UNDERGROUND STORAGE TANK SUBSURFACE SITE INVESTIGATION REPORT FORMER UST, BUILDING 1608 SITE

151st AIR REFUELING WING
UTAH AIR NATIONAL GUARD BASE
UTAH AIR NATIONAL GUARD
SALT LAKE CITY, UTAH

JULY 1996

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Sep 1993 the Utah Air National Guard removed a UST + discovered fuel contaminated soil + groundwater. An investigation to determine the extent of the contamination occured October - November 1995. Monitoring wells and soil borings were installed. Contamination was found which warrants continued long term monitoring of the site before state closure is expected.

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LIST OF ACRONYMS

ANG	Air National Guard
ANGRC/CEVR	Air National Guard/Installation Restoration Program Branch
ARW	Air Refueling Wing
ASTM	American Society of Testing Methods
ATHA	Ambient temperature headspace analysis
BEC	Base Environmental Coordinator
BLS	Below Land Surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
BTEXN	Benzene, Toluene, Ethylbenzene, Xylenes, and Naphthalene
BTOC	Below Top of Casing
cm/sec	centimeters per second
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DCE	Dichloroethene
DERR	Division of Environmental Response and Remediation
DPT	Direct-Push Technology
DWR	Department of Wildlife Research
EPA	United States Environmental Protection Agency
° C	Degrees Centigrade
° F	Degrees Fahrenheit
GC	Gas Chromatograph
GW	Groundwater
HSA	Hollow-stem auger
I	Average Hydraulic Gradient
ID	Inside Diameter
IDW	Investigation Derived Waste
IRP	Installation Restoration Program
JP-4	Jet Fuel-4
K	Horizontal Hydraulic Conductivity
LUST	Leaking Underground Storage Tank
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mL	milliliters
MCL	Maximum Contaminant Level
MSAI	Mountain States Analytical, Inc.
MSL	Mean Sea Level
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MW	Monitoring Well
n	net effective porosity
OpTech	Operational Technologies Corporation
PID	Photoionization Detector
PCE	Tetrachloroethene
ppm	parts per million
ppmv	parts per million volume

LIST OF ACRONYMS (Concluded)

PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
RBCA	Risk-Based Correction Action
RBSL	Risk-Based Screening Level
RCL	Recommended Cleanup Level
SSI	Subsurface Site Investigation
TCE	Trichloroethene
TCLP	Toxicity Characteristic Leaching Procedure
TEG	Transglobal Environmental Geosciences
TPH	Total Petroleum Hydrocarbons
TPH-DRO	Total Petroleum Hydrocarbons as Diesel Range Organics
TPH-GRO	Total Petroleum Hydrocarbons as Gasoline Range Organics
TVH	Total Volatile Hydrocarbons
μg/kg	micrograms per kilogram
μg/L	micrograms per liter
USAF	United States Air Force
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
v	velocity
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

This Report presents the results of the Subsurface Site Investigation (SSI) conducted at a former underground storage tank (UST) located north of Building 1608 at the 151st Air Refueling Wing (ARW), Utah Air National Guard (ANG) Base, Salt Lake City, Utah. Due to the presence of petroleum hydrocarbon contamination in soil and groundwater discovered during the removal of the UST (State of Utah leaking UST identifier-Facility ID #4001640, Release Site EIMB) in September 1993, Headquarters, Air National Guard/Installation Restoration Program Branch (ANGRC/CEVR) Compliance authorized Operational Technologies Corporation (OpTech) to conduct an SSI. Phase 1 of the SSI was implemented in October-November 1994. Phase 2 of the SSI was conducted in October-November 1995 to further delineate petroleum contamination.

Phase 1 of the SSI was accomplished by completing the following tasks: (1) collecting 10 soil vapor samples; (2) collecting eight groundwater samples from direct-push technology (DPT) locations (DPT); (3) collecting and analyzing soil samples from six DPT locations; (4) installing three monitoring wells; (5) collecting two rounds of water level measurements and analyzing groundwater samples from the newly installed monitoring wells; and (6) slug testing the monitoring wells. Phase 2 of the SSI was performed by completing the following tasks: (1) collecting and analyzing soil and groundwater samples from 13 DPT locations; (2) installing three monitoring wells; and (3) collecting two rounds of water level measurements and analyzing groundwater samples from the newly installed monitoring wells.

Soil and groundwater samples were analyzed for volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH) as gasoline and diesel ranges. Additionally, due to a suspected solvent plume originating from a separate Installation Restoration Program (IRP) site (IRP Site No. 8) near the subject site, samples were analyzed for halogenated VOCs.

The depth to groundwater at the site is approximately five feet to six feet below land surface (BLS). The groundwater flow direction at the site varies from southwest to southeast. Groundwater flow velocity at the site ranges from 3 to 15 feet per year.

Based on State of Utah Department of Environmental Quality, Division of Environmental Response and Remediation criteria, the site was classified as having Level II environmental sensitivity and subject to the recommended soil cleanup levels (RCLs) for that classification.

Soil samples collected from DPT location UST-002BH (0-12 feet BLS) exhibited TPH (gasoline and diesel) and benzene concentrations exceeding Level II RCLs. One soil sample from DPT

location UST-004BH (0-14 feet BLS) exhibited TPH (gasoline) concentrations exceeding Level II RCLs. The results of the Phase 1 field efforts indicated additional delineation of soil contamination was required.

The November 1994 groundwater sampling round indicated TPH contamination ranging up to 55 micrograms per liter (μg/L) was present in groundwater samples from monitoring wells UST-007MW, UST-008MW, and UST-009MW. No state Maximum Contaminant Levels (MCLs) have been established for TPH (gasoline and diesel), however, 10 mg/L of TPH is considered a guideline value by the state. Benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected only in groundwater samples from monitoring well UST-007MW of which benzene and toluene concentrations exceeded MCLs of 5 μg/L and 700 μg/L, respectively. Groundwater samples collected during the March 1995 groundwater sampling event exhibited concentrations of benzene, toluene, and TPH (gasoline) exceeding MCLs or state guidelines in groundwater samples from monitoring well UST-007MW, and benzene exceeding MCLs in groundwater samples collected from monitoring well UST-009MW. Based on the results of the Phase 1 groundwater analyses, the dissolved contaminant plume had not been delineated sufficiently in either the downgradient or upgradient direction.

Soil samples from DPT location UST-019GP (4-6 feet and 6-8 feet BLS) exhibited TPH (gasoline) and benzene at concentrations exceeding RCLs of 100 milligrams per kilogram (mg/kg) and 0.3 mg/kg, respectively. One soil sample from UST-010MW (10-11.5 feet BLS) had TPH (diesel) exceeding RCLs (300 mg/kg). One soil sample from UST-014GP (6-8 feet BLS) had TPH (oil and grease) exceeding RCLs (600 mg/kg); due to differences in chemical composition, TPH (oil and grease) contamination detected in this sample is considered not to be related to the UST release. Screening samples from UST-011GP (4-6 feet and 9-11 feet BLS), UST-012GP (4-6 feet BLS), and UST-019GP (4-6 feet and 6-8 feet BLS) had TPH (gasoline) and/or benzene exceeding RCLs. The Phase 2 sampling completed delineation of the soil contamination except for the area east of UST-011GP and UST-012GP where benzene and TPH (gasoline) exceed RCLs. Buildings located in this area prevent further investigation.

Groundwater screening samples from DPT locations UST-012GP, UST-013GP, UST-014GP, UST-015GP, UST-017GP, and UST-019GP all had benzene at concentrations exceeding the MCL. The concentrations ranged from 5.4 to 58.4 μg/L. TPH (gasoline) was detected at concentrations exceeding state guidelines of 10 mg/L in groundwater samples from DPT location UST-012GP. No DPT groundwater samples that were analyzed by the fixed-base laboratory exhibited concentrations exceeding MCLs or state guidelines. Benzene was detected above its MCL in the duplicate from the second round of Phase 2 groundwater sampling at UST-011MW

(7.8 μg/L). Groundwater samples collected from monitoring well UST-012MW during October 1995 exhibited TPH (diesel) of 19.9 mg/L greater than state guidelines, however, second round sampling conducted in November 1995 showed concentration of only 3.5 mg/L. Based on the information gathered during Phase 1 and Phase 2 of the SSI, the extent of groundwater contamination has been delineated.

Soil and groundwater analytical results were compared with Utah Tier I Risk-Based Corrective Action (RBCA) site classification and risk-based screening level (RBSL) criteria. The overall RBCA site classification level is Level 2. Contaminated soil exhibiting TPH (gasoline) and/or benzene concentrations greater than respective RBSLs of 1,500 mg/kg and 0.9 mg/kg is restricted to an area near the northwest corner of Building 1608. It is probable that contaminated soil extends underneath a portion of the building. Contaminated groundwater exhibiting TPH (gasoline) and/or benzene concentrations greater than respective RBSLs of 10 mg/L and 0.3 mg/L is indicated in an area extending approximately 80 feet north of Building 1608 and overlapping the area of soil impacted at levels greater than RBSLs. Based on a first-order evaluation of the site the only potential receptor pathway is for vapor migration from impacted soil and groundwater into overlying Building 1608.

Based on the results of the investigation, recommendations for the site are as follows:

- Semiannual groundwater monitoring and sampling for BTEX and TPH (gasoline and diesel range organics) should be performed on monitoring wells at the site for a period up to 24 months; and

- An ambient air sampling event should be conducted in Building 1608 to determine the presence or potential for harmful hydrocarbon vapors.

At the end of the groundwater monitoring period, an assessment of the groundwater data should be made to determine if further monitoring, risk-based assessments, or corrective action is warranted. If groundwater contaminant concentrations exhibit stabilization or a decreasing trend over the monitoring period, the site should be considered for closure without further action.

Further activities related to solvent compounds in the soil and groundwater associated with adjacent IRP Site No. 8 will be addressed in a separate Remedial Investigation under the Comprehensive Environmental Response, Compensation, and Liability Act.

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SECTION 1.0 INTRODUCTION

This Subsurface Site Investigation (SSI) Report presents the results of investigation activities conducted at the 151st Air Refueling Wing (ARW), Utah Air National Guard (ANG) Base, Salt Lake City, Utah. On 3 September 1993, a 30-year old, 2,000-gallon underground storage tank (UST) (state leaking UST identifier – Facility ID #4001640, Release Site EIMB) was removed, along with the associated piping (151st ARW/EM, 1993). The tank was located on the north side of Building 1608, which is situated on the south end of the Utah ANG Base, on the northeast corner of 2nd Street and F Street (Figure 1.1). The tank was used for jet fuel (JP-4) storage at the Aerospace Ground Equipment Facility (151st ARW/Environmental Management (EM) Office, 1993). The results of the investigation indicated petroleum contamination existed in site soils at levels exceeding the Utah Leaking Underground Storage Tank (LUST) site Level II Recommended Cleanup Levels (RCLs) for soil and state MCLs for groundwater contamination.

SSI activities detailed in this Report were conducted to delineate the extent of detected contamination, and to provide information on contaminant levels for assessing Remedial Action alternatives at the site. The SSI was conducted in two phases. Phase 1 of the work was performed in October and November 1994 and included a soil vapor survey, direct-push technology (DPT) groundwater screening survey, DPT soil sampling, and the installation and sampling of groundwater monitoring wells. Slug testing and re-sampling of the monitoring wells occurred in March 1995. Phase 2 of the work was performed in October 1995 and included DPT soil and groundwater sampling and the installation and sampling of three additional monitoring wells. The newly installed monitoring wells were re-sampled in November 1995.

1.1 OBJECTIVE

Delineation of petroleum-related soil and groundwater contamination to Level II RCLs and MCLs was the primary objective of this investigation. Soil and groundwater samples were also analyzed for solvent compounds and their degradation products to provide additional information for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) investigative work at adjacent IRP Site No. 8. This data was collected as additional information for nearby Installation Restoration Program (IRP) sites and will be reported in this document. However, the solvent contamination is not related to the Former UST, Building 1608 and no interpretation of this data will be presented in this SSI Report.

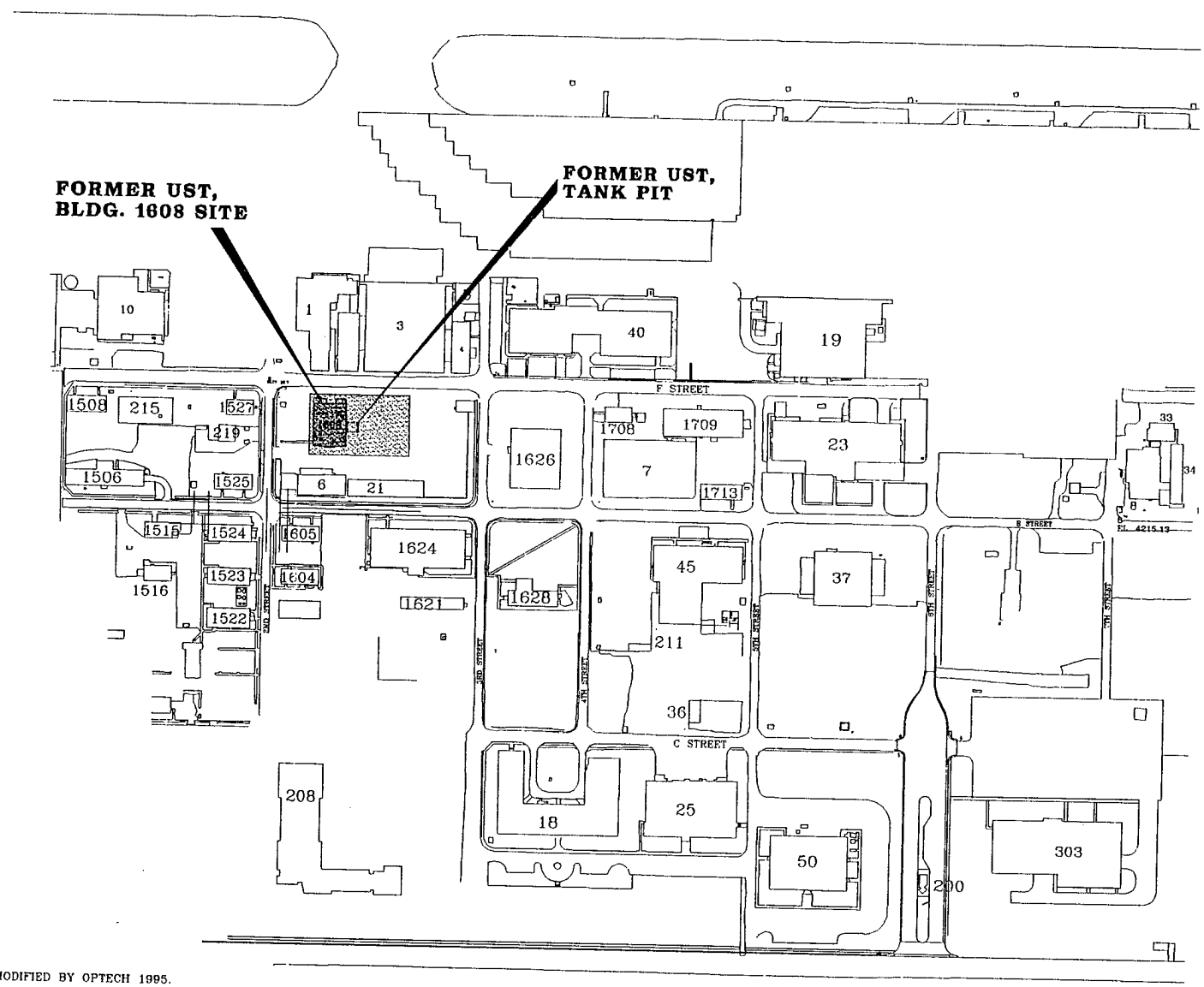

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FIGURE 1.1

SALT\SALTBAS2

LOCATION OF FORMER UST, BUILDING 1608 SITE

151st ARW, Utah ANG Base
Salt Lake City, Utah

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

APR

1.2 FACILITY DESCRIPTION

The 151st ARW of the Utah ANG is located on the east side of the Salt Lake City International Airport as illustrated in Figure 1.2. The base and airport are located within city limits southeast of the Great Salt Lake and on the western edge of the Jordan River bench. The base property, which is leased from the Airport, occupies approximately 130 acres. The Utah ANG was founded on 18 November 1946, as a fighter-bomber unit. The mission has changed several times over the years and the 151st Air Refueling Wing, which provides aerial refueling support to operational United States Air Force (USAF) and ANG mission aircraft, currently occupies the facility.

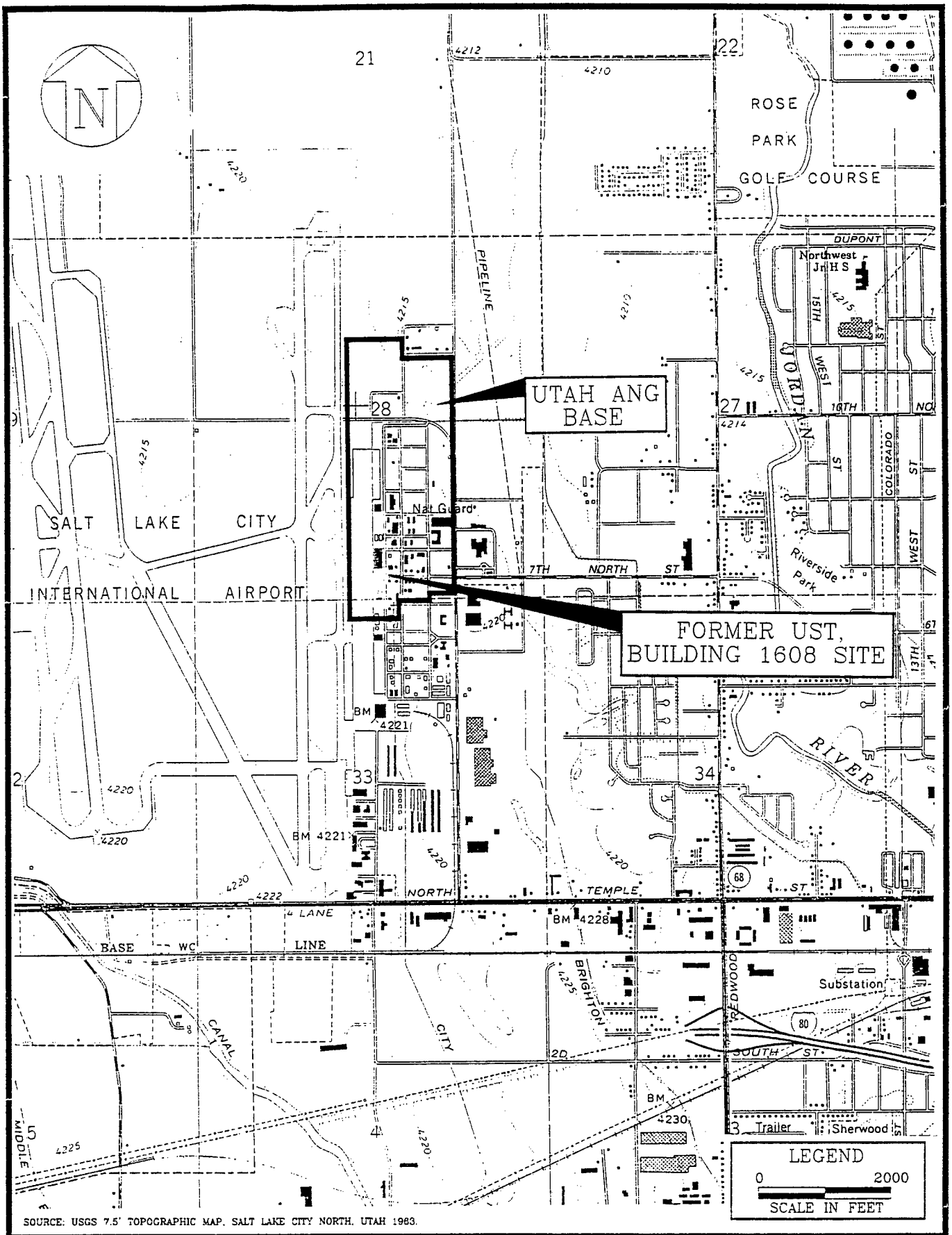
1.2.1 Former UST, Building 1608 Site – Location and Description

The Former UST, Building 1608 Site was located immediately north of Building 1608 as shown on Figure 1.3. The 2,000-gallon tank was approximately 30 years old and, according to base personnel, was used to store jet fuel-4 (JP-4).

1.3 PREVIOUS INVESTIGATIONS

The tank was removed on 3 September 1993 as part of the ANG UST removal program. Evidence of a petroleum fuel release was noted upon removal of the UST and reported immediately to the State of Utah Division of Environmental Response and Remediation (DERR). At the time of removal, the tank appeared intact without visual evidence of pitting, holes, or leaking. The tank and product line had passed a tightness test on 20 February 1993 (Lt. Jack Wall, 1994). Soil samples were collected from the tank pit in accordance with Utah State regulations for UST closure. Soils in the tank pit were stained at the time of removal, and there was hydrocarbon odor present. The piping at the tank site was wrapped in tar and appeared to be in good condition. During the tank removal, groundwater was encountered in the tank pit at approximately seven feet below land surface (BLS), and an apparent hydrocarbon sheen was observed. The thickness of the sheen was less than the state reporting limit of 1/8 inch.

Two samples of groundwater standing in the tank pit excavation were collected and analyzed for total petroleum hydrocarbons (TPH) using United States Environmental Protection Agency (USEPA or EPA) SW-846 Method 8015 (modified) and for benzene, toluene, ethylbenzene, xylene, and naphthalene (BTEXN) using EPA 602, SW-846 Method 8020 (Table 1.1). Utility Testing Laboratory of Salt Lake City, Utah performed the analysis. Figure 1.3 shows the locations of where the groundwater samples were collected.



