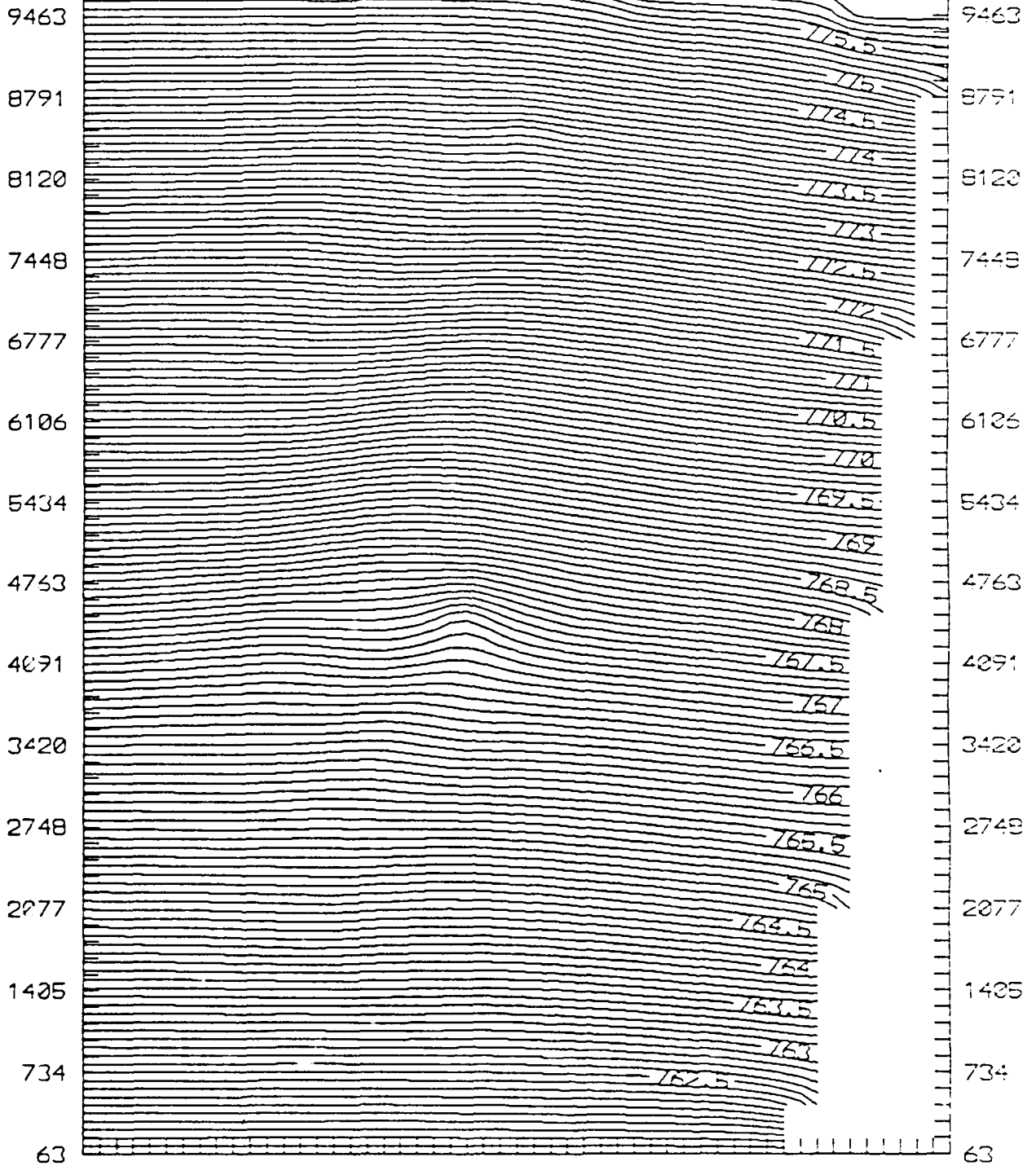


FIGURE J.3-28  
CONTOUR INTERVALS FOR AQUIFER TEST SIMULATION FOR LAYER 3  
PROPELLANT BURNING GROUND  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

ABB Environmental Services, Inc.



TEST 4 LAYER 4 - K = 195 ft/day  
Q = 200 gpm



NOTE: ELEVATION IN FEET MSL.

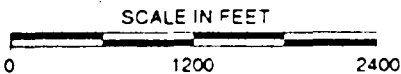
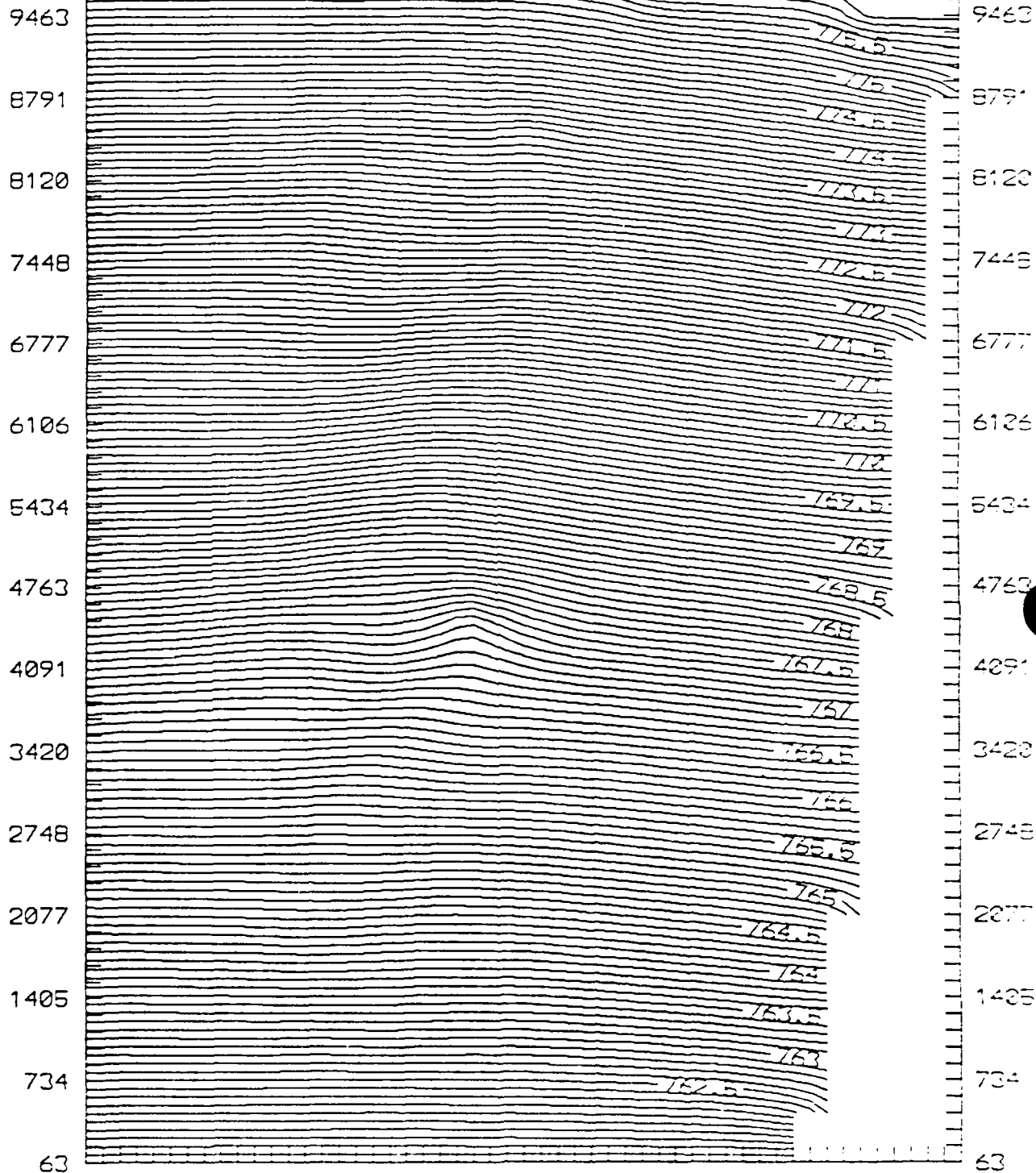


FIGURE J.3-29  
CONTOUR INTERVALS FOR AQUIFER TEST SIMULATION FOR LAYER 4  
PROPELLANT BURNING GROUND  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT  
ABB Environmental Services, Inc.



TEST 4 LAYER 5 - K = 240 ft/day  
Q = 200 gpm



NOTE: ELEVATION IN FEET MSL

FIGURE J.3-30  
CONTOUR INTERVALS FOR AQUIFER TEST SIMULATION FOR LAYER 5  
PROPELLANT BURNING GROUND  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