SOURCE: USGS 7.5' TOPOGRAPHIC MAP, SALT LAKE CITY NORTH, UTAH 1963.

FIGURE 1.2

SALTLAKE\TOPO

LOCATION OF UTAH ANG BASE

151st ARW, Utah ANG Base
Salt Lake City, Utah

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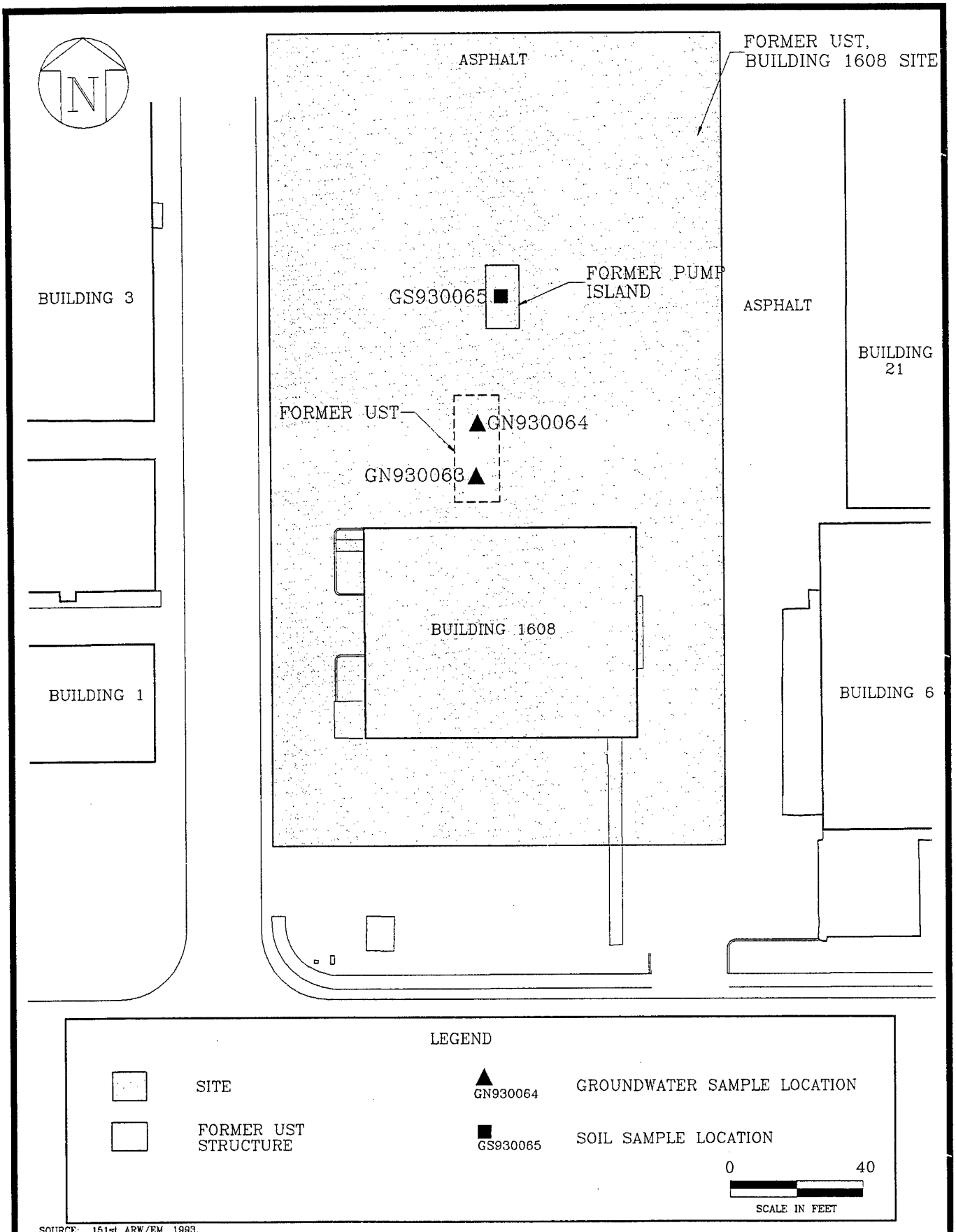

SOURCE: 151st ARW/EM, 1993.

FIGURE 1.3

SALT\SAMPLES

LOCATION OF PREVIOUS GROUNDWATER & SOIL SAMPLES AT FORMER UST, BUILDING 1608 SITE

151st ARW, Utah ANG Base
Salt Lake City, Utah

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Table 1.1
Excavation Water Sample Analysis Results
UST Removal Investigation – 3 September 1993
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample Number	TPH (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylene (ppb)	Naphthalene (ppb)
GN930063	310,000	3,670	502	1,400	4,770	467
GN930064	216,000	5,990	3,540	854	12,030	545
RCL	500	5	1,000	700	10,000	20

RCL – Recommended Cleanup Level.
TPH – Total Petroleum Hydrocarbons.
ppb – parts per billion.
UST – Underground Storage Tank.
Source: 151st ARW/EM: Underground Storage Tank Closure and Site Assessment, 1993.

One soil sample was collected from beneath the former pump island dispenser site. The sample was analyzed for TPH, using EPA SW-846 Method 8015 (modified) and BTEXN using SW-846 Method 8020. Utility Testing Laboratory of Salt Lake City, Utah performed the analysis. Table 1.2 summarizes the results of the soil sample analyses. Two soil samples were collected from the tank pit and former pump island and soil types were described using American Society of Testing Materials (ASTM) Method D2484-90. The samples are described as consisting of elastic silt with sand. Utility Testing Laboratory of Salt Lake City, Utah, performed the analyses. Table 1.3 summarizes these results.

Table 1.2
Former Pump Island Soil Sample Analysis Results
UST Removal Investigation
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample Number	TPH (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylene (ppm)	Naphthalene (ppm)
GS930065	8,500	6.1	35.8	14.4	286	5.97

TPH – Total Petroleum Hydrocarbons.
ppm – parts per million.
Source: 151st ARW/EM: Underground Storage Tank Closure and Site Assessment, 1993.

Laboratory analysis of soil and groundwater samples collected from the tank pit and fuel dispenser island confirmed the presence of TPH, benzene, and naphthalene at concentrations exceeding State of Utah Level II cleanup criteria. Because of immediate safety concerns posed by leaving the pit open, the decision was made to backfill the UST pit without initiating abatement measures. Due to the levels of contamination found at this site, an SSI and corrective action was determined to be warranted by the Utah DERR, UST Division. Subsequently,

Table 1.3
Soil Sample Analysis Results – Uniform Soil Classification
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample Number	Area	Sample Depth (feet BLS)	Soil Classification[1]
GS930066	JP-4 Tank Pit	8	Elastic Silt w/Sand (MH)
GS930067	JP-4 Pump Island	4	Elastic Silt w/Sand (MH)

[1]ASTM Method D2484-80.
feet BLS – feet Below Land Surface.
MH – elastic silt.

Source: 151st ARW/EM: Underground Storage Tank Closure and Site Assessment, 1993.

Headquarters Air National Guard (ANGRC) authorized an SSI to determine the extent and magnitude of contaminated soil and groundwater at the site.

1.4 ENVIRONMENTAL SENSITIVITY

1.4.1 Physiography and Climate

The Utah ANG Base is situated on flat-lying sediments located approximately eight miles east-southeast of the present Great Salt Lake shoreline, and one mile west of the Jordan River. An inland estuary and marsh of the Great Salt Lake is present approximately two miles northwest of the base. The man-made City Drain crosses the base property and is a conveyance for storm runoff. The location of these features are shown on Figure 1.4 (Engineering-Science, 1994). The annual precipitation at the base is 12 inches per year (OpTech, 1995).

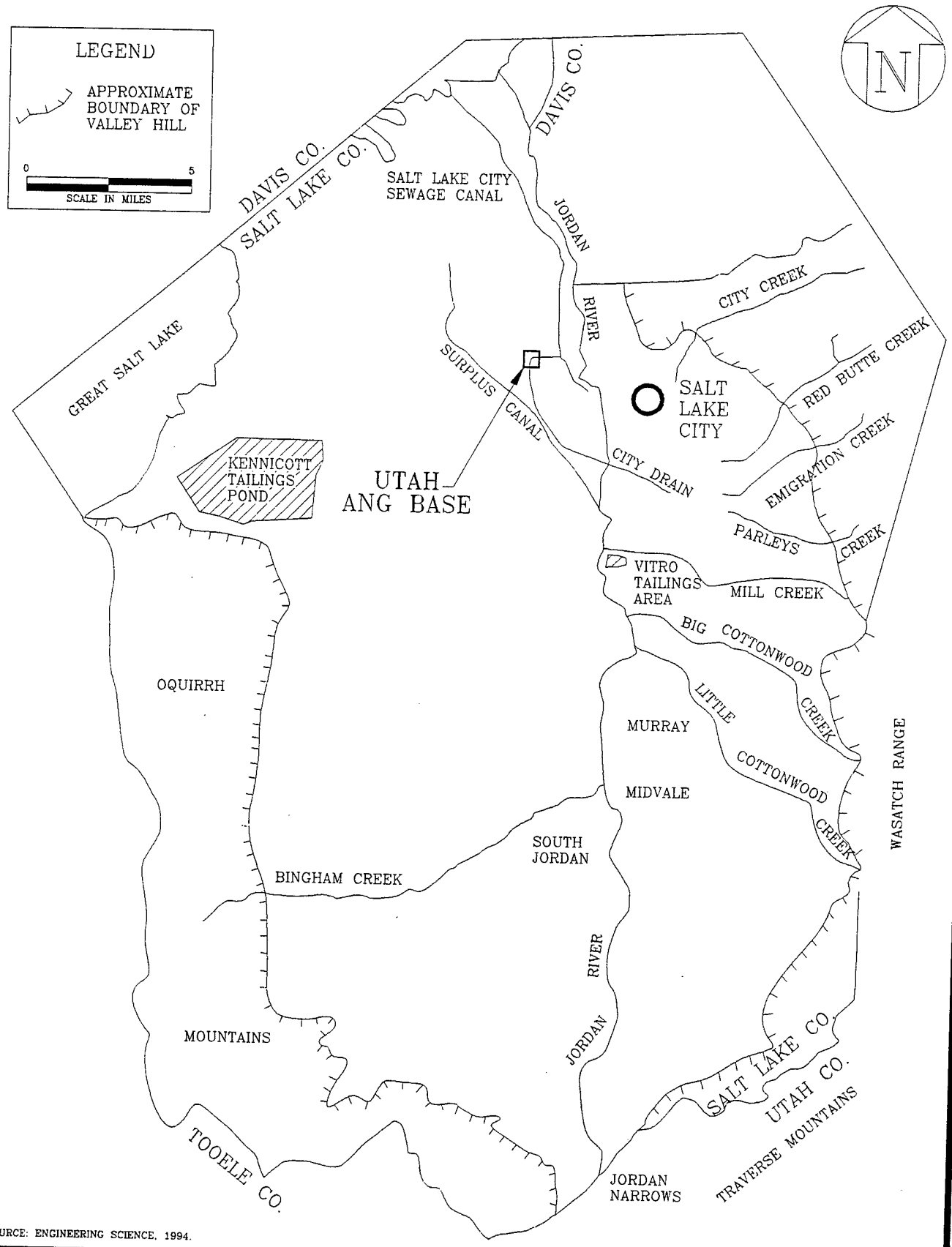
1.4.1.1 Population Statistics

There are no permanent residents at the base. Residential population within one mile of the base as determined by Geoquest, Inc., in Littleton, Colorado is as follows:

0 to 1/4 mile:	2	
1/4 to ½ mile:	624	
½ to 1 mile:	4,568	(Source: Geoquest, 1995)

1.4.2 Regional and Local Geology

The base is situated in the Salt Lake Valley, a broad basin bounded on the east by the Wasatch Mountains; to the west are the Oquirrh Mountains (see Figure 1.4).



SOURCE: ENGINEERING SCIENCE, 1994.

FIGURE 1.4

SALTLAKE\FEATURES

INDEX MAP OF SURFACE FEATURES IN SALT LAKE COUNTY, UTAH
151st ARW, Utah ANG Base
Salt Lake City, Utah

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Basin and Range extensional forces created horst (the Wasatch and Oquirrh Mountains) and graben (Salt Lake Valley) features that represent the present day structural setting. The Salt Lake Valley is filled with unconsolidated alluvium deposits that extend to depths in excess of 2,000 feet. The alluvium deposits represent the deposition of ancient lakes, stream activity, and the erosion of adjacent mountains. The shallow subsurface consists of fine-grained delta and floodplain sediments, and coarse-grained shoreline or stream channel sediments. A map of Surficial Geologic units is shown on Figure 1.5. Generally, the stratigraphic distribution of the Salt Lake Valley consists of near surface deposits of silts, sands, and clays to a depth of approximately 20 to 30 feet. This is underlain by a clay layer extending approximately 20 feet to 75 feet BLS. This clay layer is underlain by a series of interbedded sands and clays (Engineering-Science, 1994).

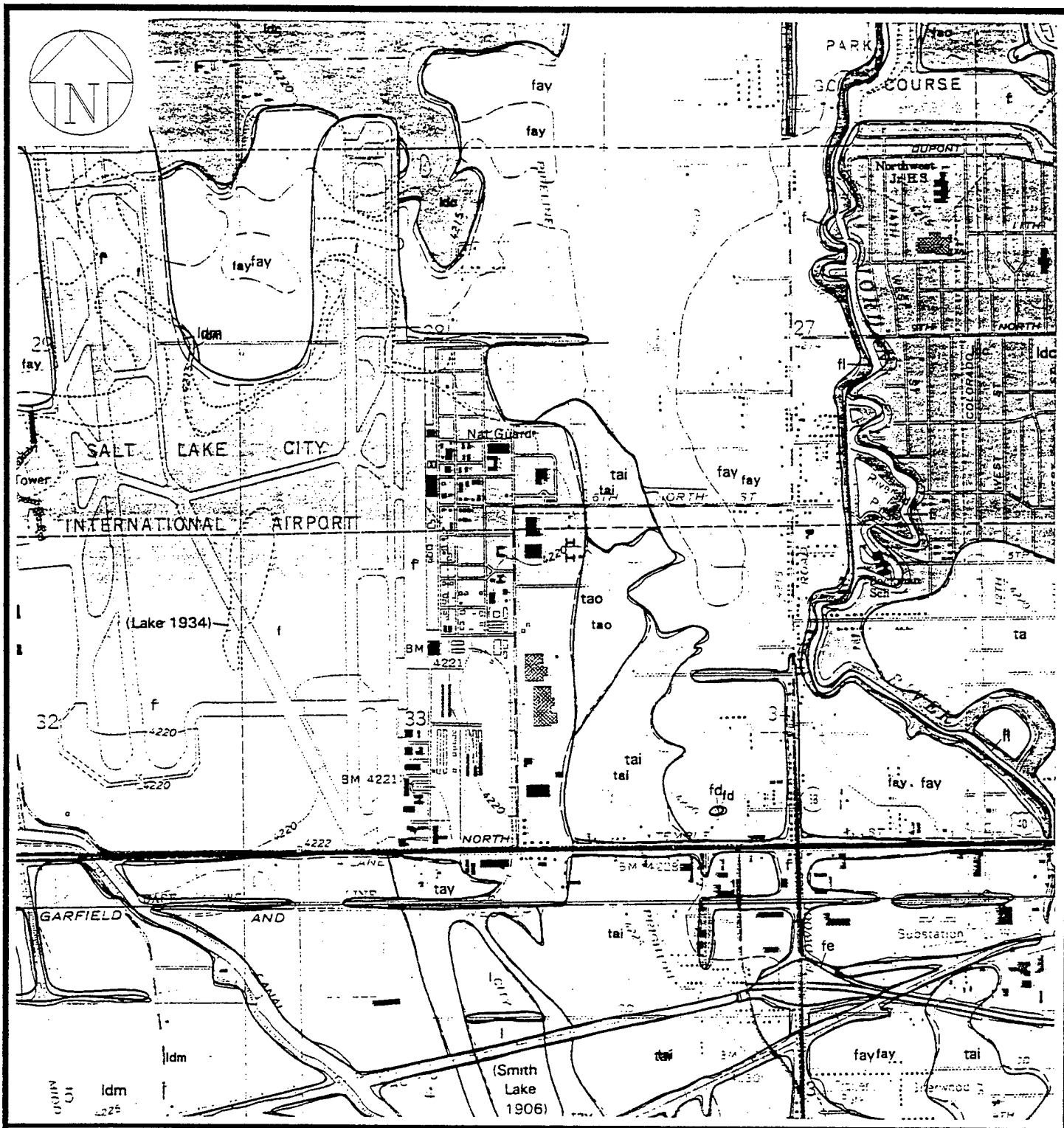
1.4.3 Soils

According to the United States Department of Agriculture (USDA), Soil Conservation Service (1974), most of the surface soils at the base consist of miscellaneous fill or man-made material. The surficial soils are is a natural silty clay loam in the extreme northern end of the base. Soil borehole sampling, conducted by Engineering-Science for the IRP Site Investigation, indicated that much of the surface soil in the northern portion of the base was disturbed as a result of base construction, and could also be considered fill or man-made material (Engineering-Science, 1994). Figure 1.6 shows the distribution of surface soils at the base.

1.4.4 Hydrogeology

The Utah ANG Base is underlain by a shallow unconfined aquifer that is present from approximately 5-10 feet BLS to a depth of up to 50 feet BLS. This is underlain by a confining unit of primarily clay that is approximately 40-70 feet thick. Below the confining unit is a deeper confined aquifer (Engineering Science, 1994).

The regional groundwater flow direction within the shallow unconfined and principal confined aquifers in the general area of the base in 1971 was reported to be predominantly to the north-northwest. The regional groundwater flow direction in 1982 was northeasterly towards the Jordan River in the shallow unconfined aquifer, except in the northwest part of the valley, where it moved towards the Great Salt Lake. Groundwater flow in the principal confined aquifer is generally north for most of Salt Lake Valley (Engineering-Science, 1994).



LEGEND

f	–	Artificial fill (clay)	tai	–	Intermediate unit (silty sand to sandy silt and clay)
fd	–	Dump	l	–	Modern Dry Lake or Marsh Deposit (Holocene)
fl	–	Levees, natural and artificial (clay to silt)	fdc	–	Delta Distributary–channel Fill (sand, silt, clay)
fay	–	Flood–plain Alluvium (sand to clay)	ldc	–	Clay (Holocene)
fao	–	Older unit (sand to sandy silt)	ldm	–	Silt and sand (Holocene)
tao	–	Older unit (silt and sand)			

0 2000

SCALE IN FEET

SOURCE: U.S. GEOLOGICAL SURVEY SURFICIAL GEOLOGIC MAP OF THE SALT LAKE CITY NORTH QUADRANGLE, DAVIS AND SALT LAKE CO. UTAH.

FIGURE 1.5

SALT\GEO

SURFICIAL GEOLOGY MAP

161st ARW, Utah ANG Base
Salt Lake City, Utah

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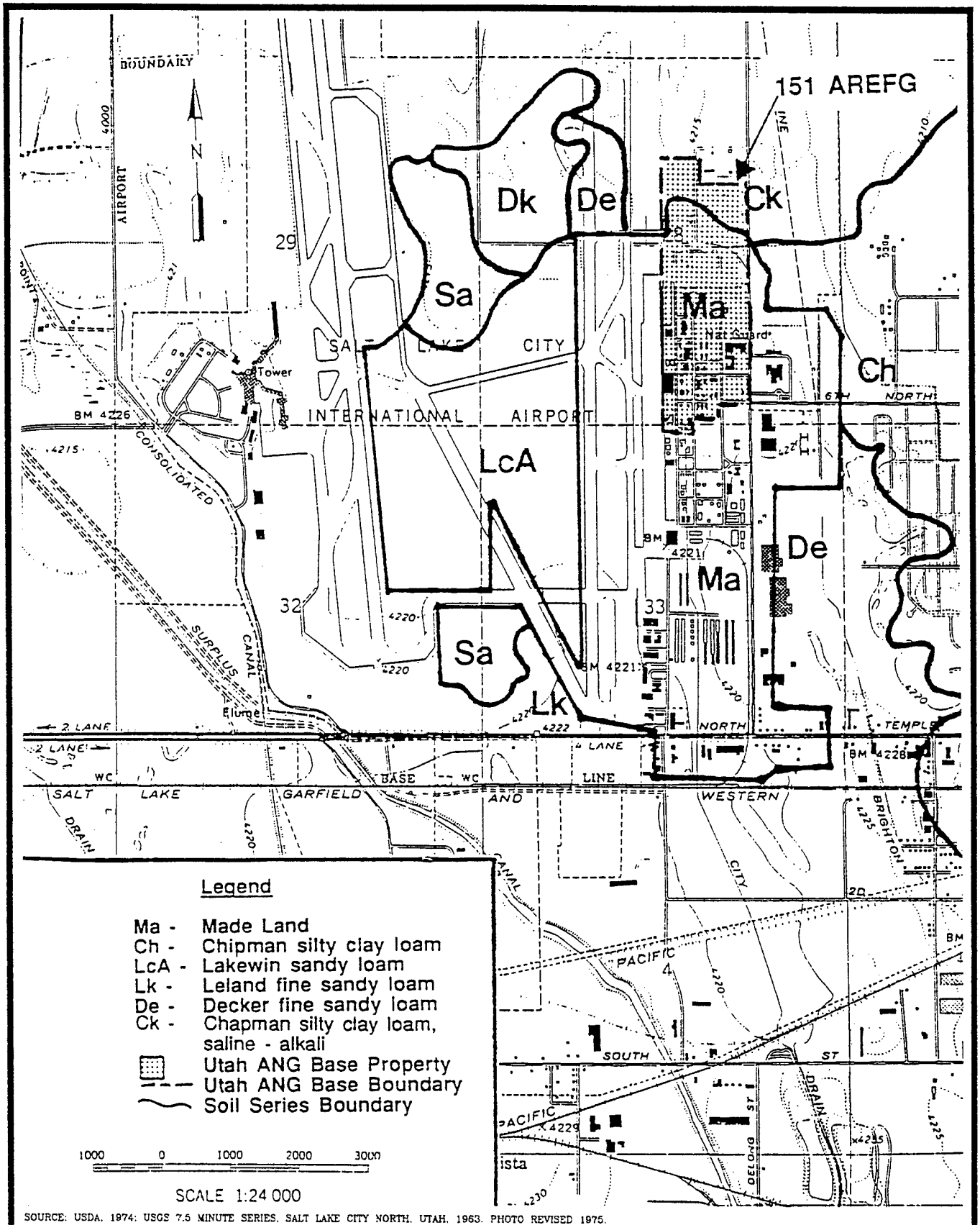

SOURCE: USDA, 1974; USGS 7.5 MINUTE SERIES, SALT LAKE CITY NORTH, UTAH, 1963, PHOTO REVISED 1975.

FIGURE 1.6

SALT\SOILS

SURFACE SOIL MAP

151st ARW, Utah ANG Base
Salt Lake City Utah

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Figures 1.7 and 1.8 show historical groundwater elevation data for the base on 28 December 1992 and 16 March 1993 and 19 July, 1995, respectively (Engineering-Science, 1994 and Parsons Engineering Science, 1995). Groundwater level measurements made in March 1993 indicate a groundwater flow direction on the southern portion of the base to the northwest, while the groundwater flow direction on the northern portion of the base is to the southwest. Groundwater level measurements made in July 1995 show a similar trend. Evaluation of these trends indicates groundwater flows towards a canal transecting the base from east to west that indicates a groundwater convergence.

1.4.5 Groundwater Wells

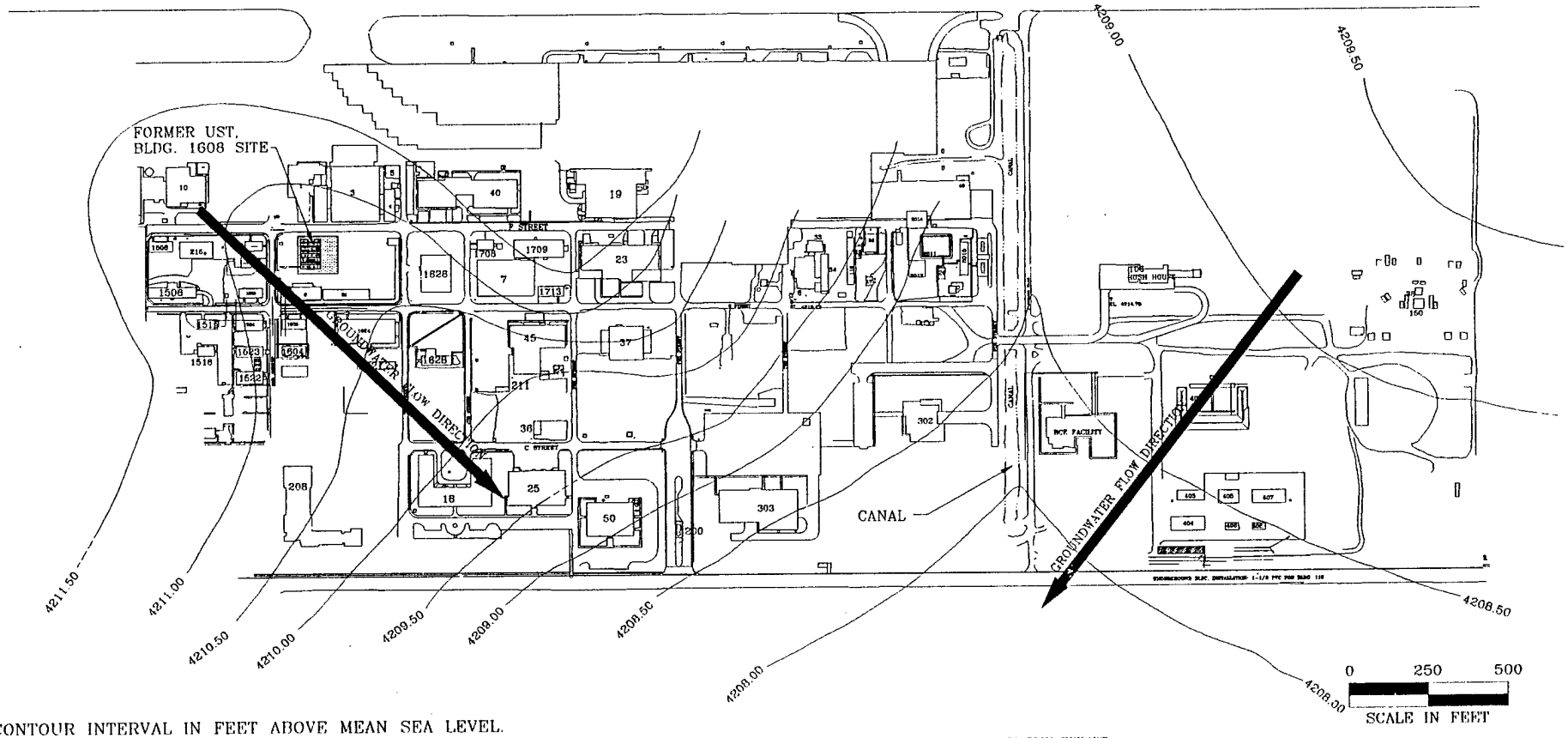
Groundwater accounts for approximately 15% of the water supply for Salt Lake City. A search of the Utah Division of Water Rights water well files showed a total of 17 water wells (15 domestic/irrigation and 2 permanently sealed/abandoned) within a 1-mile radius of the base perimeter (OpTech, 1995). No listed water wells were found within a 1/4-mile radius of the subject site (Figure 1.9). Table 1.4 shows the depths of all wells located within a 1-mile radius.

1.4.6 Surface Water

The base is located near two principal surface water features; the Jordan River, located about one mile east of the base, and the Great Salt Lake, located approximately eight miles west-northwest of the base. Salt Lake City obtains about 65% of the municipal water supply from Wasatch Mountain Range canyon streams, about 20% from surface reservoirs, and an additional 15% from springs and wells. An additional surface water feature is the City Drain, an open unlined canal throughout most of its course, and which originates approximately eight miles southeast of the base. The City Drain runs across the base from west to east and eventually discharges into the Salt Lake City Sewage Canal, as shown in Figure 1.4 (Engineering-Science, 1994).

1.4.7 Underground Utilities

Underground utilities at the site consist of services for natural gas, water, telephone, and other communications, sanitary sewerage, and storm water drainage. Reportedly, base underground utilities in the area of the subject site are located above the groundwater table. The locations of underground utilities, as determined by base engineering plans, are shown on Figure 1.10.



CONTOUR INTERVAL IN FEET ABOVE MEAN SEA LEVEL.

SOURCE: ENGINEERING SCIENCE, 1994: 151st AIR REFUELING WING, UTAH AIR NATIONAL GUARD, CITY INTERNATIONAL AIRPORT, SALT LAKE CITY, UTAH: SITE INVESTIGATION REPORT.

FIGURE 1.7

SALTLAKE\SALTBASE

BASEWIDE GROUNDWATER FLOW DIRECTION 16 MARCH 1993

151st ARW, Utah ANG Base
Salt Lake City, Utah

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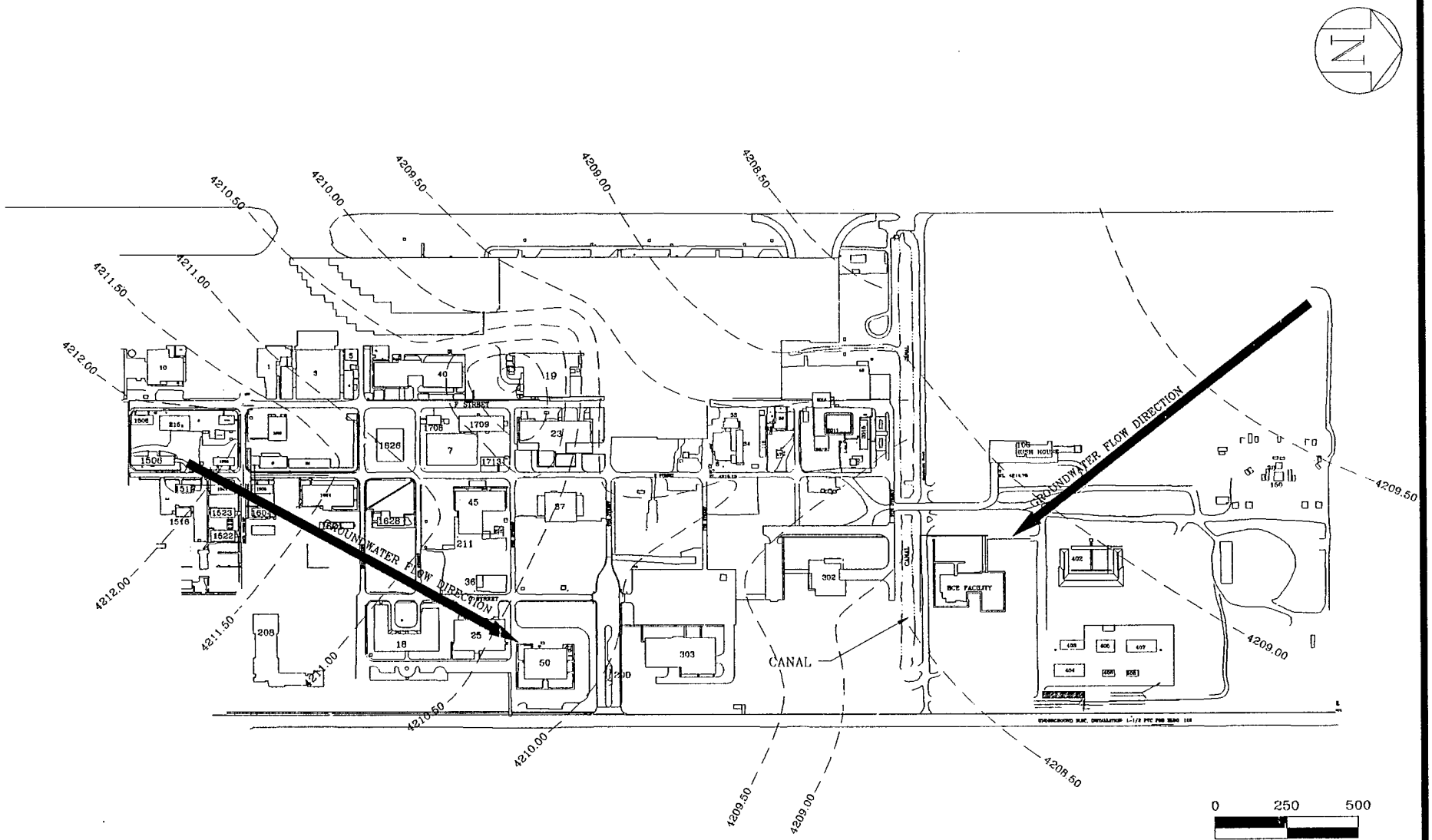

CONTOUR INTERVAL IN FEET ABOVE MEAN SEA LEVEL.

SOURCE: PARSONS ENGINEERING SCIENCE, 1995.

FIGURE 1.8

SALTLAKE\SALTBASE

BASEWIDE GROUNDWATER FLOW DIRECTION 19 JULY 1995

151st ARW, Utah ANG Base
Salt Lake City, Utah

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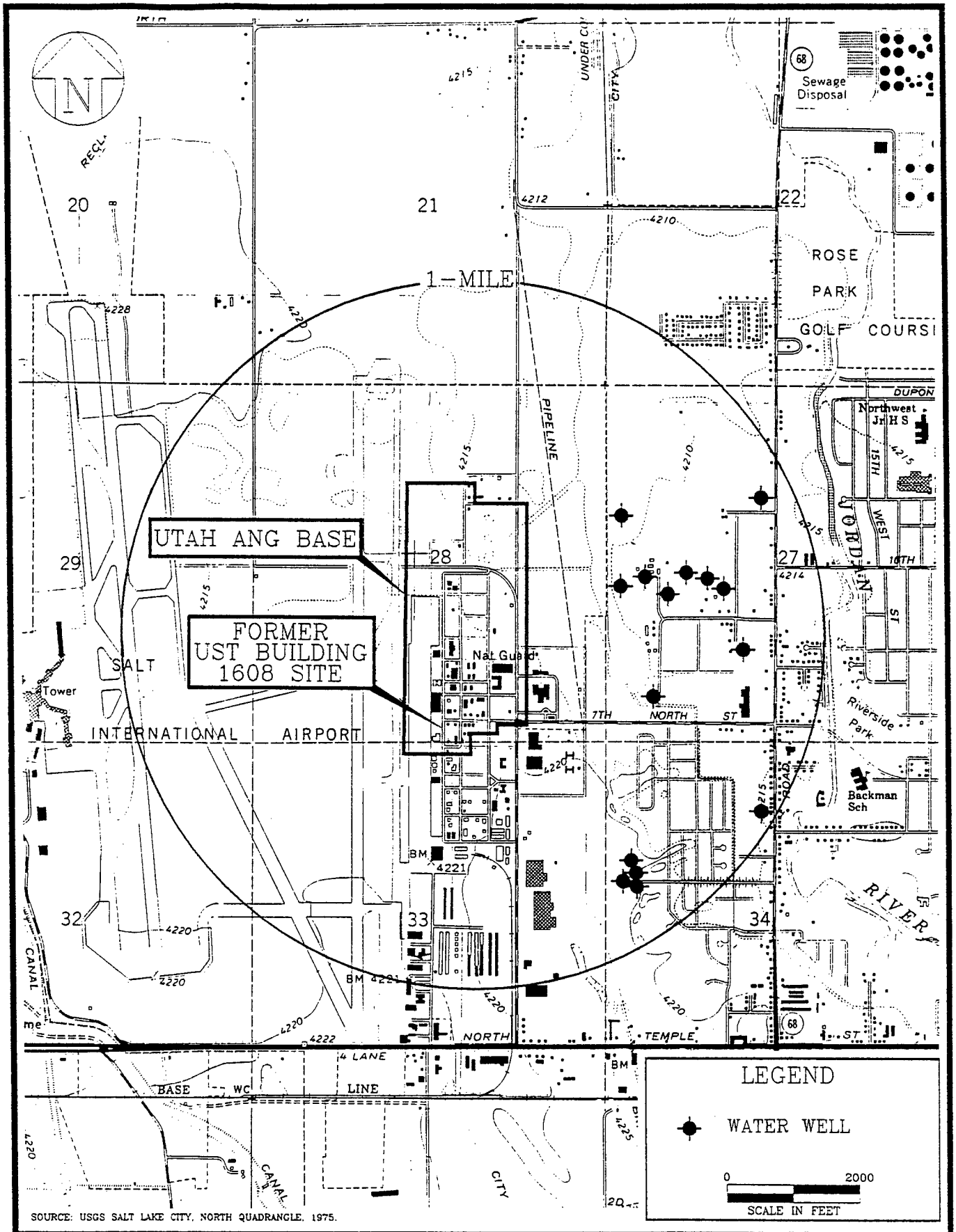

FIGURE 1.9

SALT\SALT

LOCATION OF WATER WELLS WITHIN
A 1-MILE RADIUS OF BASE
151st ARW, Utah ANG Base
Salt Lake City Utah

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Table 1.4
Water Wells Within a 1-Mile Radius
151st ARW, Utah ANG Base, Salt Lake City, Utah

Well Location Description	Water Encountered (feet BLS)	Total Depth (feet)	Static Water Level (feet BLS)	Well Yield (GPM)
S34/T1N/R1W: NW cor/2,315'S/413'E	110	110	Unk	10
S34/T1N/R1W: NW cor/1,965'S/448'E	Unk	183	Unk	40
S34/T1N/R1W: NW cor/2,292'S/358'E	Unk	126	Unk	30
S34/T1N/R1W: N1/4 cor/4,112'E/1,213'S	Unk	398	Unk	8
S34/T1N/R1W: NW cor/2,315'S/413'E	303	350	Unk	8
S34/T1N/R1W: NW cor/1,600'S/3,960'E*	NA	NA	NA	NA
S34/T1N/R1W: NW cor/6,105'S/3,960'E*	NA	NA	NA	NA
S27/T1N/R1W: SW cor/600'N/780'E	60	60	9	Unk
S27/T1N/R1W: N1/4 cor/2,090'S/150'E	462	576	Unk	7
S27/T1N/R1W: W1/4 cor/1,808.5'E/307.5'S	Unk	164	Unk	35
S27/T1N/R1W: W1/4 cor/12.5'S/1,260'E	264	275	Unk	18
S27/T1N/R1W: W1/4 cor/253'S/71.7'E	220	225	Unk	3
S27/T1N/R1W: W1/4 cor/307.5'S/1,808.5'E	Unk	228	Unk	16
S27/T1N/R1W: SE cor of NW1/4	197	200	Unk	6
S27/T1N/R1W: W1/4 cor/1,260'E/175'S	Unk	135	Unk	5
S27/T1N/R1W: W1/4 cor/135'S/1,260'E	445	460	Unk	35
S27/T1N/R1W: SW cor/1,805'N/1,926'E	241	249	Unk	15

* – Well was permanently sealed and abandoned.

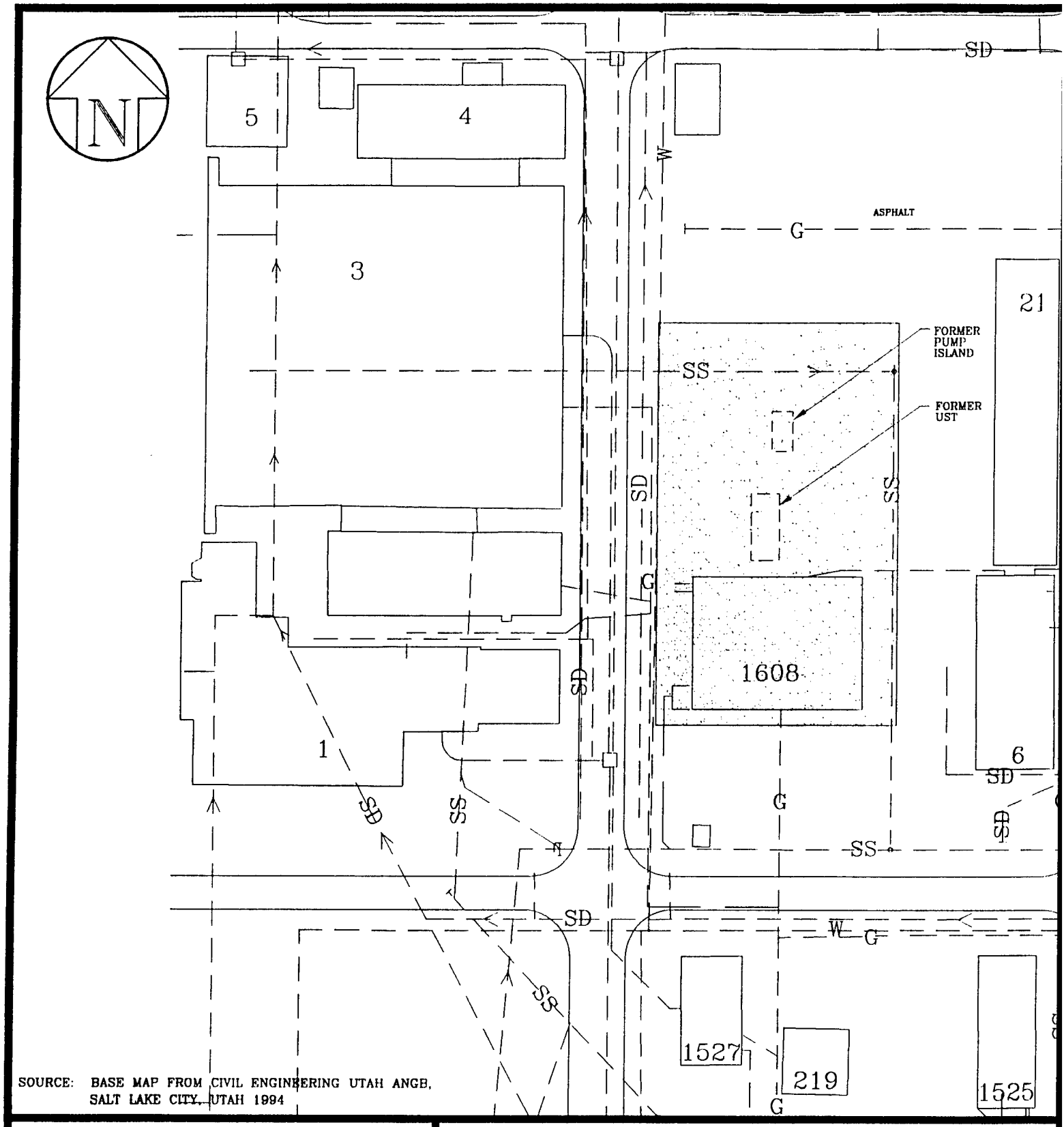
BLS – Below Land Surface.
GPM – Gallons Per Minute.

UNK – Unknown.
NA – Not Applicable.

The former UST tank pit is approximately 30 feet from the nearest underground utility, a communications (telephone) line entering the northwest corner of Building 1608.

1.5 FORMER UST, BUILDING 1608 SITE RANKING

The State of Utah Department of Environmental Quality, Division of Environmental Response and Remediation has released a memorandum entitled Use of the Guideline Document for Estimating Numeric Cleanup Levels for Petroleum-Contaminated Soil at Underground Storage Tank Release Sites, which is to be used to determine the necessary level of cleanup required for a leaking petroleum UST LUST site.