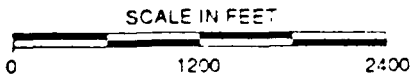
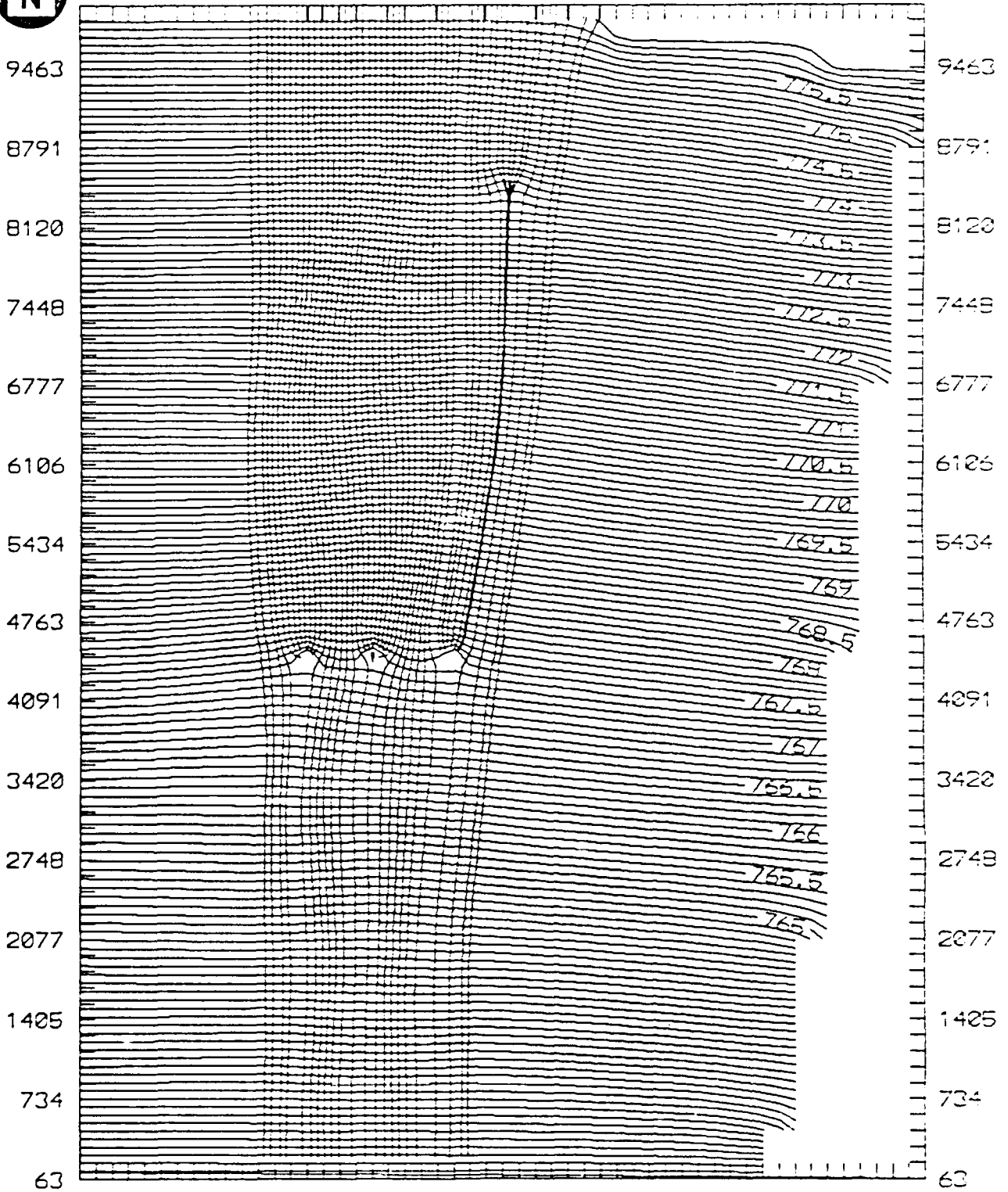


ABB Environmental Services, Inc.



TEST 1 LAYER 1 - K = 195 ft/day  
Q = 60 gpm



NOTE: ELEVATION IN FEET MSL

FIGURE J.3-31  
CONTOUR INTERVALS AND PARTICLE TRACKING FOR IRM MODEL FOR LAYER 1  
PROPELLANT BURNING GROUND  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT

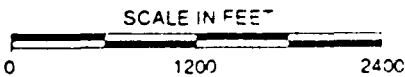
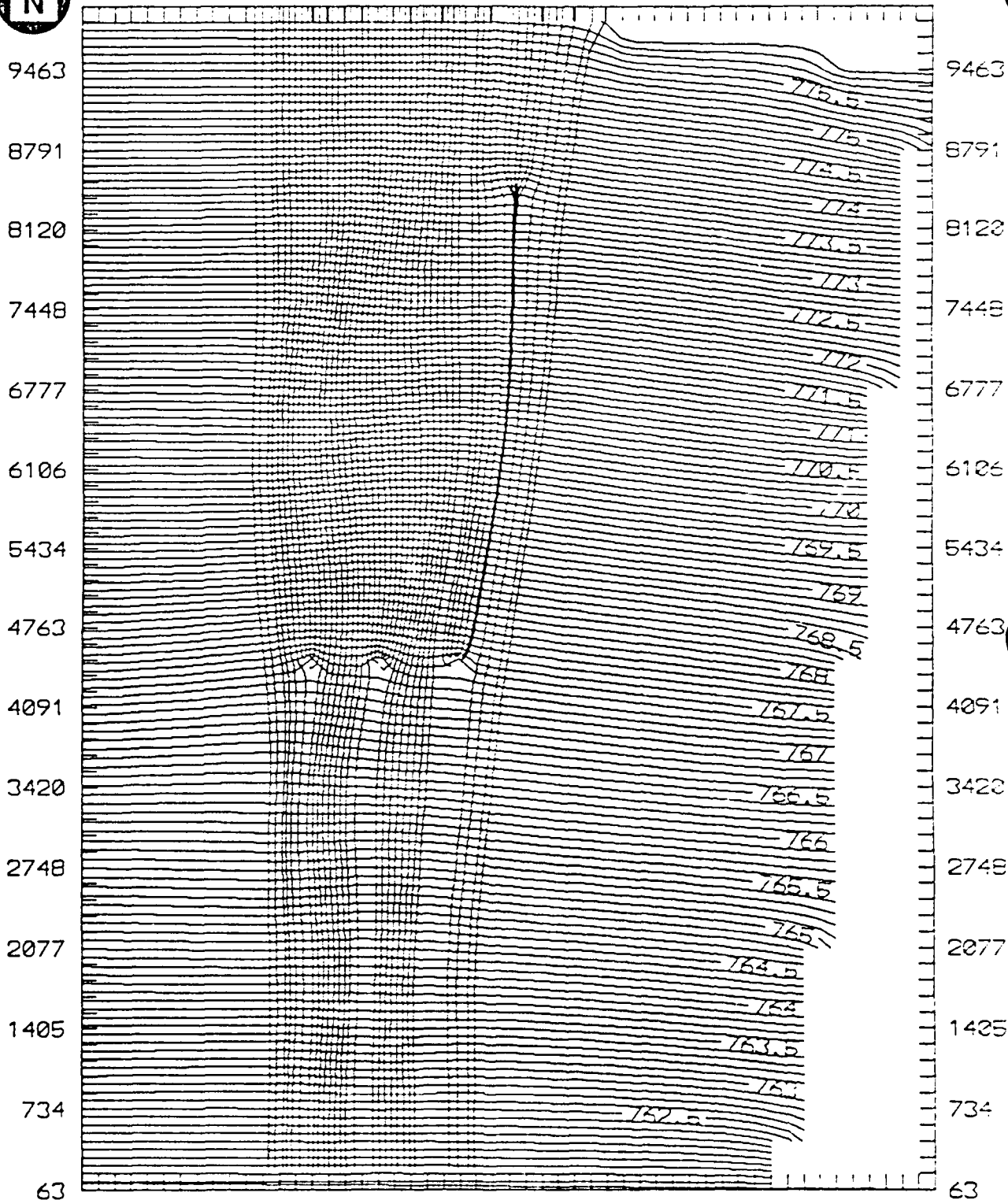


ABB Environmental Services, Inc.





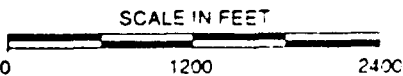
TEST 1 LAYER 2 - K = 240 ft/day  
Q = 60 gpm



NOTE: ELEVATION IN FEET MSL.

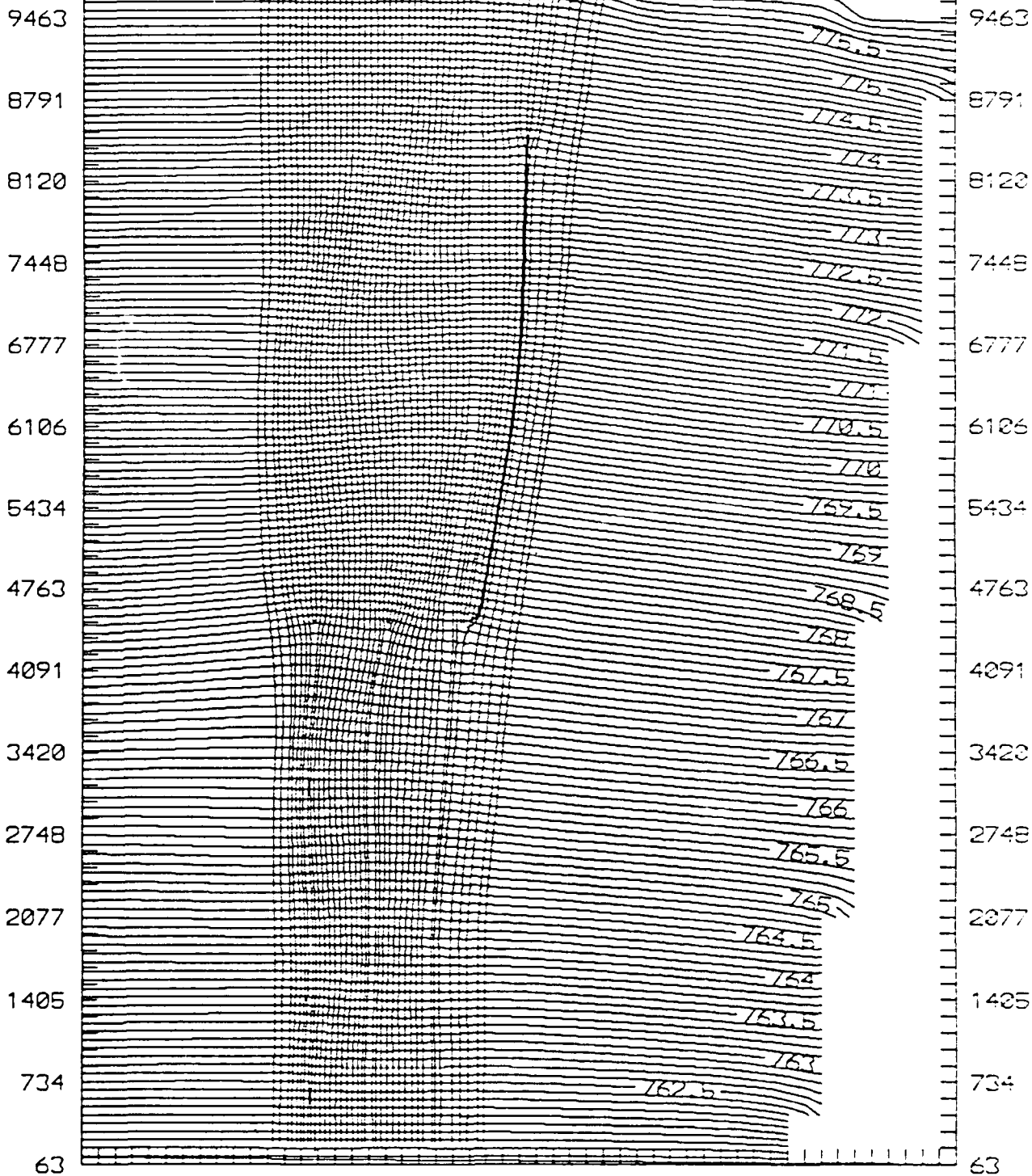
FIGURE J.3-32

CONTOUR INTERVALS AND PARTICLE TRACKING FOR IRM MODEL FOR LAYER 2  
PROPELLANT BURNING GROUND  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT



— ABB Environmental Services, Inc. —

TEST 1 LAYER 3 - K = 195 ft/day  
Q = 60 gpm



NOTE: ELEVATION IN FEET MSL.