SOURCE: BASE MAP FROM CIVIL ENGINEERING UTAH ANGB, SALT LAKE CITY, UTAH 1994

FIGURE 1.10

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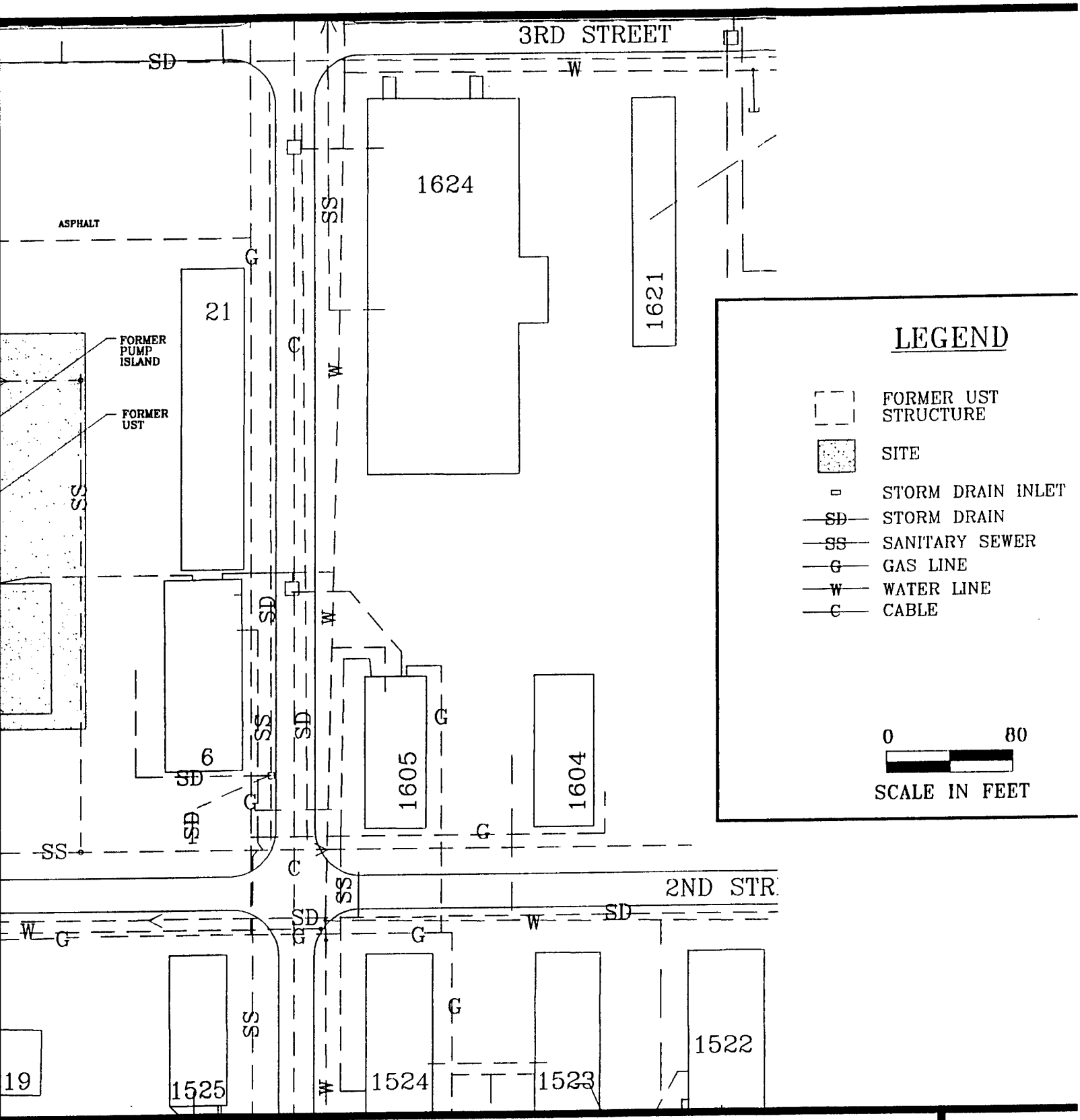
Salt Lake C

1



UNDERGROUND UTILITY LOCATION MAP

151st ARW, Utah ANG Base
Salt Lake City, Utah

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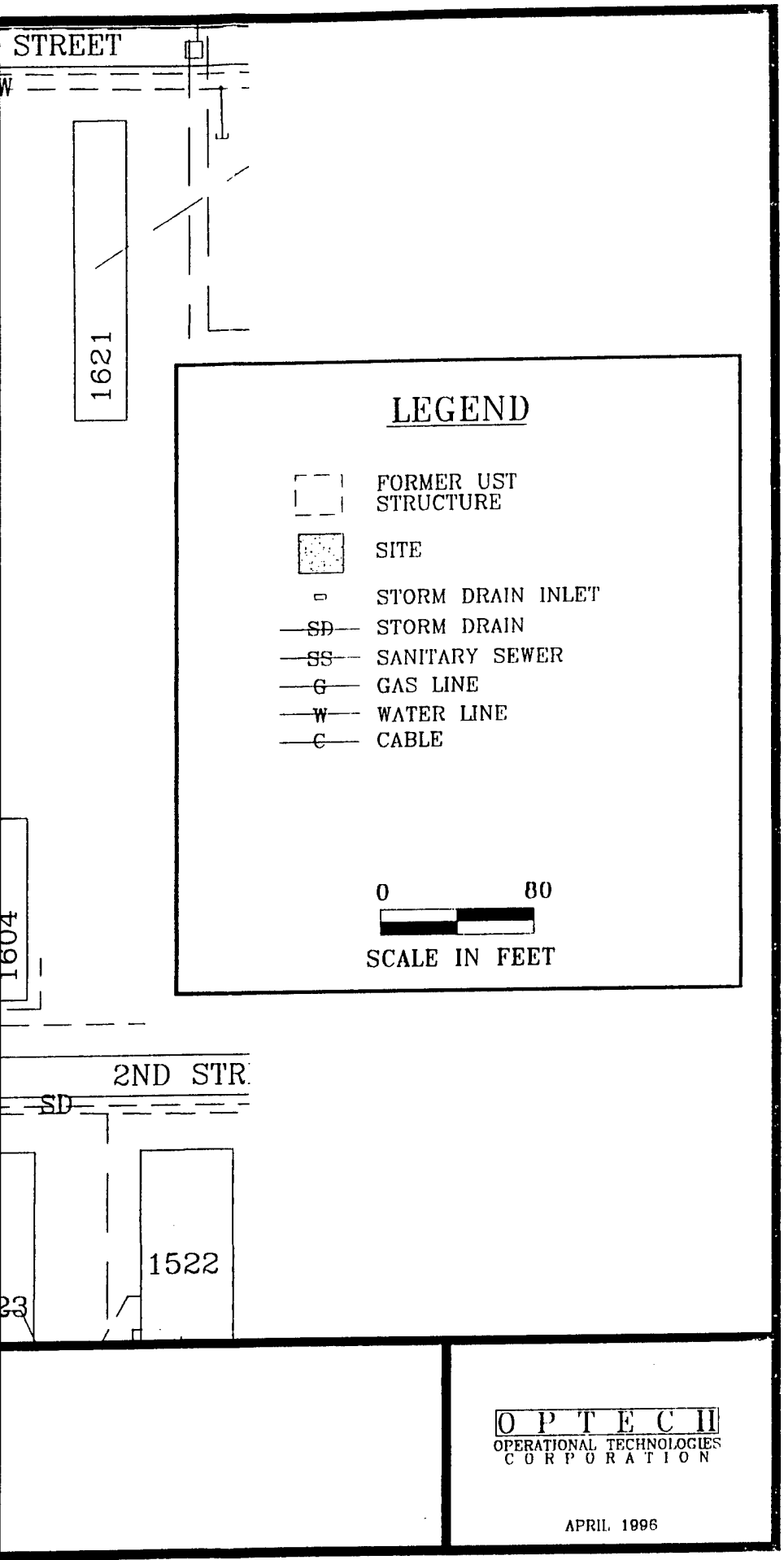
STREET
1621
LEGEND
FORMER UST STRUCTURE
SITE
STORM DRAIN INLET
SD STORM DRAIN
SS SANITARY SEWER
G GAS LINE
W WATER LINE
C CABLE
0
80
SCALE IN FEET
1604
2ND STR
SD
1522
OPTEC II
OPERATIONAL TECHNOLOGIES CORPORATION
APRIL 1996

(3)

The Utah classification system is based on three levels of environmental sensitivity considered representative of a variety of site conditions that range from the greatest to least conducive for contaminant leaching potential. Level I sites are, for example, are areas characterized by a combination of factors which are conducive to high contaminant leaching and migration potential, such as shallow depth to groundwater, highly transmissive soils in areas of moderately high rainfall, and with on-site or adjacent utility conduits. Respectively, Level II and Level III sites exhibit site characteristics with lower potentials for contaminant leaching and migration potential.

Based on an evaluation of the specific conditions at the Utah ANG Base, the site was determined to have Level II environmental sensitivity using criteria in the State of Utah guideline document. Appendix H provides the specific criteria for determining the environmental sensitivity of the subject site. Based on the results of the environmental sensitivity at the site, Level II RCL criteria for compounds detected at the site, as detailed in Table 1.5, are applicable.

Table 1.5
Level II Soil RCLs
151st ARW, Utah ANG Base, Salt Lake City, Utah

Constituents	Level II RCL (mg/kg)
TPH as Diesel	300*
TPH as Gasoline	100*
Benzene	0.300
Toluene	300
Ethylbenzene	200
Xylenes, Total	3,000
Naphthalene	5

TPH – Total Petroleum Hydrocarbons.
mg/kg – milligrams per kilogram.
* – If concentrations of TPH exceed these values for the applicable level of sensitivity, measure the additional constituents.

RCL – Recommended soil cleanup level.
Source: Utah Department of Health Environment Division: Estimating Numeric Cleanup Levels for Petroleum-Contaminated Soil at Underground Storage Tank Release Sites.

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SECTION 2.0 METHODOLOGY

Activities performed to gather data necessary for completing the SSI are detailed in the following sections. Phase 1 of the SSI was performed in October and November 1994 and included a soil vapor survey, Strataprobe™ groundwater screening survey, Strataprobe™ soil sampling, and the installation and sampling of monitoring wells. Slug testing and resampling of the monitoring wells occurred in March 1995. Phase 2 of the SSI was performed in October 1995 and included Geoprobe™ soil and groundwater sampling and the installation and sampling of monitoring wells. The Phase 2 monitoring wells were re-sampled in November 1995. All soil and groundwater sampling was performed by State of Utah-certified sampler A. Kathleen Merino (Utah Certification Number GS-0873).

The investigative approach can likewise be divided into two phases: (1) screening activities, including the soil vapor survey and on-site screening of Strataprobe™ and Geoprobe™ samples designed to gather preliminary data in order to determine optimum soil boring locations and to guide the selection of monitoring well locations; and (2) confirmation activities designed to verify the presence or absence of soil and groundwater contamination, the distribution and magnitude of contaminants detected, and to define geologic and hydrogeologic characteristics at the site.

Strataprobe™ and Geoprobe™ are comparable DPT for sampling soil and groundwater that utilize hydraulically advanced sampling probes.

2.1 NOTIFICATION REQUIREMENTS

Before any subsurface investigations were performed, the utilities at the proposed locations were marked and a digging permit was obtained from the Base Civil Engineering utility clearance service. Because all monitoring wells are less than 30 feet deep monitoring well installation applications were not required to be filed with the State of Utah Department of Natural Resources, Division of Water Rights (DWR).

2.1.1 Preliminary Activities

Field activities were coordinated through the Base Environmental Coordinator (BEC). Daily reports of field activities were filed with the ANGRC Project Manager and the BEC.

A decontamination pad was located south of Building 6 for each field effort. All Strataprobe™, Geoprobe™, drilling rig, and sampling equipment was decontaminated by steam-cleaning at this location. All decontamination water was captured, containerized in 55-gallon drums, and subsequently tested.

2.2 SOIL VAPOR, SOIL, AND GROUNDWATER SAMPLING

2.2.1 Soil Vapor, Direct-Push Technology (DPT) Locations, and Monitoring Wells – Phase 1

PC Exploration, of Salt Lake City, Utah, was retained by OpTech as the drilling contractor for monitoring well installation. Transglobal Environmental Geosciences (TEG) was retained for soil vapor, DPT soil, and groundwater sample collection.

2.2.1.1 Soil Vapor Investigation Rationale

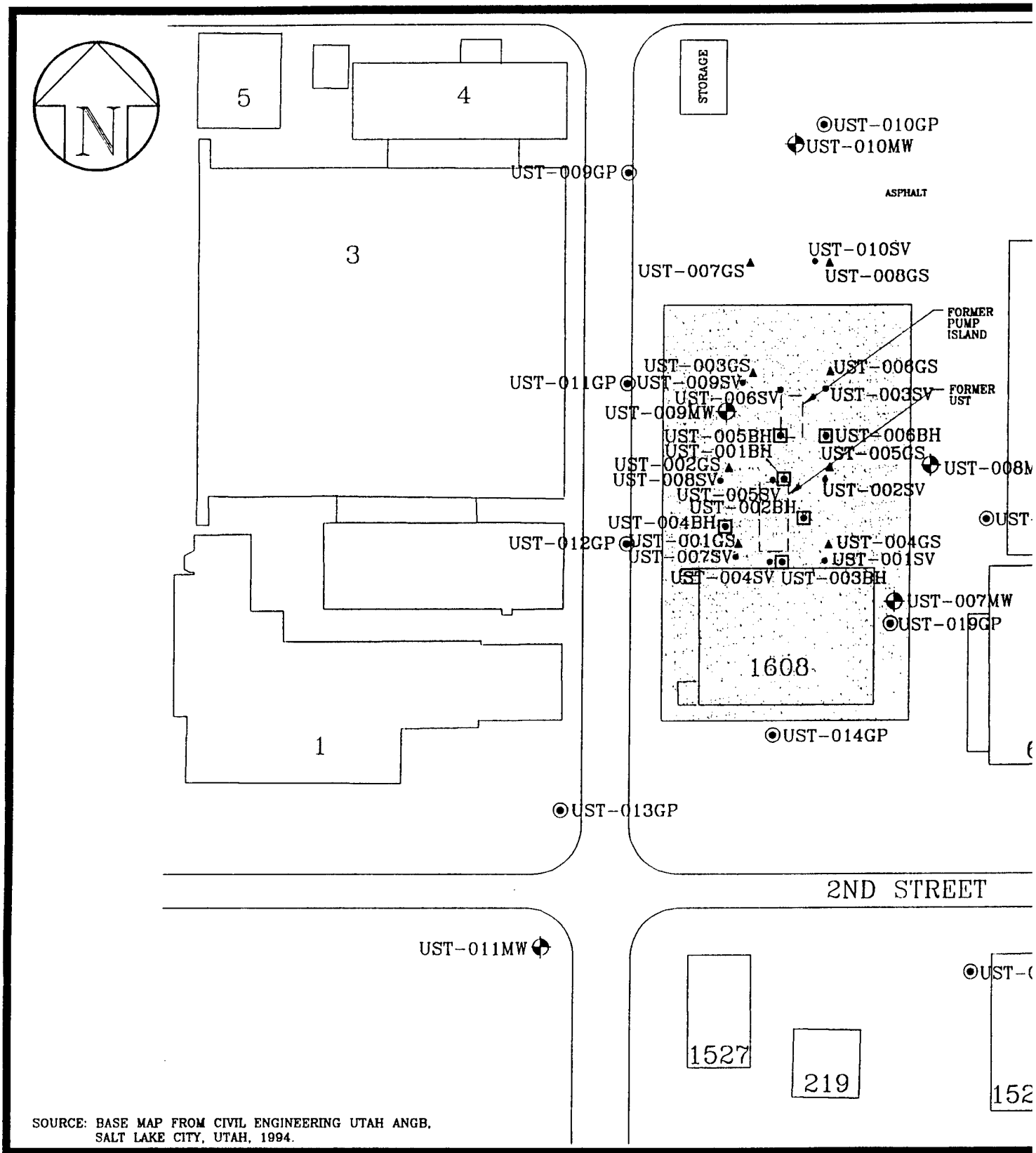
Ten soil vapor samples were collected during Phase 1 to aid in evaluating the extent of contamination and to determine the optimum location of the DPT sampling points. As shown in Figure 2.1, a base grid was oriented around the location of the former UST and pump island with a distance of no more than 60 feet between sampling points. Soil vapor point coordinates were surveyed by a professional surveyor.

2.2.1.2 Soil Vapor Methodology

The soil vapor samples were collected using a DPT soil vapor-sampler. The DPT consisted of a hydraulic and percussion drive-point system on a truck-mounted unit. A two-inch-diameter drive rod was pushed into the ground using a dual-ram hydraulic configuration and the weight of the vehicle on which the system was mounted. A Teflon™ tube was placed at the bottom of the drive rod and using a syringe a soil vapor was collected following the removal of three syringe volumes. The sample was then transferred to the on-site laboratory (TEG) for analysis, as discussed in Subsection 2.2.1.4.

2.2.1.3 DPT (Strataprobe™) Boring Location Rationale

Based on the Soil Vapor Survey results, six DPT soil borings and eight DPT groundwater screening points were installed to confirm the contaminant distribution as outlined in the soil vapor survey. Soil samples were collected for lithologic characterization, field headspace screening by the on-site field gas chromatograph (GC), and fixed-base laboratory analysis



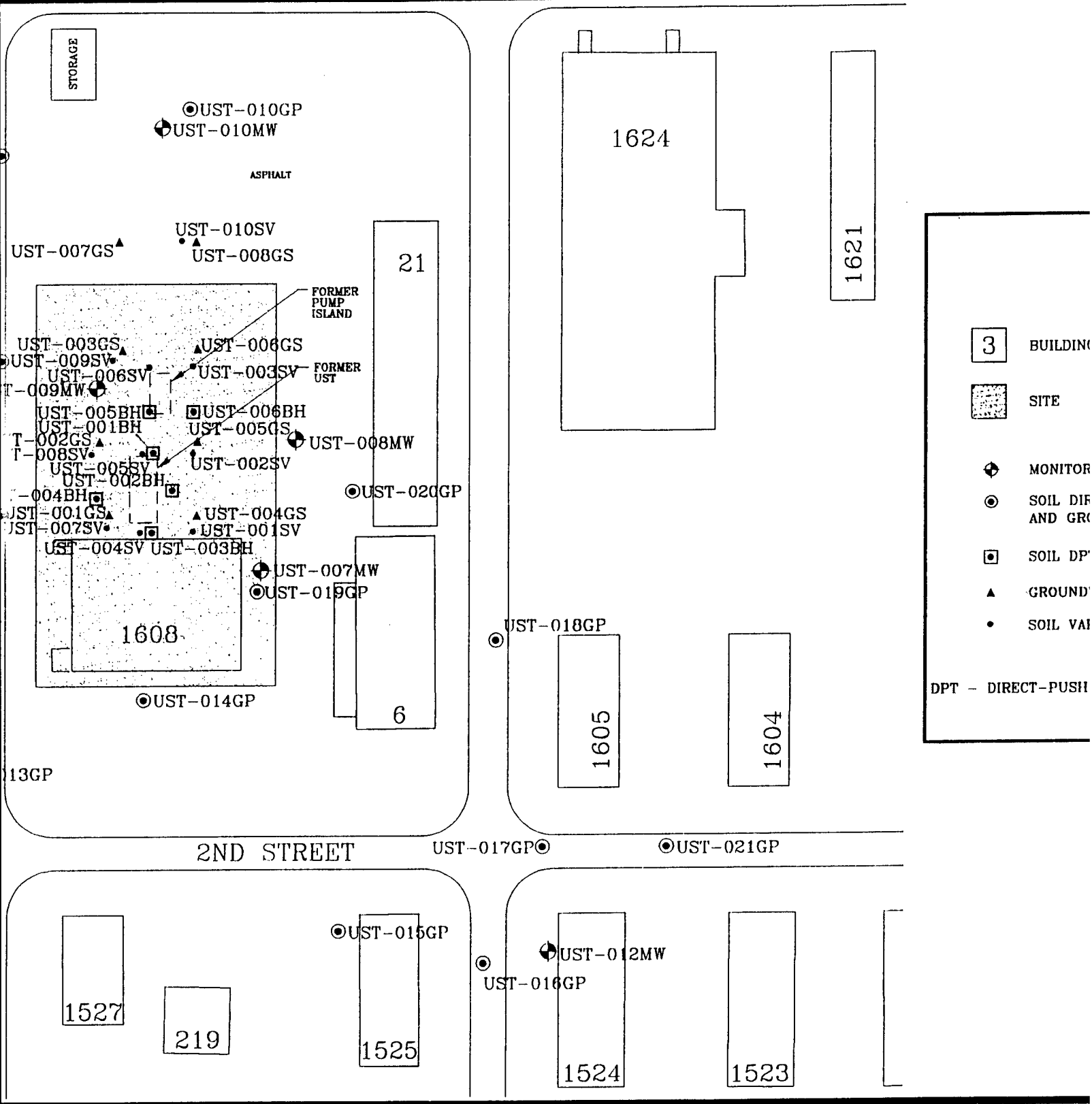
SOURCE: BASE MAP FROM CIVIL ENGINEERING UTAH ANGB, SALT LAKE CITY, UTAH, 1994.

FIGURE 2.1

SALT\SAMP-L02

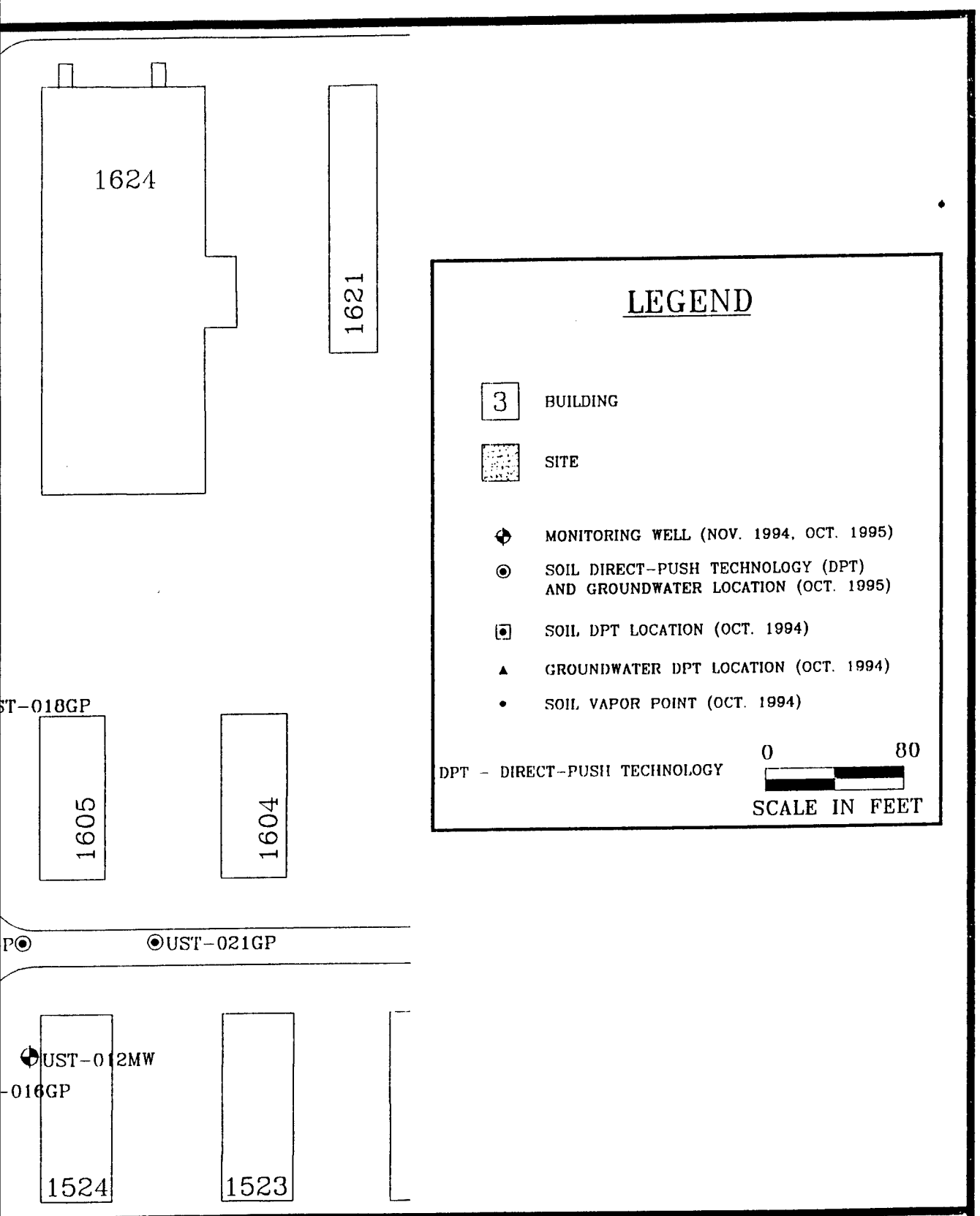
SOIL AND GROUNDWA

151st ARW,
Salt Lak



SOIL AND GROUNDWATER SAMPLING LOCATIONS

151st ARW, Utah ANG Base
Salt Lake City, Utah (2)



MPLING LOCATIONS

NG Base
Utah

(3)

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

APRIL 1996

(Inchcape Testing Services). Groundwater samples were collected for on-site field laboratory (TEG) headspace screening.

2.2.1.4 DPT (Strataprobe™) Methodology

This subsection describes DPT Methodology used during Phase 1 activities conducted in October 1994. Groundwater screening samples (Figure 2.1) were collected using the same DPT method as the soil vapor samples. The samples were collected through a hollow drive rod by a Teflon™ bailer and decanted into 40 milliliter (mL) volatile organic analysis (VOA) vial fitted with a Teflon™ lined septa lid.

DPT soil borings (Figure 2.1) were installed below the water table (approximately 5-6 feet BLS) to a maximum depth of 14 feet BLS. Soil samples were collected, in most cases, at the surface, at 5 feet BLS, and at 10 feet BLS for lithologic characterization, headspace field screening with the photoionization detectors (PID) and on-site laboratory, and for fixed-base laboratory analysis. An 18-inch long, carbon steel California-style sampler equipped with three 6-inch brass sleeves was used for collecting soil samples. The sampler was decontaminated and new brass sleeves inserted before collecting each sample.

During soil sampling, a Micro Tip™ PID was used immediately upon opening the soil sampling assembly to maximize the detection of volatiles emanating from the soil samples. Once the soil sample for fixed-base laboratory analysis was prepared, the remaining soil was field screened by ambient temperature headspace analysis (ATHA). The soil was placed in a sealable plastic bag, and the PID used to conduct the ATHA to screen for photoionizable compounds after the sample was allowed to stabilize at ambient temperature. PID readings are indicated on the boring logs included in Appendix C.

Additionally, soil samples were field screened for BTEX and certain solvents with a field GC. A Photovac 10S plus Portable GC, calibrated to screen for BTEX, tetrachloroethene (PCE), dichloroethene (DCE), and trichloroethene (TCE) was used to detect the presence of these compounds in the headspace from the soil samples collected. Headspace analysis was used to provide initial field information to characterize volatile compounds in the soil samples and to supplement data obtained from fixed-base laboratory analysis. The field GC was also used to analyze the headspace of groundwater samples collected from the monitoring wells to provide the Site Manager with preliminary water quality information for making real-time decisions regarding the sampling strategy, and to supplement data from water samples sent to the fixed-base laboratory for analysis.

DPT sample location abandonment activities conformed to applicable Utah State requirements. Holes were backfilled to the surface with pure bentonite grout immediately after the sampling had been accomplished to prevent the downward migration of contaminants through the open hole. DPT location coordinates and ground elevation were measured and recorded by a professional surveyor.

2.2.1.5 Monitoring Well Location Rationale

During Phase 1, three monitoring wells were installed to determine the site-specific groundwater flow direction and provide sampling ports for groundwater. Base-wide groundwater measurements (Figures 1.5 and 1.6) indicated the flow would be in a northeast to northwest direction. Based on this information and the groundwater screening survey results, UST-007MW through UST-009MW were triangulated around the former tank pit and outside the screening defined plume, with two wells in anticipated downgradient positions (Figure 2.1). However, groundwater level measurements taken in the Phase 1 wells showed that groundwater flow at the subject site was to the southeast and southwest.

Based on the southeast to southwest groundwater flow direction and groundwater contamination defined during Phase 1, three additional monitoring wells, UST-010MW through UST-012MW were installed during Phase 2 (Figure 2.1). Two wells were located south of the site in a downgradient position. One additional upgradient well was installed because benzene had been detected in upgradient well UST-009MW at levels exceeding MCLs during the March 1995 sampling round.

2.2.1.6 Monitoring Well Methodology

Monitoring well boreholes were drilled using hollow-stem auger (HSA) drilling methods, which employs a hollow helical steel drill tool that is rotated to advance the boring and lift formation materials (cuttings) to the surface. Auger flights, drill rig(s), and tools were steam-cleaned in the designated decontamination area north of Building 6 before initial use and after the completion of each monitoring well. Likewise, all casing and screens installed in monitoring wells were unpackaged immediately prior to installation in the wellbore. Decontamination water was contained on-site in steel drums.

2.2.1.7 Hydraulic Conductivity Measurements

A rising head slug test was conducted at each Phase 1 well to determine the shallow aquifer hydraulic conductivity. The water level was lowered by pumping the well dry with an electric submersible pump and recording the water level rise at closely spaced time intervals using a Hermit Model SE1000C Environmental Data Logger. The resulting data was used to compute hydraulic conductivity using the Bouwer and Rice (1976) method, and is included in Appendix E.

2.2.2 DPT (Geoprobe™) Survey Rationale – Phase 2

The following subsection describe DPT activities performed during Phase 2 of the SSI. A Phase 2 investigation was necessary to complete delineation of the soil and groundwater contamination related to the abandoned UST pit. A Geoprobe™ DPT rig was used for collecting soil and groundwater samples for the Phase 2 of the SSI.

2.2.2.1 DPT (Geoprobe™) Point Location Rationale

Petroleum constituents BTEX and TPH concentrations above state UST guidelines were encountered during the Phase 1 SSI field work in October and November 1994. Based on this data and the direction of groundwater flow as determined from the Phase 1 monitoring wells, additional sampling locations were selected to evaluate the extent of soil and groundwater contamination at the site. DPT boring locations were primarily focused southeast and west of the site in areas that were not investigated during Phase 1 of the SSI.

Both soil and groundwater samples were collected from the 13 DPT locations (Figure 2.1). DPT sampling points were advanced to 16 feet BLS and 3 soil and 2 groundwater samples were collected during a typical installation. Soil and groundwater samples were analyzed by the on-site laboratory (TEG) for halogenated and aromatic VOCs using EPA Methods 8010/8020 and for TPH (gasoline and diesel), by Modified EPA Method 8015. At most locations soil samples were collected at 4-6, 6-8, and 11-13 feet BLS. Groundwater samples were collected, if possible, at 8 and 16 feet BLS.

2.2.2.2 DPT (Geoprobe™) Methodology

Soil samples were collected into a two-foot long California-type sampler with four one-inch diameter brass sleeves. Upon retrieval, the sample was screened for organic vapors with a PID.

A portion of the sample was prepared for ATHA as previously described. Two of the brass sleeves were transported for fixed-base laboratory analysis (Mountain States Analytical, Inc. (MSAI)), if required, and the remaining sample was analyzed by the on-site laboratory.

Clean polyethylene tubing was inserted through the DPT rods and groundwater samples were collected with a low-flow peristaltic pump from the shallow interval initially, and then from the deeper interval. Each sample was collected directly into sample containers appropriate for the requested analysis. A new length of clean tubing was used to collect each sample.

Table 2.1 summarizes the screening and confirmation activities performed during Phase 1 and Phase 2 of the SSI. Screening activities analyses were performed by the on-site laboratory and confirmation activities analyses were performed by the fixed-base laboratories. Duplicate samples are included in sample quantities.

Table 2.1
Former UST, Building 1608 Site – Subsurface Site Investigation Summary
151st ARW, Utah ANG Base, Salt Lake City, Utah

Phase 1 Activity		Number and Type of Sample Locations	Number of Laboratory Samples
Screening Activities	Soil Vapor, Soil, and Groundwater Sampling	10 Soil Vapor Points	11
		6 DPT Soil Borings	28
		8 DPT Groundwater Points	9
Confirmation Activities	Soil Sampling	6 DPT Borings	20
	Groundwater Sampling	3 Monitoring Wells	7
	Slug Testing	3 Monitoring Wells	N/A
Phase 2 Activity		**Number and Type of Sample Locations**	**Number of Laboratory Samples**
Screening Activities	Soil Sampling	13 DPT Borings	39
	Groundwater Sampling	13 DPT Borings	31
Confirmation Activities	Soil Sampling	13 DPT Borings	11
	Groundwater Sampling	13 DPT Borings	16
	Groundwater Sampling	3 Monitoring Wells	7

DPT – Direct-Push Technology.

2.3 MONITORING WELL INSTALLATION

Boreholes for the monitoring wells were drilled at the site with a HSA drill rig to total depths ranging between 14 feet and 15 feet BLS. All boreholes were logged during drilling to evaluate site geology and subsurface soil characteristics. Soil samples were collected with split-spoon samplers (typically three per borehole) from the surface to total depth for field screening.

Soil cuttings were containerized in 55-gallon steel drums and samples were collected to determine proper disposal.

Monitoring wells were constructed of 2-inch inside diameter (ID), polyvinyl chloride (PVC) casing and screen. The screened interval is a 10-foot section of 0.010-inch slotted screen with bottom cap. The top of the screen was placed approximately two to three feet above the depth at which groundwater was noted in the soil samples. A filter pack consisting of washed silica sand was placed around the screen to a point at least two feet above the top of the screen. A bentonite slurry seal was place above each filter pack. Above the bentonite seal the annulus was filled to approximately 1 foot below grade with a pure bentonite grout. Monitoring wells were constructed in accordance with applicable Utah State well standards.

All wells were completed with flush mounted well boxes. An airtight well cap was provided with a keyed-alike lock. The master key was given to the Utah ANG Base Environmental Coordinator (BEC). Monitoring well construction diagrams are included in Appendix D.

Monitoring well coordinates, top-of-casing, and ground elevations were determined by Mountain State Surveyors, a Utah licensed professional surveyor, to $\pm$ 1.0 foot horizontally and $\pm$ 0.01 foot vertically. The surveyor's report is included in Appendix A.

The monitoring wells were developed within 24 to 48 hours after completion. Details of the well development procedure are located in Subsection 2.5.2.

2.4 SOIL SAMPLING

2.4.1 Site Conditions

Conditions for DPT and drilling were favorable at the site for both field efforts. Temperatures were generally in the 50s with little precipitation. Soil recovery was generally very good with many samples having 100% recovery. Groundwater recovery was not possible from some of

the DPT locations in the clayey zones, but enough groundwater samples were collected to complete delineation of the contamination.

2.4.2 Soil Description Methods

The lithologic record was prepared by a geologist during the drilling of each borehole based on visual inspection of soil samples supplemented by examination of drill cuttings. Material was classified using the Unified Soil Classification System and described according to American Society of Testing and Materials D-2488-90, "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)". A Munsell color chart was used for color classification.

2.4.3 Field Screening – Soils

During soil sampling, a Micro Tip™ PID was used immediately upon opening the soil sampling assembly to maximize the detection of volatiles emanating from the soil samples. Once the soil sample for laboratory analysis was prepared, the remaining soil was field-screened by ATHA. The soil was placed in a sealable plastic bag, and the PID used to conduct the ATHA to screen for photoionizable compounds after the sample was allowed to stabilize at ambient temperature. PID readings are indicated on the boring logs included in Appendix C.

2.4.4 Soil Sample Collection and Handling

Soil samples were collected from three to four-foot intervals in most of the DPT points and monitoring well boreholes. Maximum DPT depths were 14 feet BLS during Phase 1 and 16 feet BLS during Phase 2. Monitoring well depths were approximately 15 feet BLS so that a 10-foot BLS screen would straddle the water table, which occurred between 5-6 feet BLS across the site. Samples were collected and transported in brass liners. The brass liners were capped at each end with a Teflon™ shield, a foil shield, and plastic end cap. The sample was then labeled, wrapped in a plastic bag and placed in an ice-filled cooler to maintain a 4 degrees Centigrade (° C) temperature. Nitrile gloves were used during all sample handling and packaging and new gloves were used for each sample. Analytical samples were delivered to the on-site laboratory the day of collection and to the off-site laboratory within 24-hours after collection. Chain-of-custody procedures were followed for all samples.

2.4.5 Decontamination Procedures

Drilling equipment and DPT equipment were decontaminated by steam-cleaning prior to use. Sampling equipment such as split-spoons, brass sleeves, bailers, etc., were decontaminated by washing with a laboratory-grade detergent followed by a rinse with drinking-quality water, an ASTM Type II reagent water rinse, and pesticide grade methanol rinse. The equipment was allowed to air dry and then wrapped in aluminum foil until use.

2.4.6 Soil Cuttings

All soil cuttings were containerized in properly labeled 55-gallon drums. Composite samples of all cuttings were collected and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) parameters. No concentrations exceeded hazardous waste levels. Detailed results of investigative waste sampling along with letters recommending waste disposition are located in Appendix I.

2.4.7 DPT Location Abandonment Procedures

In accordance with Utah State soil boring abandonment procedures, all DPT locations were backfilled with bentonite. The ground surface was restored to pre-drilling conditions with asphalt patching at each location.

2.5 GROUNDWATER SAMPLING

2.5.1 Static Groundwater Level Measurements

Static groundwater level measurements in the monitoring wells were taken with an electronic water level tape graduated in 0.01-foot increments. Groundwater levels were collected before and during purging or sampling events and the probe was decontaminated between wells. Groundwater levels are presented and discussed in Section 3.0.

2.5.2 Monitoring Well Development and Sampling

All monitoring wells were developed within 24 to 48 hours after the last well was completed. Monitoring wells were developed by purging groundwater with a Teflon™ bailer. Well development continued until the groundwater was free of sand and groundwater temperature, conductivity and pH stabilized. Approximately 20 gallons of groundwater were removed from

each well during development. After development, the wells were allowed to stabilize 24 hours prior to the first round of groundwater sampling.

Each monitoring well was purged immediately prior to sample collection with a Teflon™ bailer or submersible pump (March 1995 event only). Purging was considered complete when field parameters of pH, temperature, and conductivity had stabilized, and a minimum of three well volumes of sand-free groundwater had been purged from the well.

Groundwater samples were collected using a decontaminated Teflon™ bailer and placed in appropriate containers with preservatives, as required, placed in a cooler and chilled to 4° C, and sent to the laboratory for analysis in an ice cooler. New monofilament line was used to lower aqueous sampling equipment into each well being sampled.

2.5.3 DPT Groundwater Sampling

2.5.3.1 DPT (Strataprobe™) Groundwater Sampling

During the October-November 1994 field effort groundwater samples were collected from the DPT locations at approximately nine feet BLS. After the drive rod was driven to the sampling depth, the drive point was removed and a clean PVC screen was lowered inside the drive rod. The rod was pulled up to expose the screen and samples were collected using a decontaminated Teflon™ mini-bailer lowered by monofilament line. New monofilament line was used at each sampling location.

2.5.3.2 DPT (Geoprobe™) Groundwater Sampling

During the October 1995 field effort groundwater samples were collected from each DPT location at depths of eight and sixteen feet BLS. The drive rod was pushed to eight feet BLS, the drive point was removed, and new polyethylene tubing was inserted to the bottom of the hole. A peristaltic pump was used to purge the well and approximately one liter of water was removed prior to sample collection to effect a reduction in sample turbidity. The groundwater generally became less turbid during pumping. The tubing was then removed, a decontaminated drive point was re-installed, and the rod was driven to 16 feet BLS, where a groundwater sample was collected using the same procedure.

2.6 SURVEYING

Soil vapor, DPT, and monitoring well locations were surveyed by Mountain State Surveyors of Salt Lake City, Utah. Monitoring wells were referenced horizontally and vertically. The top of casing was surveyed off of permanent markers and measured vertically to $\pm$ 0.01 feet. Horizontal accuracy for all survey locations was to $\pm$1 feet. A permanent benchmark was established near the site and tied to the mean sea level datum. Table A.1 in Appendix A summarizes the coordinates of all wells and soil borings.

2.7 ANALYTICAL METHODS

During Phase 1 of the SSI, soil and groundwater samples were field-screened for BTEX and certain solvents with a field GC. A Photovac 10S plus Portable GC, calibrated to screen for BTEX, PCE, DCE, and TCE was used to detect the presence of these compounds in the headspace from the samples collected. Headspace analysis was used to provide initial field information to characterize volatile compounds in the soil samples and to supplement data obtained from laboratory analysis. Additionally, soil vapor and groundwater samples collected by DPT were analyzed by TEG's on-site mobile laboratory for BTEX by EPA Method 8020, solvents by EPA Method 8010, TPH (diesel and gasoline) (groundwater only) by EPA Method 8015 modified and total volatile hydrocarbons (TVH) (soil vapor only) by EPA Method 8015.

Inchcape Testing Services of San Jose, California, provided fixed-base laboratory analysis during Phase 1. Soil samples were analyzed by EPA Methods 8240 for VOCs and Modified 8015 for TPH (gasoline and diesel). Groundwater samples were analyzed by EPA Methods 8010/8020 for VOCs and Modified 8015 for TPH (gasoline and diesel).

During Phase 2, samples were analyzed by the on-site and fixed-base laboratory for VOCs using EPA Methods 8010/8020 and for TPH (gasoline and diesel) by Modified EPA Method 8015. Mountain States Analytical of Salt Lake City, Utah, a State of Utah-certified laboratory, provided fixed-base laboratory services and TEG of Lacey, Washington provided on-site laboratory services during Phase 2. Table 2.2 summarizes soil analyses performed at the fixed-base laboratory during both phases of the SSI.

Table 2.3 summarizes the groundwater analyses at the fixed-base laboratory during both phases of the SSI. A complete listing of laboratory results for all analyses is given in Appendix G.

Table 2.2
Soil Fixed-Base Laboratory Analytical Program
for Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample Location/Interval (feet BLS)	QA/QC Samples	VOCs (SW8240)	VOCs (SW8010/SW8020)	TPH (gasoline and diesel range) (Ca. Mod. 8015)
UST-001BH 1 - 2		X		X
UST-001BH 5 - 6		X		X
UST-001BH 10 - 11		X		X
UST-002BH 1 - 2		X		X
UST-002BH 5 - 6		X		X
UST-002BH 11 - 12		X		X
UST-003BH 1 - 2		X		X
UST-003BH 5 - 6		X		X
UST-003BH 9 - 10		X		X
UST-004BH 1 - 2		X		X
UST-004BH 5 - 6		X		X
UST-004BH 13 - 14		X		X
UST-005BH 1 - 2	Duplicate	X		X
UST-005BH 2 - 3		X		X
UST-005BH 5 - 6		X		X
UST-005BH 9 - 10		X		X
UST-006BH 1 - 2	Duplicate	X		X
UST-006BH 2 - 3		X		X
UST-006BH 5 - 6		X		X
UST-006BH 9 - 10		X		X
UST-009GP 4 – 6			X	X
UST-010MW 10 – 11.5			X	X
UST-011MW 13.5 – 15			X	X
UST-012MW 2 – 3.5			X	X
UST-012MW 5 – 6.5			X	X

Table 2.2 (Concluded)
Soil Fixed-Base Laboratory Analytical Program
for Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample Location/Interval (feet BLS)	QA/QC Samples	VOCs (SW8240)	VOCs (SW8010/SW8020)	TPH (gasoline and diesel range) (Ca. Mod. 8015)
UST-013GP 4 – 6			X	X
UST-014GP 6 – 8			X	X
UST-017GP 4 – 6			X	X
UST-018GP 4 – 6			X	X
UST-019GP 6 – 8			X	X
UST-020GP 4 – 6			X	X
	Equipment Blank (2)	X	X	X
	Trip Blank (6)	X	X	
	Field Blank (2)	X	X	X

feet BLS – feet Below Land Surface.
VOCs – Volatile Organic Compounds.
TPH – Total Petroleum Hydrocarbons.
BH – Borehole.