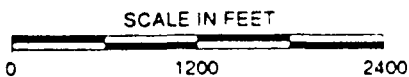
CONTOUR INTERVALS AND PARTICLE TRACKING FOR IRM MODEL FOR LAYER 3

PROPELLANT BURNING GROUND

REMEDIAL INVESTIGATION

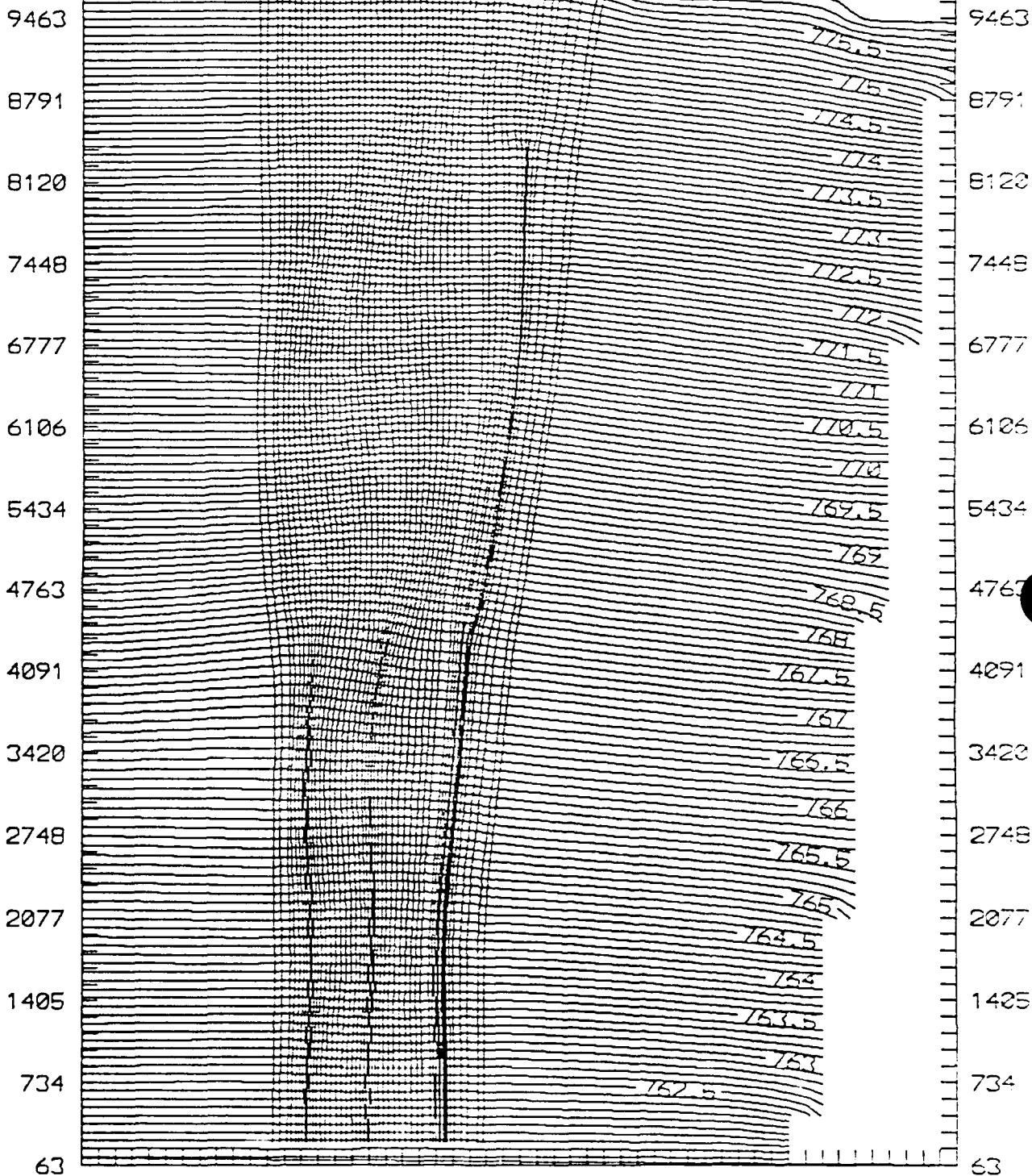
BADGER ARMY AMMUNITION PLANT

ABB Environmental Services, Inc.





TEST 1 LAYER 4 - K = 195 ft/day  
Q = 60 gpm



NOTE: ELEVATION IN FEET MSL.

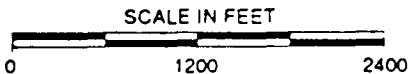
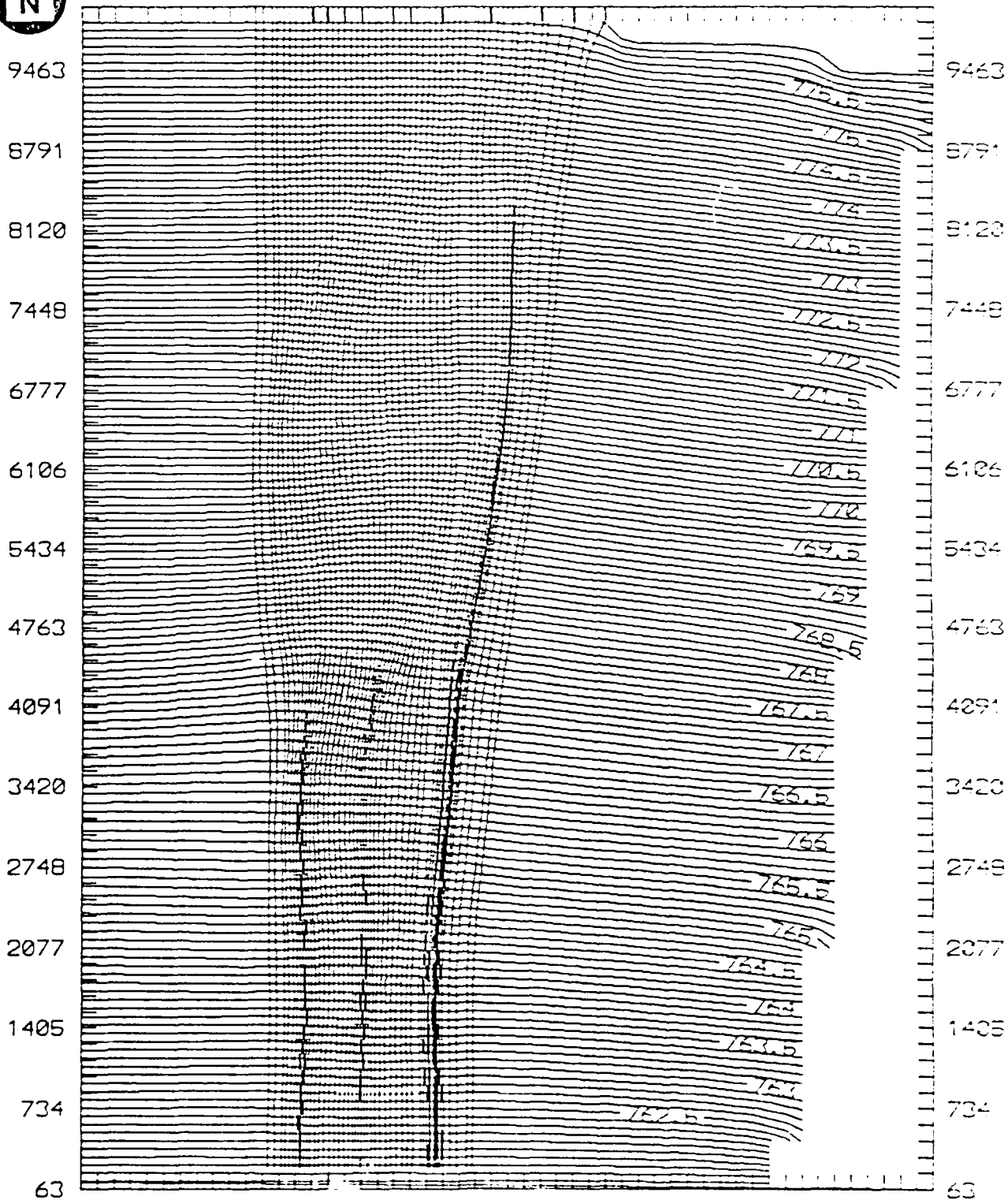