QA/QC – Quality Assurance/Quality Control.
SW – United States Environmental Protection Agency Solid Waste Method.
Ca. Mod. – California Modified Method 8015.
UST – Underground Storage Tank.

Table 2.3
Groundwater Fixed-Base Laboratory Analytical Program
for Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample Location/ Interval (if Applicable in feet BLS)	Additional Samples	Sampling Round	Groundwater Analyses and Methods	
			VOCs (SW8010/8020)	TPH (gasoline and diesel) (Ca. Mod. 8015)
UST-007MW		November 1994	X	X
UST-008MW		November 1994	X	X
UST-009MW		November 1994	X	X
	Equipment Blank (1) Trip blank (3) Field Blank (1) Decon Water (1)	November 1994	X X X X	X X X
UST-007MW	Duplicate MS/MSD	March 1995	X	X
UST-008MW		March 1995	X	X
UST-009MW		March 1995	X	X
	Field Blank (1) Equipment Blank (1) Trip Blank (2)	March 1995	X X X	X X
UST-009GPW 8		October 1995	X	X
UST-009GPW 16		October 1995	X	X
UST-013GPW 11		October 1995	X	X
UST-013GPW 16		October 1995	X	X
UST-014GPW 8		October 1995	X	X
UST-014GPW 16		October 1995	X	X
UST-015GPW 8		October 1995	X	X
UST-017GPW 8	Duplicate	October 1995	X	X

Table 2.3 (Concluded)
Groundwater Fixed-Base Laboratory Analytical Program
for Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample Location/ Interval (if Applicable in feet BLS)	Additional Samples	Sampling Round	Groundwater Analyses and Methods	
			VOCs (SW8010/8020)	TPH (gasoline and diesel) (Ca. Mod. 8015)
UST-017GPW 16		October 1995	X	X
UST-018GPW 8		October 1995	X	X
UST-020GPW 8		October 1995	X	X
UST-020GPW 16		October 1995	X	X
UST-021GPW 11		October 1995	X	X
UST-021GPW 16		October 1995	X	X
UST-010-MW		October 1995	X	X
UST-011MW		October 1995	X	X
UST-012MW		October 1995	X	X
	Trip Blank (7) Equipment Blank (2) Field Blank (1)	October 1995	X X X	X X
UST-010MW		November 1995	X	X
UST-011MW	Duplicate	November 1995	X	X
UST-012MW		November 1995	X	X
	Trip Blank (1) Equipment Blank (1) Field Blank (1)		X X X	X X

UST – Underground Storage Tank.
feet BLS – feet Below Land Surface.
VOCs – Volatile Organic Compounds.
Ca. Mod. – California Modified Method 8015.
MW – Monitoring Well.
MS/MSD – Matrix Spike/Matrix Spike Duplicate.
TPH – Total Petroleum Hydrocarbons.

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SECTION 3.0 RESULTS OF THE INVESTIGATION

3.1 SOILS

3.1.1 Geological Characteristics of Soils at Former UST, Building 1608 Site

The subsurface lithology at the site generally consists of greenish to dark gray clay, silty clay, and clay containing silty sand. Approximately one to two feet of brown fill material consisting of mixed soil and gravel is encountered immediately below the asphalt surfacing at the site. DPT locations sampled south and west of the site reveal a fine to coarse sand is encountered approximately 10-12 feet BLS. The sand unit was less defined, had a higher clay content, and did not exist at depths greater than 13 feet BLS at locations for monitoring wells UST-011MW and UST-012MW, installed in the same areas (Figure 3.1). Moisture varies from dry in the fill material to wet in the clay and sand strata. The clays encountered at the site contain a high percentage of silt and sand interspersed and in thin, randomly occurring zones. Groundwater occurs in the more permeable sandy and silty zones within the clay units. Figure 3.1 illustrates the location of two stratigraphic cross-sections. Cross-section A-A' (Figure 3.2) is north/south and cross-section B-B' (Figure 3.3) is east/west. Boring logs for all DPT locations, and monitoring well boreholes are located in Appendix C.

3.1.2 Soil Vapor Screening Results

A soil vapor survey was conducted on 26 and 27 October 1994 to evaluate the distribution of contamination and to determine the optimum placement of soil borings. Soil vapor samples were collected from ten locations at a depth of five feet BLS. Samples were analyzed by an on-site mobile laboratory for BTEX, specific halogenated hydrocarbons, and TVH. Table 3.1 presents the analytical results of the soil vapor survey. The results of the soil gas survey were comparable to the results of subsequent DPT soil and groundwater samples submitted to on-site and fixed-base laboratories in that where higher concentrations of hydrocarbon vapors were detected, subsequent soil and groundwater analyses indicated elevated hydrocarbon concentrations.

Halogenated hydrocarbons were not detected in soil vapor samples. Benzene was detected at concentrations ranging from 0.02 to 159 parts per million by volume (ppmv), toluene from 0.01 to 20.4 ppmv, ethylbenzene from 0.04 to 1.26 ppmv, and xylenes from 0.02 to 6.57 ppmv. TVH was detected at concentrations ranging from 13 to 7,459 ppmv. The highest concentrations of BTEX and TVH were detected in soil vapor samples collected from location UST-002SV.

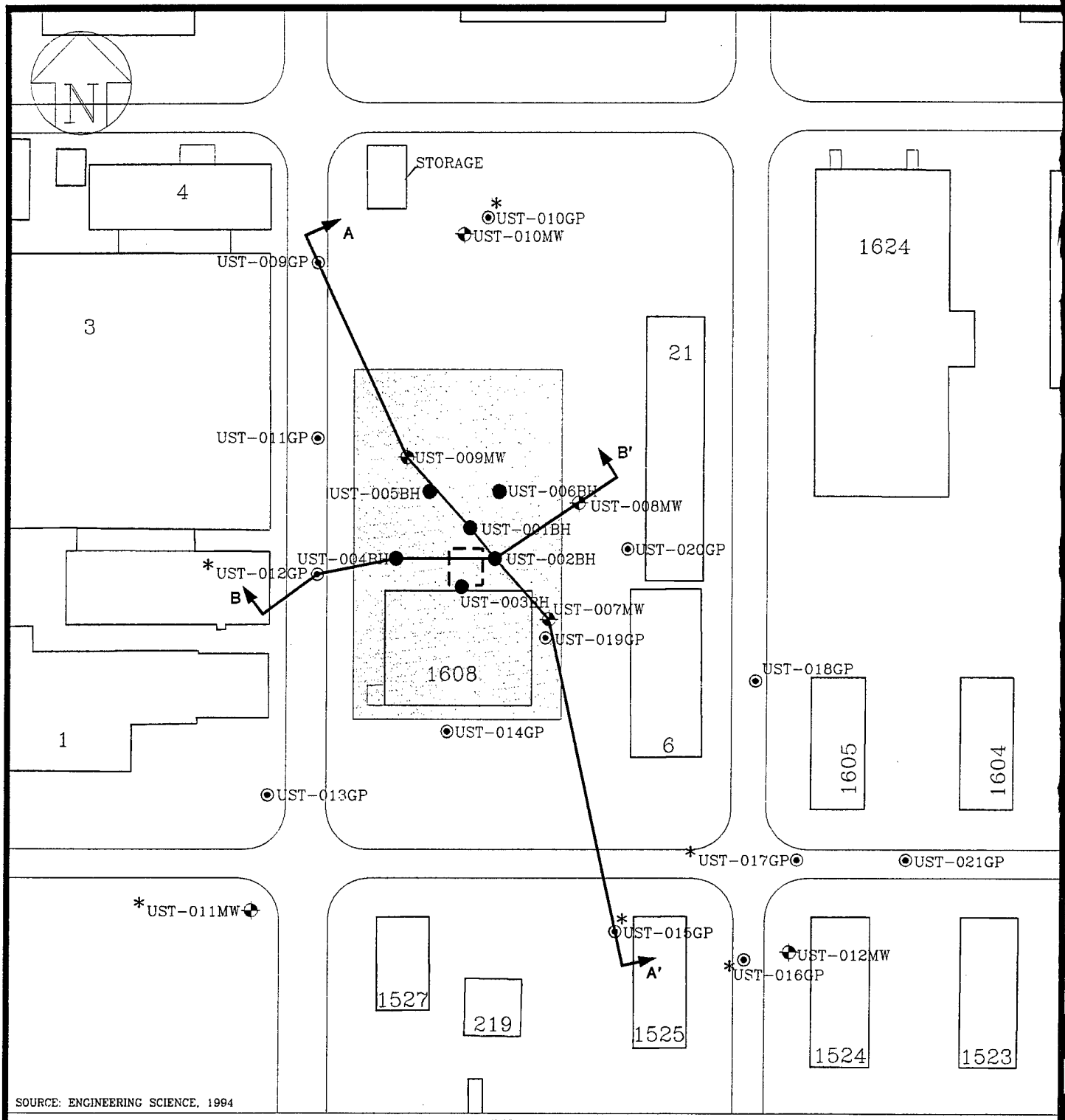

FIGURE 3.1

SALT\BENZ-XSC

GEOLOGIC CROSS-SECTIONS LOCATION MAP

151st ARW, Utah ANG Base
Salt Lake City, Utah

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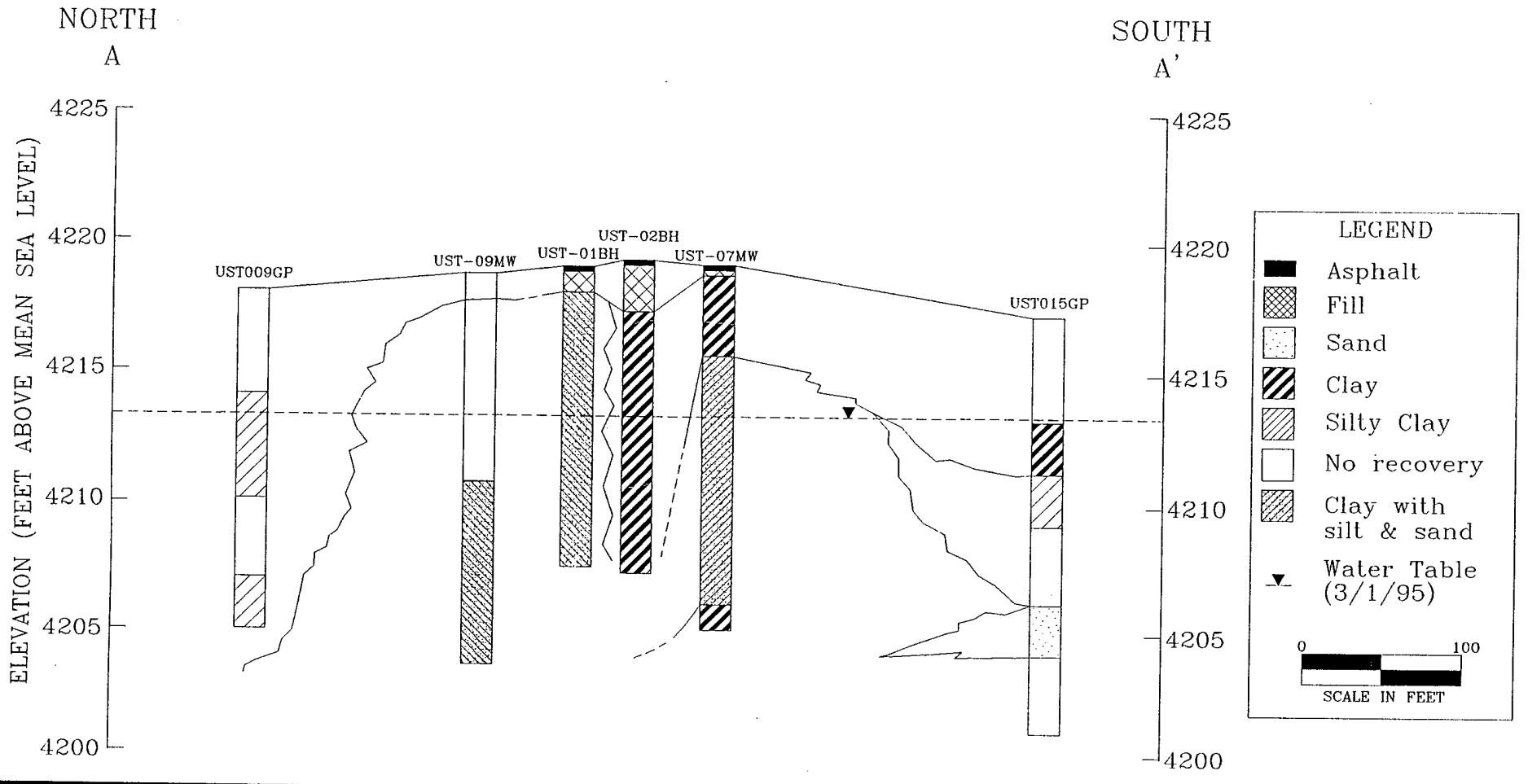

FIGURE 3.2

SALT\CROSSA-A

GEOLOGIC CROSS-SECTION A-A'
151st ARW, Utah ANG Base
Salt Lake City, Utah

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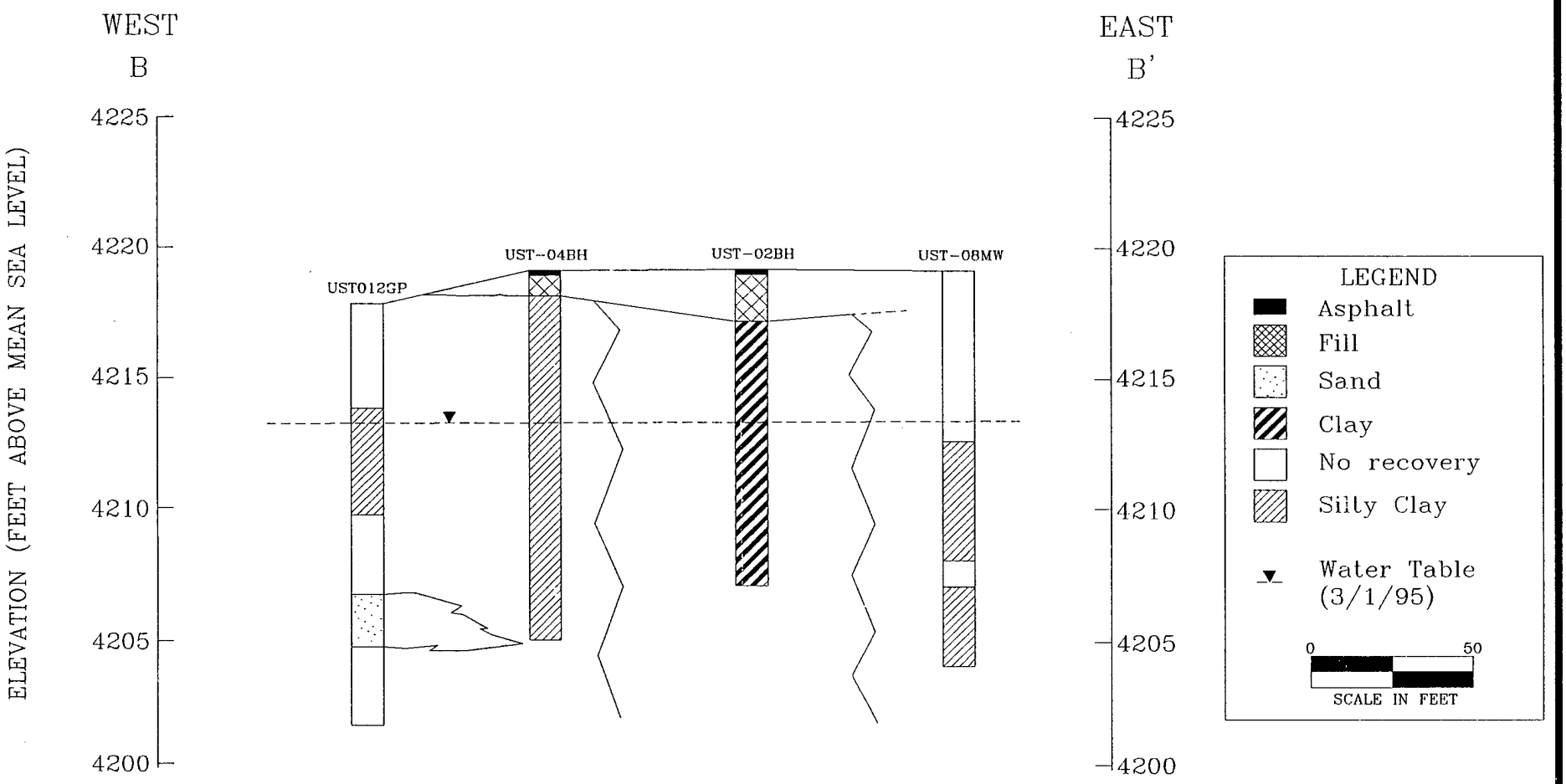

FIGURE 3.3

GEOLOGIC CROSS-SECTION B-B'
151st ARW, Utah ANG Base
Salt Lake City, Utah

SALTLAKE\CROSB-B

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

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Table 3.1
BTEX and Total Volatile Hydrocarbons Detected in Soil Vapor Samples at Former UST, Building 1608 Site 151st ARW, Utah ANG Base, Salt Lake City, Utah

Parameter (ppmv)	Sample Location					
	UST-001SV	UST-002SV	UST-002SV DUP	UST-003SV	UST-004SV	UST-005SV
Benzene	51.1	113	159	2.5	0.02	25.5
Toluene	9.1	13.8	20.4	0.38	0.01	2.38
Ethylbenzene	1.25	0.82	1.26	0.01U	0.01U	0.32
Total Xylenes	1.53	4.48	6.57	0.08	0.02	0.27
TVH	4,865	5,253	7,459	181	1U	1,984

Parameter (ppmv)	Sample Location				
	UST-006SV	UST-007SV	UST-008SV	UST-009SV	UST-010SV
Benzene	0.13	0.49	0.01U	0.02	0.01U
Toluene	0.01U	0.14	0.01U	0.01U	0.01U
Ethylbenzene	0.01U	0.04	0.01U	0.01U	0.01U
Total Xylenes	0.01U	0.07	0.02	0.01U	0.01U
TVH	13	18	1U	1U	1U

Note: All soil vapor samples collected from a depth of 5 feet BLS.
ppmv – parts per million by volume.
UST – Underground Storage Tank.
TVH – Total Volatile Hydrocarbons.
DUP – Duplicate.
BTEX – Benzene, Toluene, Ethylbenzene, and Xylenes.
SV – Soil Vapor.
U – Compound analyzed for but not detected. Number indicates the detection limit.

Based on the occurrence of 4,865 ppmv of TVH gas detected at soil vapor sampling point UST-001SV, extension of the soil gas plume towards the southeast was indicated, however, the actual extent was not verified by soil gas measurements. Subsequent soil and groundwater sampling from monitoring well UST-007MW detected elevated levels of petroleum hydrocarbons (Subsections 3.1.4 and 3.2.3). The highest contaminant concentrations were generally encountered in sampling locations east of the former UST tank location and adjacent to the northeast corner of Building 1608. Figure 3.4 illustrates the benzene and TVH soil vapor contaminant distribution at the site.

3.1.3 PID Field Screening Results

Both direct PID screening and ATHA screening of soils occurred during installation of DPT locations, and monitoring well borings. These measurements are noted on the boring logs located in Appendix C. UST-002BH exhibited the highest PID and ATHA readings at 1,351 ppm and 1,287 ppm respectively. UST-001BH, UST-007MW, UST-011BH, UST-012BH, and UST-019BH all had PID and ATHA measurements exceeding 50 ppm. The remaining boreholes had all PID and ATHA measurements under 10 ppm. The boreholes exhibiting the higher

measurements are located in the area of delineated soil and/or groundwater contamination, as will be discussed in Subsections 3.1.5 and 3.2.2.3.

3.1.4 Soil Analytical Results

Both on-site and fixed-base laboratory screening/analysis of soil samples occurred during Phase 1 and Phase 2 of the SSI. In general, field screening values and the results of fixed-base laboratory analyses compared favorably for samples collected during both the Phase I and Phase II investigations. However, the results of field GC analyses are not subject to the carefully controlled measures applied to laboratory analyses. Significant variations between field GC and laboratory analytical results may be attributed to the differences between the two methods. Soil analytical results are detailed in Subsections 3.1.4.1 through 3.1.4.4.

3.1.4.1 Phase 1 Field GC Screening Results

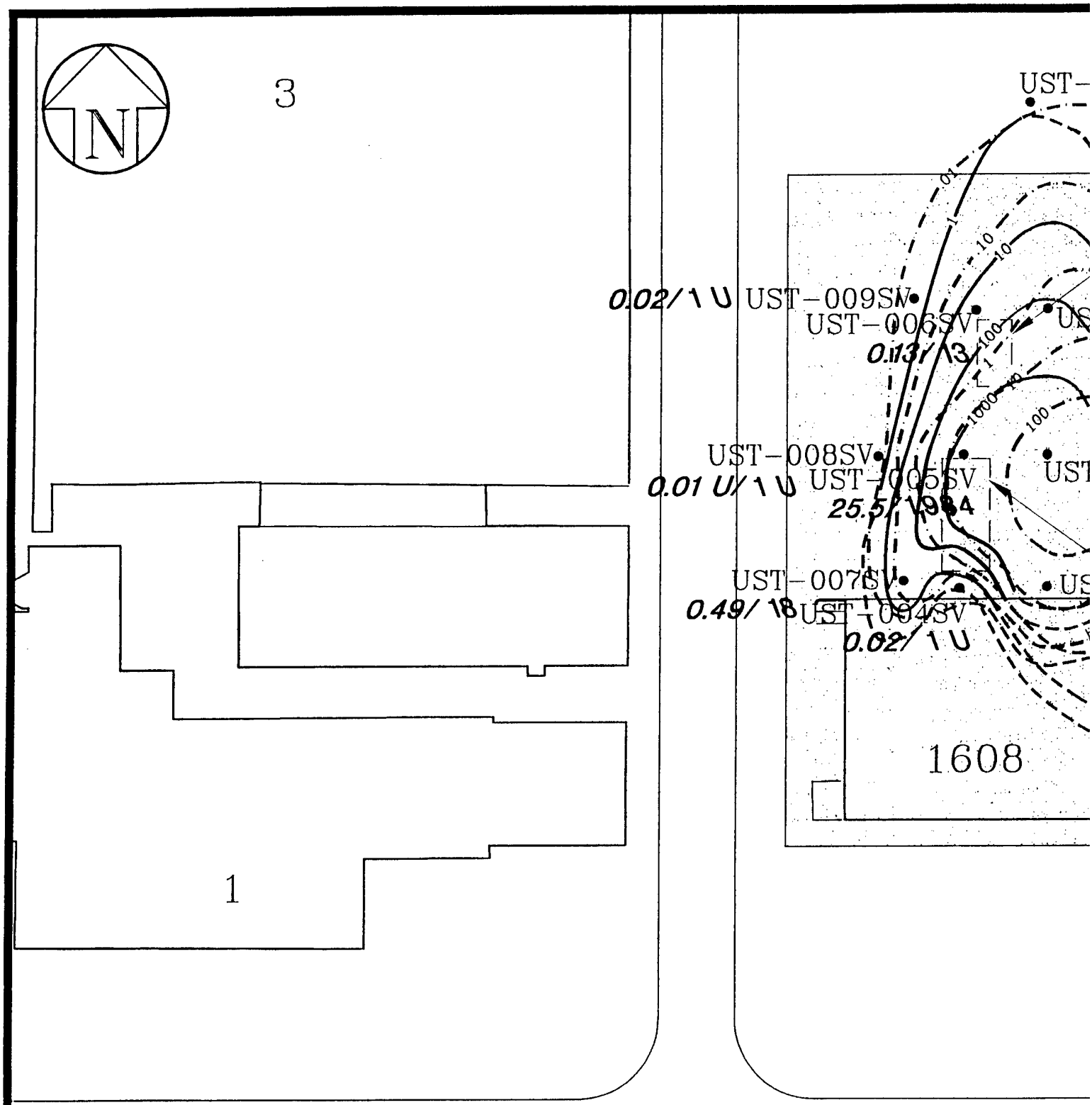
During Phase 1, the on-site laboratory performed headspace analysis of soil samples. Results for compounds detected in at least one sample are summarized in Table 3.2. Twenty-eight samples were analyzed. Benzene was detected at 464.0 ppm and toluene at 325.4 ppm in the 6-8 foot sample collected from monitoring well UST-007MW. Elevated levels of solvent compounds were also detected in the sample. This sample was taken at the groundwater interface directly southwest of the former UST location.

3.1.4.2 Phase 1 Fixed-Base Laboratory Results

Table 3.3 summarizes the fixed-base laboratory analysis results for soil samples collected during Phase 1. Twenty samples were analyzed. TPH (gasoline) was detected in UST-002BH (3,500 milligrams/kilograms (mg/kg)), and UST-004BH (130 mg/kg) at concentrations exceeding the soil RCL (100 mg/kg). These samples were all collected from 5-6 feet BLS at the groundwater interface. The only compound detection exceeding Level II RCLs for soil is benzene (RCL 0.3 mg/kg) which was detected in UST-002BH (1.3 mg/kg) 11-12 feet BLS.

3.1.4.3 Phase 2 On-Site Laboratory Results

The Phase 2 on-site laboratory used an extraction technique to analyze for BTEX and halogenated hydrocarbons using EPA Method 8010/8020. Modified EPA Method 8015 was used for TPH (diesel and gasoline) analyses. Thirty-nine samples were analyzed. Table 3.4 lists the results for all compounds detected in at least one soil sample. TPH (gasoline) and benzene were



SOURCE: BASE MAP FROM CIVIL ENGINEERING, UTAH ANGB, SALT LAKE CITY, UTAH, 1994.

FIGURE 3.4

SALT\SAMP-L04

BENZENE AND TOTAL V
DETECTED IN SOIL VAPOR
151st ARW, U
Salt Lake

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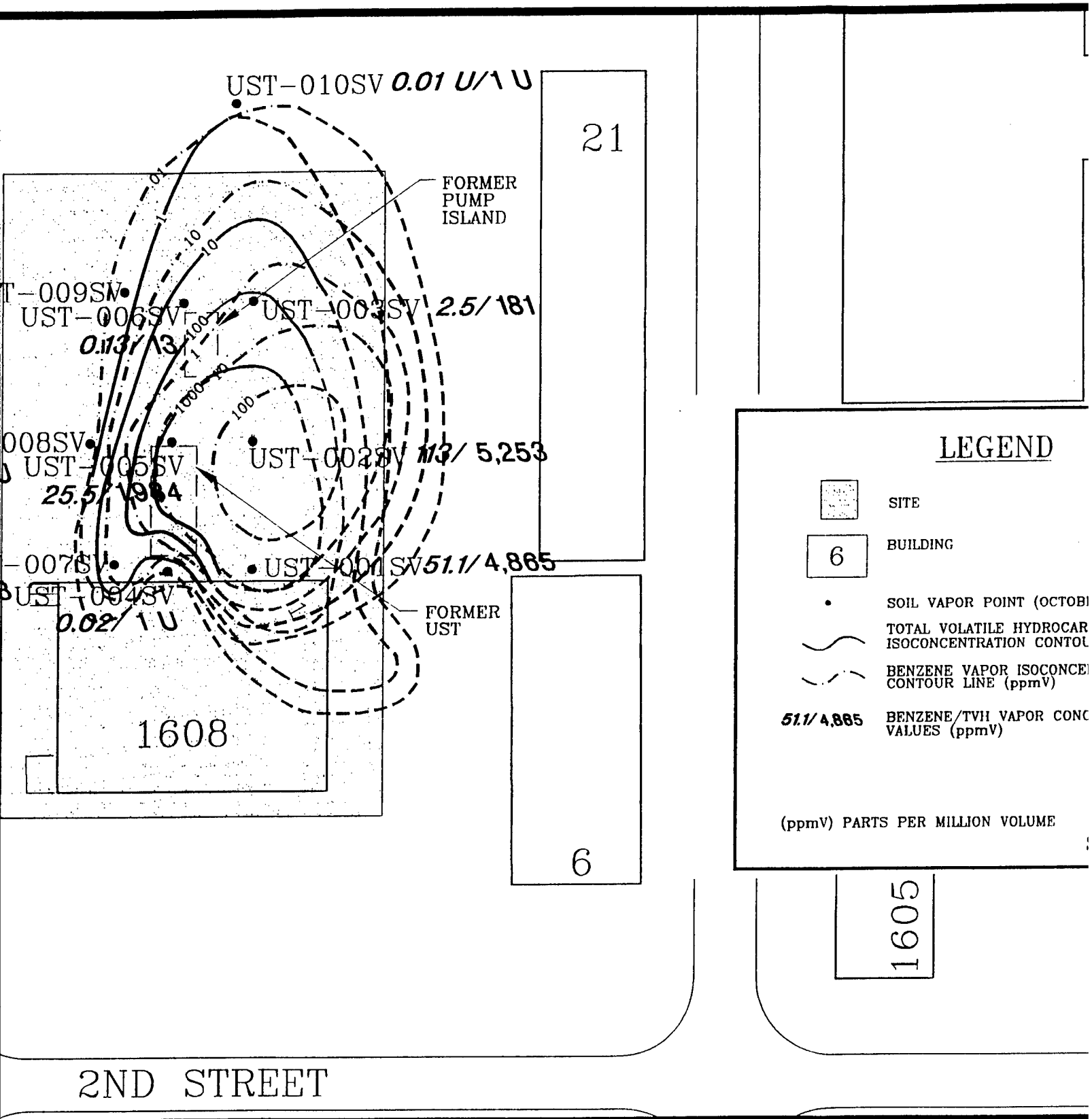

NE AND TOTAL VOLATILE HYDROCARBONS
D IN SOIL VAPOR SAMPLES OCTOBER 1994
151st ARW, Utah ANG Base
Salt Lake City, Utah

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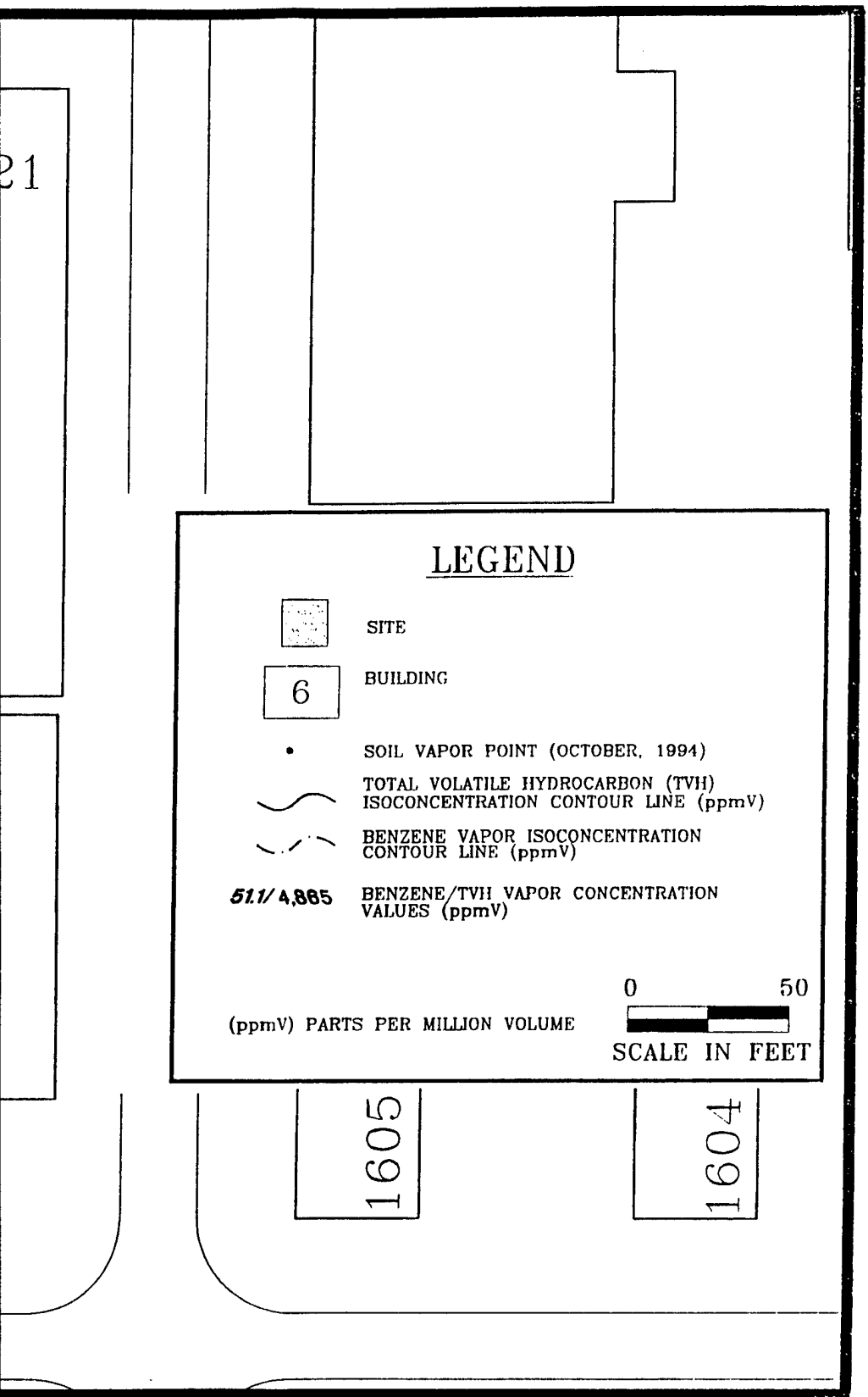

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Table 3.2
Phase 1 On-Site Field GC Results – Soil Headspace –
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample ID Number/ Interval (feet BLS)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylene (mg/kg)	TCE (mg/kg)	cis-1,2-DCE (mg/kg)	PCE (mg/kg)
UST-001BH 1 - 2	NA	NA	NA	NA	NA	NA	NA
UST-001BH 5 - 6	.046	.079	.015	ND	.104	.001	.051
UST-001BH 10 - 11	.004	.007	.106	ND	.005	.032	ND
UST-002BH 1 - 2	.004	.012	.028	.090	.009	.001	.036
UST-002BH 5 - 6	.001U	.001U	.001U	.001U	.001U	.001U	.001U
UST-002BH 11 - 12	.001U	.001U	.785	10.81	.001U	.001U	.130
UST-003BH 1 - 2	.001U	.001U	.001U	.001U	.001U	.001U	.001U
UST-003BH 5 - 6	.001U	.001U	.001U	.001U	.001U	.001U	.001U
UST-003BH 9 - 10	.001U	.001U	.001U	.001U	.001U	.001U	.001U
UST-004BH 1 - 2	.001U	.001U	.323	.001U	.001U	.003	.001U
UST-004BH 5 - 6	.001U	.001U	.001U	.001U	.001U	.001U	.001U
UST-004BH 13 - 14	.028	.013	.001U	.001U	.004	.007	.001U
UST-005BH 1 - 2	.012	.001U	.001U	.001U	.001U	.047	.001U
UST-005BH 2 - 3	.001U	.017	.008	.254	.007	.001U	.001U
UST-005BH 5 - 6	.002	.001	.001U	.001U	.001	.001U	.001U
UST-005BH 9 - 10	.001U	.001U	.015	.001U	.001U	.195	.001U
UST-006BH 1 - 2	.032	.001U	.001U	.001U	.001U	.102	.001U
UST-006BH 2 - 3	.015	.001U	.001U	.001U	.001U	.008	.001U
UST-006BH 5 - 6	.001U	.001U	.036	1.86	.001U	.007	.001U
UST-006BH 9 - 10	.001U	.001U	.001U	.001U	.001U	.001U	.001U
UST-007MW 6 - 8	**464**	**325**	.63	5.86	222.3	136.26	527.4
UST-007MW 9 - 10	.046	.001U	.001U	.001U	.001U	.098	.001U
UST-007MW 12 - 14	.001U	.001U	.001U	.001U	.001U	.001U	.001U
UST-008MW 5 - 7	.001U	.001U	.001U	.001U	.001U	.001U	.001U
UST-008MW 10 - 12	.001U	.001U	.001U	.001U	.001U	.001U	.001U
UST-008MW 13 - 15	.001U	.001U	.001U	.001U	.001U	.001U	.001U
UST-009MW 8 - 10	.001U	89	.001U	.001U	.001U	.001U	.001U
UST-009MW 13 - 15	.001U	.001U	.001U	.001U	.001U	.001U	.001U
Utah RCL	**0.3**	**300**	**200**	**3,000**	**NA**	**NA**	**NA**

UST – Underground Storage Tank.
NA – Not Applicable.
feet BLS – feet Below Land Surface.
RCL – Recommended Cleanup Level.
U – Compound analyzed for but not detected. Number indicates the detection limit.
mg/kg – milligrams per kilogram.
TCE – Trichloroethene.
DCE – Dichloroethene.
PCE – Tetrachloroethene.
BH – Borehole.
MW – Monitoring Well.

detected at concentrations exceeding Level II RCLs for soil in four samples each. TPH (gasoline) (RCL 100 mg/kg) ranged from 121 to 273 mg/kg and benzene (RCL 0.3 mg/kg)

Table 3.3
Phase 1 Fixed-Base Laboratory Results – Soils –
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample ID Number/ Interval (feet BLS)	TPH (gasoline) (mg/kg)	TPH (diesel) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)
UST-001BH 1 - 2	0.50U	10U	.005U	.006	.005U	.005U
UST-001BH 5 - 6	56	10U	.023	.005U	.012	.005U
UST-001BH 10 - 11	3.3	10U	.005U	.005U	.039	.013
UST-002BH 1 - 2	0.7	10U	.005U	.005U	.005U	.007
UST-002BH 5 - 6	**3500**	100	5.0	5.0	5.0	25
UST-002BH 11 - 12	23	10U	**1.3**	.69	.069	.340
UST-003BH 1 - 2	0.50U	10U	.005U	.005U	.005U	.005U
UST-003BH 5 - 6	0.50U	10U	.005U	.005U	.005U	.005U
UST-003BH 9 - 10	0.50U	10U	.005U	.005U	.005U	.005U
UST-004BH 1 - 2	0.50U	10U	.005U	.005U	.005U	.005U
UST-004BH 5 - 6	**130**	10U	.005U	.005U	.005U	.005U
UST-004BH 13 - 14	0.50U	10U	.005U	.005U	.005U	.005U
UST-005BH 1 - 2	0.50U	10U	.005U	.005U	.005U	.005U
UST-005BH 2 - 3	0.50U	10U	.005U	.005	.005U	.005U
UST-005BH 5 - 6	0.50U	10U	.005U	.005U	.005U	.005U
UST-005BH 9 - 10	0.50U	10U	.005U	.005U	.005U	.005U
UST-006BH 1 - 2	0.50U	10U	.005U	.005U	.005U	.005U
UST-006BH 2 - 3	0.50U	10U	.005U	.005U	.005U	.005U
UST-006BH 5 - 6	0.50U	10U	.005U	.005U	.005U	.005U
UST-006BH 9 - 10	0.50U	10U	.005U	.005U	.005U	.005U
Utah RCL	**100**	**300**	**.30**	**300**	**200**	**3,000**

UST – Underground Storage Tank.
NA – Not Applicable.
U – Compound analyzed for but not detected. Number indicates the detection limit.
RCL – Recommended Cleanup Level.
mg/kg – milligrams per kilogram.
TPH – Total Petroleum Hydrocarbons.
BH – Borehole.

ranged from 0.33 to 8.76 mg/kg in these samples. Borings and sample intervals exceeding RCLs were UST-011GP 4-6 feet BLS and 9-11 feet BLS, UST-012GP 4-6 feet BLS, and UST-019GP 4-6 and 6-8 feet BLS. Like the Phase 1 results, most samples exceeding RCLs were collected from depths immediately above and below the water table.

3.1.4.4 Phase 2 Fixed-Base Laboratory Results

Table 3.5 summarizes the Phase 2 fixed-base laboratory results from the 11 samples that were analyzed. TPH (gasoline), TPH (diesel), and benzene were all detected at concentrations exceeding Level II RCLs. TPH (gasoline) was 268 mg/kg for UST-019GP 6-8 feet BLS. TPH (diesel) (RCL 300 mg/kg) was also detected above RCLs and UST-010MW 10-11.5 feet

Table 3.4
Phase 2 On-Site Laboratory Results – Soils –
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample ID Number/Interval (feet BLS)	TPH (gasoline) (mg/kg)	TPH (diesel) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	cis-1,2-DCE (mg/kg)	PCE (mg/kg)
UST-009GP 4 - 6	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-009GP 6 - 8	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-009GP 11 - 13	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-010GP 4 - 6	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-010GP 4 - 6 DUP	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-010GP 6 - 8	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-010GP 11 - 13	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-011GP 4 - 6	**121**	20U	.230	.700	.690	.980	.05U	.05U
UST-011GP 6 - 8	28	20U	.120	.090	.130	.190	.05U	.05U
UST-011GP 9 - 11	**201**	20U	**.720**	.960	.650	2.33	.05U	.05U
UST-012GP 4 - 6	39	20U	**.330**	1.090	.860	1.59	.05U	.05U
UST-012GP 6 - 8	10U	20U	.05U	.310	1.64	.520	.05U	.05U
UST-012GP 11 - 13	10U	20U	.05U	.05U	.380	.300	.05U	.05U
UST-013GP 4 - 6	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-013GP 6 - 8	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-013GP 11 - 13	10U	20U	NA	NA	NA	NA	NA	NA
UST-013GP 13 - 15	NA	NA	.05U	.05U	.05U	.05U	.05U	.05U
UST-014GP 4 - 6	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-014GP 6 - 8	10U	20U	.05	.05U	.05U	.05U	.05U	.05U
UST-014GP 11 - 13	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-015GP 4 - 6	10U	20U	.05U	.05U	.05U	.05U	.130	.100
UST-015GP 6 - 8	10U	20U	.05U	.05U	.05U	.05U	.490	.090
UST-015GP 11 - 13	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U

Table 3.4 (Concluded)
Phase 2 On-Site Laboratory Results – Soils
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample ID Number/Interval (feet BLS)	TPH (gasoline) (mg/kg)	TPH (diesel) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	cis-1,2-DCE (mg/kg)	PCE (mg/kg)
UST-016GP 4 - 6	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-016GP 6 - 8	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-016GP 11 - 13	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-017GP 4 - 6	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-017GP 6 - 8	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-017GP 11 - 13	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-018GP 4 - 6	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-018GP 6 - 8	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-019GP 4 - 6	**273**	59	**1.92**	1.44	2.16	21.60	.05U	.05U
UST-019GP 6 - 8	**221**	20	**8.76**	30.20	9.60	46.44	.05U	.05U
UST-019GP 11 - 13	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-020GP 4 - 6	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-020GP 6 - 8	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-020GP 11 - 13	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-021GP 4 - 6	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
UST-021GP 6 - 8	10U	20U	.05U	.05U	.05U	.05U	.05U	.05U
Utah RCL	**100**	**300**	**.30**	**300**	**200**	**3,000**	**NA**	**NA**

Bold values exceed RCLs.
UST – Underground Storage Tank.
NA – Not Applicable.
RCL – Recommended Cleanup Level.
U – Compound analyzed for but not detected. Number indicates the detection limit.
Note: Sample UST-014GP 6' - 8' Exhibited TPH (oil and grease) concentrations of 782 mg/kg. The Utah RCL for TPH (oil and grease) is 600 mg/kg.

mg/kg – milligrams per kilogram.
feet BLS – feet Below Land Surface.
DUP – Duplicate.
TPH – Total Petroleum Hydrocarbons.
TCE – Trichloroethene.
DCE – Dichloroethene.
PCE – Tetrachloroethene.
GP – Geoprobe™.