FIGURE J.3-34  
CONTOUR INTERVALS AND PARTICLE TRACKING FOR IRM MODEL FOR LAYER 4  
PROPELLANT BURNING GROUND  
REMEDIAL INVESTIGATION  
BADGER ARMY AMMUNITION PLANT  
ABB Environmental Services, Inc.



TEST 1 LAYER 5 - K = 240 ft/day  
Q = 60 gpm



NOTE: ELEVATION IN FEET MSL

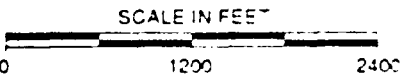
CONTOUR INTERVALS AND PARTICLE TRACKING FOR IRM MODEL FOR LAYER 5

PROPELLANT BURNING GROUND

REMEDIAL INVESTIGATION

BADGER ARMY AMMUNITION PLANT

ABB Environmental Services, Inc.



**Box Model**

**MODFLOW Input Files**

































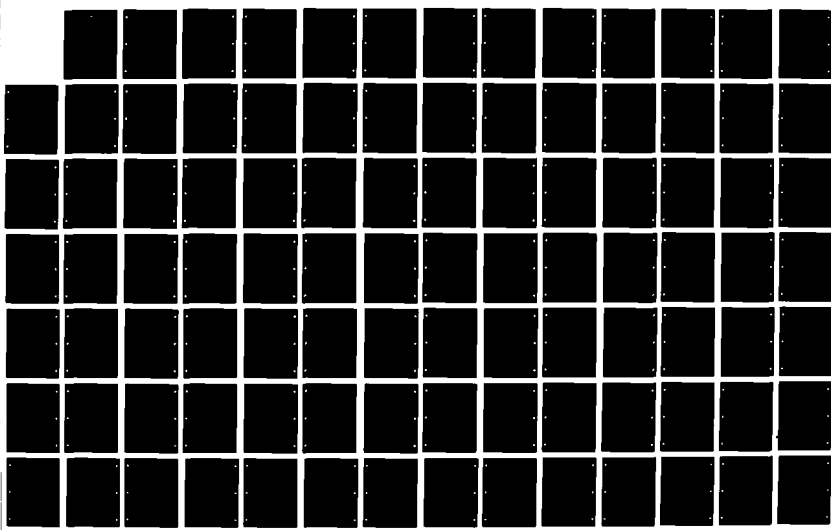
AD-A266 436

REMEDIAL INVESTIGATION BADGER ARMY AMMUNITION PLANT  
BARABOO WISCONSIN VOLUME 3 APPENDICES G THROUGH J(U)  
ABB ENVIRONMENTAL PORTLAND ME 1991 XA-USATHAMA

11/12

UNCLASSIFIED

DAAA15-91-D-0008

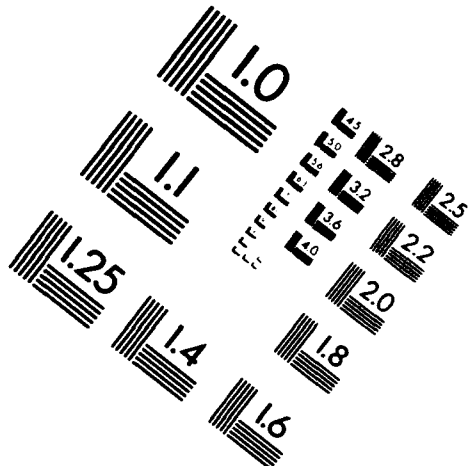
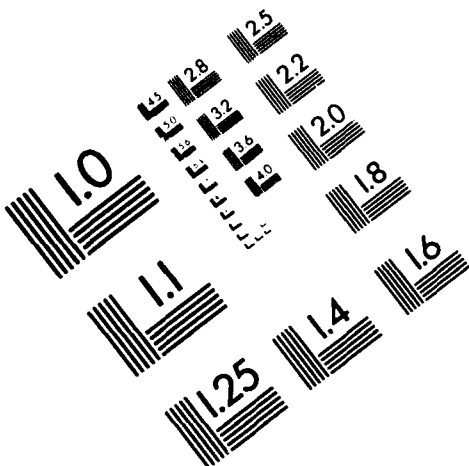




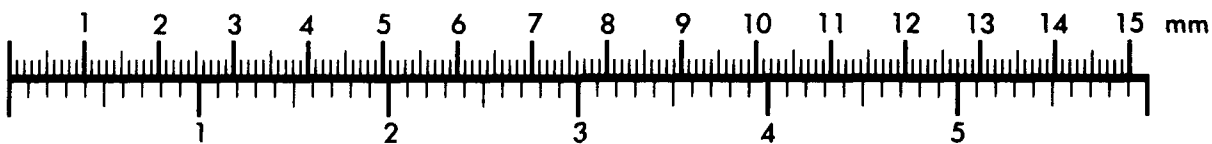
**AIM**

**Association for Information and Image Management**

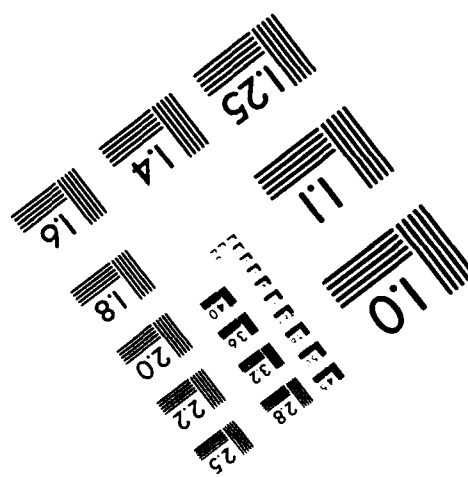
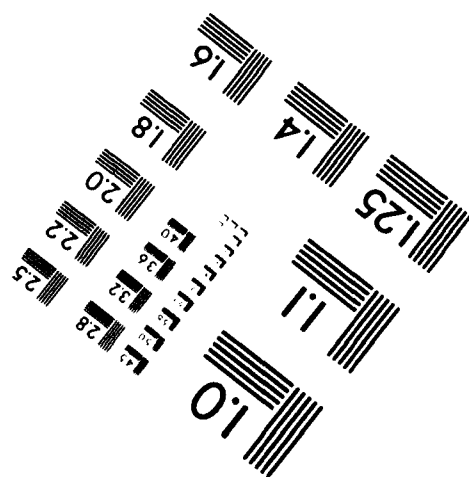
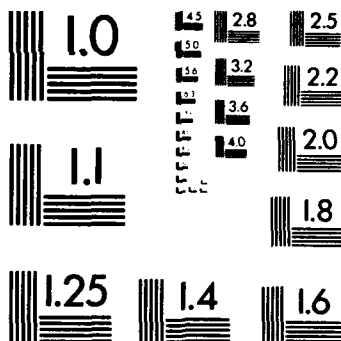
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910  
301/587-8202



Centimeter



Inches



MANUFACTURED TO AIM STANDARDS  
BY APPLIED IMAGE, INC.















































1 50  
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5.0000e+01 5.0000e+01 5.0000e+01 5.0000e+01 5.0000e+01 5.0000e+01 5.0000e+01 5.0000e+01 5.0000e+01 5.0000e+01  
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0 .5310(10E12.4) -1  
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0 1.8182(10E12.4) -1  
0 730.000(10E12.4) -1  
0 150.000(10E12.4) -1  
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0 .8600(10E12.4) -1  
0 675.000(10E12.4) -1  
0 150.000(10E12.4) -1  
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0 1.3950(10E12.4) -1  
0 660.000(10E12.4) -1  
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**Site-Specific Propellant Burning Ground Model**

**MODFLOW Input Files**

















































































































































































































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1	34	13	-8648.00
1	34	25	-8648.00
1	34	37	-8648.00
2	7	45	-2903.00
2	34	37	-2903.00
2	34	25	-2903.00
2	34	13	-2903.00