Table 3.5
Phase 2 Fixed-Base Laboratory Results – Soils –
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample Location/Interval (feet/BLS)	TPH (gasoline) (mg/kg)	TPH (diesel) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylene (mg/kg)	trans-1,2-DCE (mg/kg)	TCE (mg/kg)	1,4-DCE (mg/kg))
UST-009GP 4 - 6	10U	10U	.02U	.02U	.02U	.02U	.02U	.02U	.02U
UST-013GP 4 - 6	10U	10U	.02U	.02U	.02U	.02U	.02U	.02U	.02U
UST-014GP 6 - 8	400U	**782***	.02U	.041	.109	.303	.02U	.02U	.02U
UST-017GP 4 - 6	10U	10U	.02U	.02U	.02U	.02U	.02U	.02U	.02U
UST-018GP 4 - 6	10U	10U	.02U	.02U	.02U	.02U	.02U	.02U	.02U
UST-019GP 6 - 8	**268**	103	**3.12**	9.44	3.02	17.27	.001U	.001U	1.5
UST-020GP 4 - 6	10U	10U	.02U	.02U	.02U	.02U	.02U	.02U	.02U
UST-010MW 10 - 11.5	100U	**1,640**	.02U	.02U	.02U	.02U	.02U	.02U	.02U
UST-011MW 13 - 15	10U	10U	.02U	.02U	.02U	.02U	.03	1.27	.02U
UST-012MW 2 - 3.5	10U	10U	.02U	.02U	.02U	.02U	.02U	.02U	.02U
UST-012MW 5 - 6.5	10U	10U	.02U	.02U	.02U	.02U	.02U	.02U	.02U
Utah RCL	**100**	**300**	**.30**	**300**	**200**	**3,000**	**NA**	**NA**	**NA**

* – Run on Oil and Grease Standard.
UST – Underground Storage Tank.
NA – Not Applicable.
RCL – Recommended Cleanup Level.
U – Compound analyzed for but not detected. Number indicates the detection limit.
feet BLS – feet Below Land Surface.
mg/kg – milligrams per kilogram.
TPH – Total Petroleum Hydrocarbons.
TCE – Trichloroethene.
DCE – Dichloroethene.
GP – Geoprobe™.
MW – Monitoring Wells.
Bold values exceed RCLs.

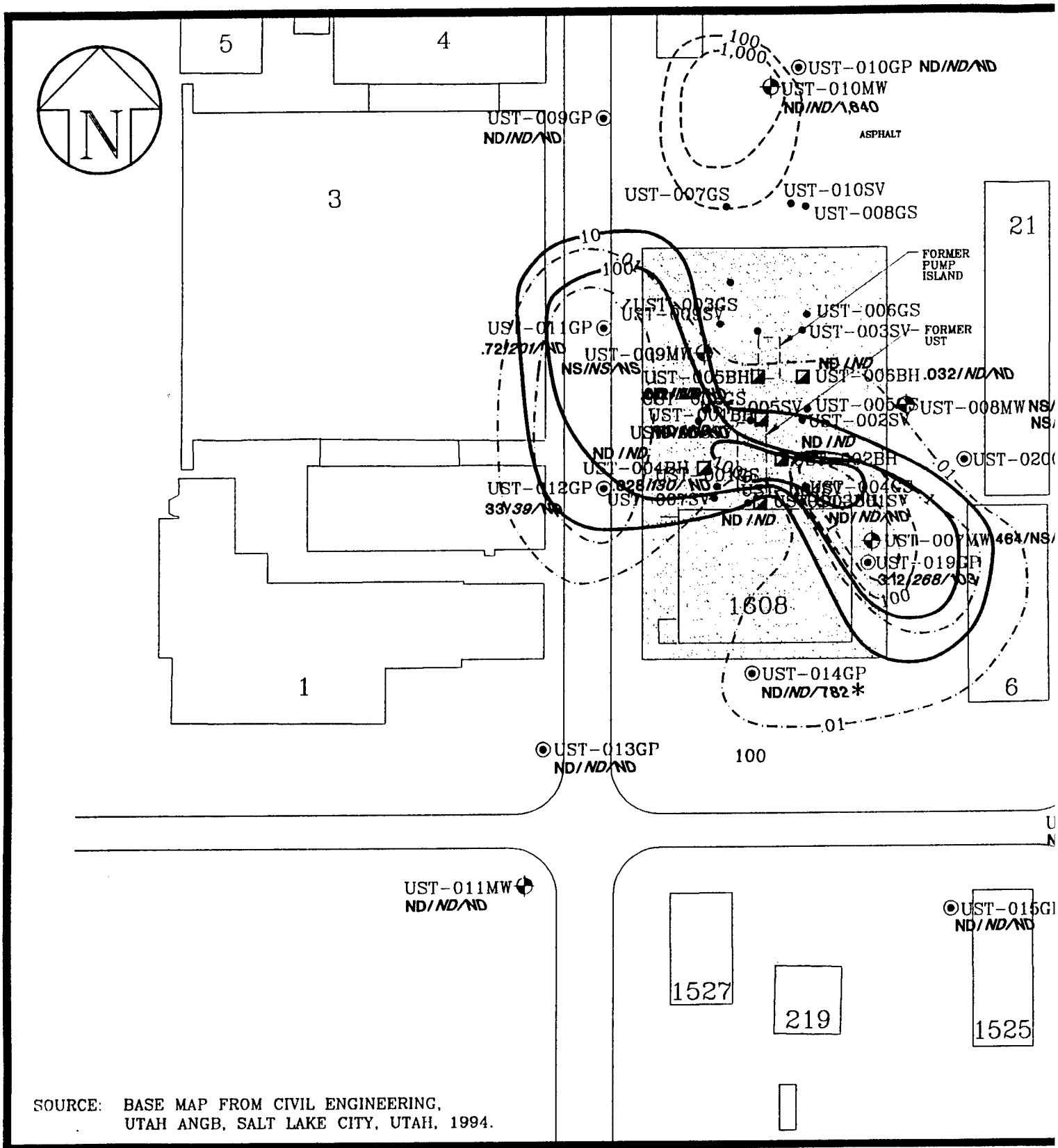
BLS (1640 mg/kg). TPH (oil and grease) concentrations above RCLs were detected at UST-014GP 6-8 feet BLS (782 mg/kg). The UST-010MW detection appears to be an anomaly as no other compounds have been detected in this area. Benzene was detected at 3.12 mg/kg in UST-019GP 6-8 feet BLS. The detection at UST-014GP appears unrelated to the release at the subject site due to compositional differences.

3.1.5 Extent of Soil Contamination

The lateral extent of benzene, TPH (gasoline), and TPH (diesel) contamination is illustrated in Figure 3.5. The lateral extent of TCE and cis-1,2-DCE detected in soil samples is illustrated in Figure 3.6. The highest concentration detected from each borehole is posted except when both fixed-base laboratory and screening laboratory results are available for the same sample. Then the confirmation fixed-base laboratory results are presented. The western edge of contamination has been defined adjacent to several buildings that restrict further westward delineation. The vertical extent of contamination is from 4-8 feet BLS except for UST-011GP, where contamination was detected at the 9-11 feet BLS interval. Benzene contamination is also detected primarily in the 4-8 feet BLS interval except for UST-002BH and UST-011GP, where contamination exceeding the RCL (0.3 mg/kg) is located at the 9-12 feet BLS interval.

The extent TPH (diesel and gasoline) contamination is illustrated in Figure 3.5. At UST-014GP and UST-019GP, this contamination is detected at the 6-8 feet BLS interval. TPH (diesel) contamination was confirmed in a soil sample from monitoring well UST-010MW (10-11.5 feet BLS) by fixed-base laboratory analytical results at a concentration of 1,640 mg/kg. Laboratory Quality Assurance/Quality Control (QA/QC) data did not indicate a problem with the analysis. The field-base laboratory analytical results indicated the presence of TPH (diesel) in groundwater at that location, however, two rounds of groundwater sampling from monitoring well UST-010MW did not confirm the presence of TPH (diesel) by fixed-base laboratory confirmation analyses. The field-base laboratory analytical results did not indicate TPH (diesel) in the soil samples. The fixed-base laboratory results confirm the presence of TPH (diesel) in the soil exceeding Level II RCLs. The detection is judged to be anomalous with respect to the source in that it is located at distance from the source, and multiple soil and groundwater sampling points directly between the area and the source show no detectable concentrations of TPH (diesel). Based on the data, TPH (diesel) contaminated soil detected at monitoring well UST-010MW is not associated with the Former UST, Building 1608 UST site.

The extent of TPH (gasoline) contaminated soil is shown on Figure 3.5. TPH (gasoline) concentrations were detected at depths ranging from 4 to 11 feet BLS. The greatest

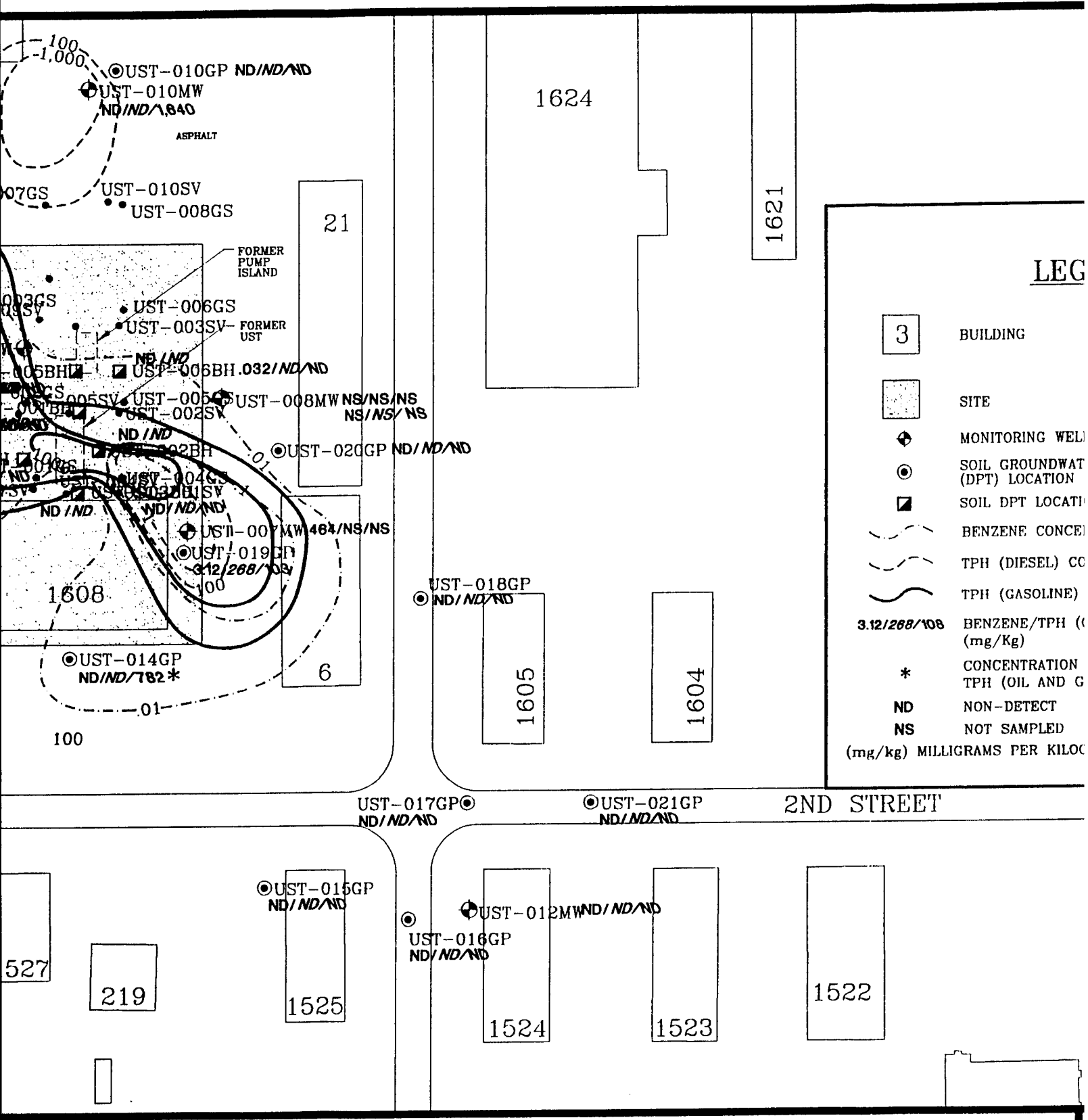


SOURCE: BASE MAP FROM CIVIL ENGINEERING, UTAH ANGB, SALT LAKE CITY, UTAH, 1994.

FIGURE 3.5

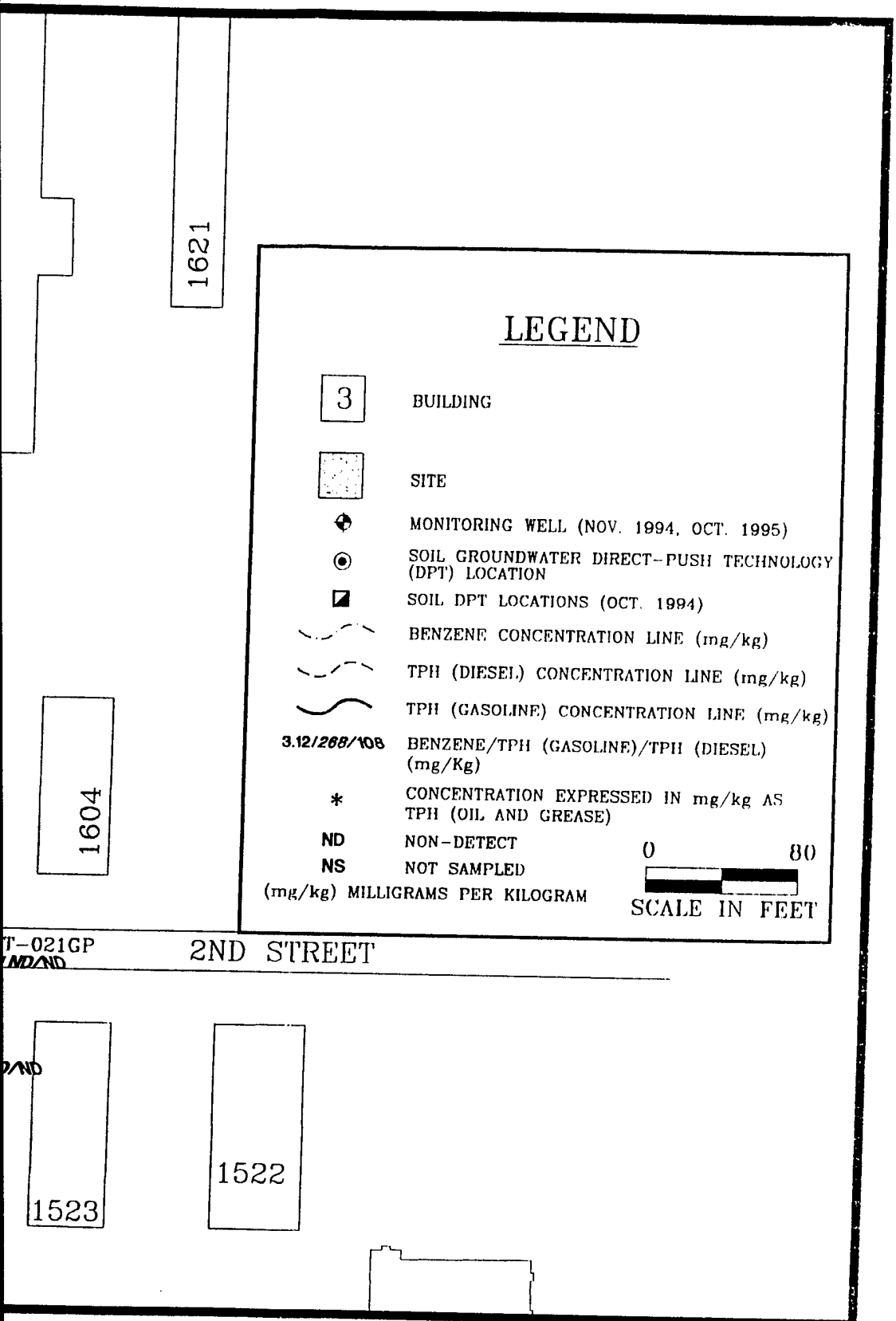
BENZENE, TPH (GASOLINE)
FIXED-BASE AND ON-SITE LABORA
151st ARW, U
Salt Lake

SALT\SAMP-LOC



ENE, TPH (GASOLINE) AND TPH (DIESEL) IN SOIL
AND ON-SITE LABORATORIES MAXIMUM CONCENTRATIONS
151st ARW, Utah ANG Base
Salt Lake City, Utah

(2)



EL) IN SOIL
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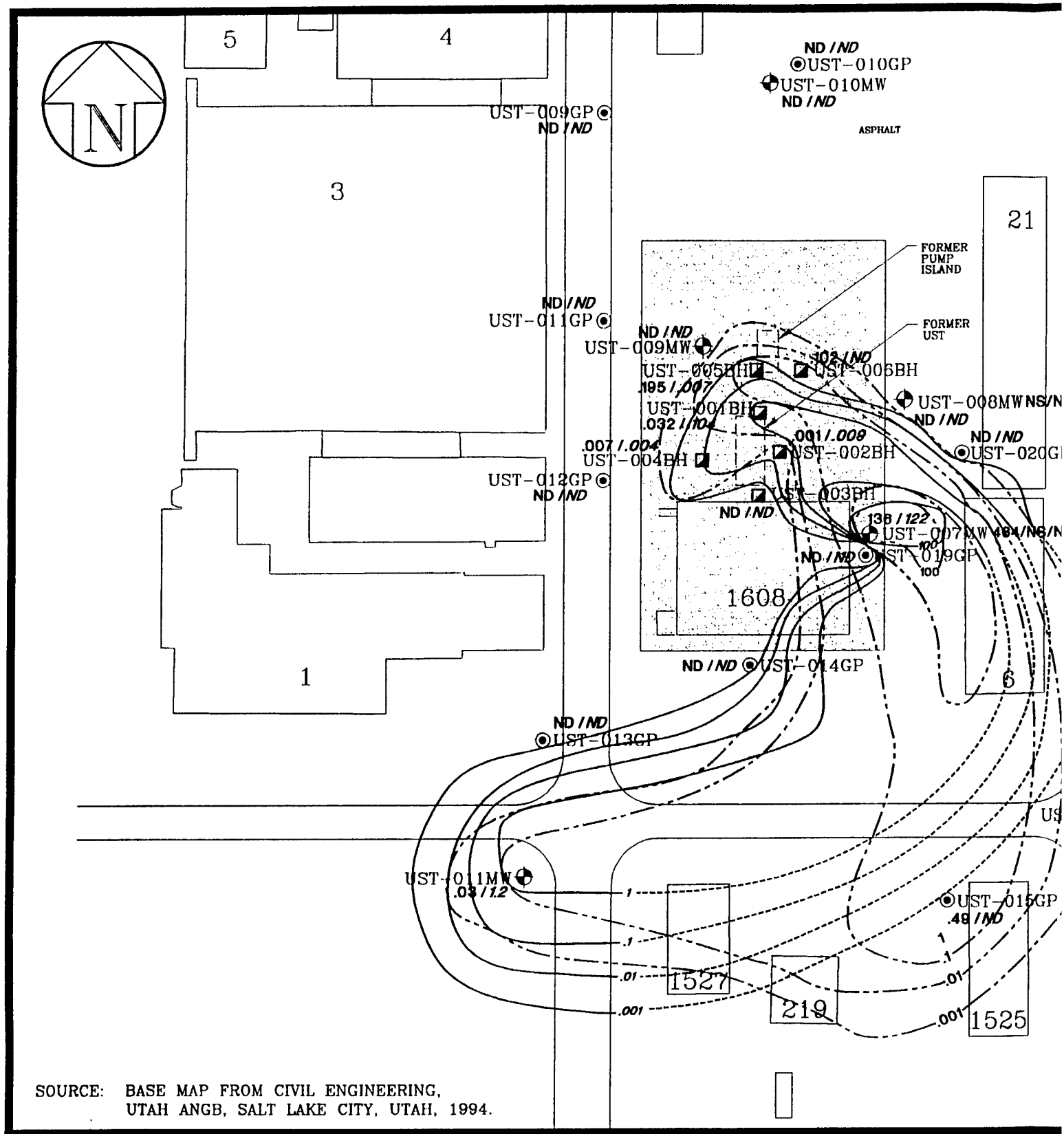
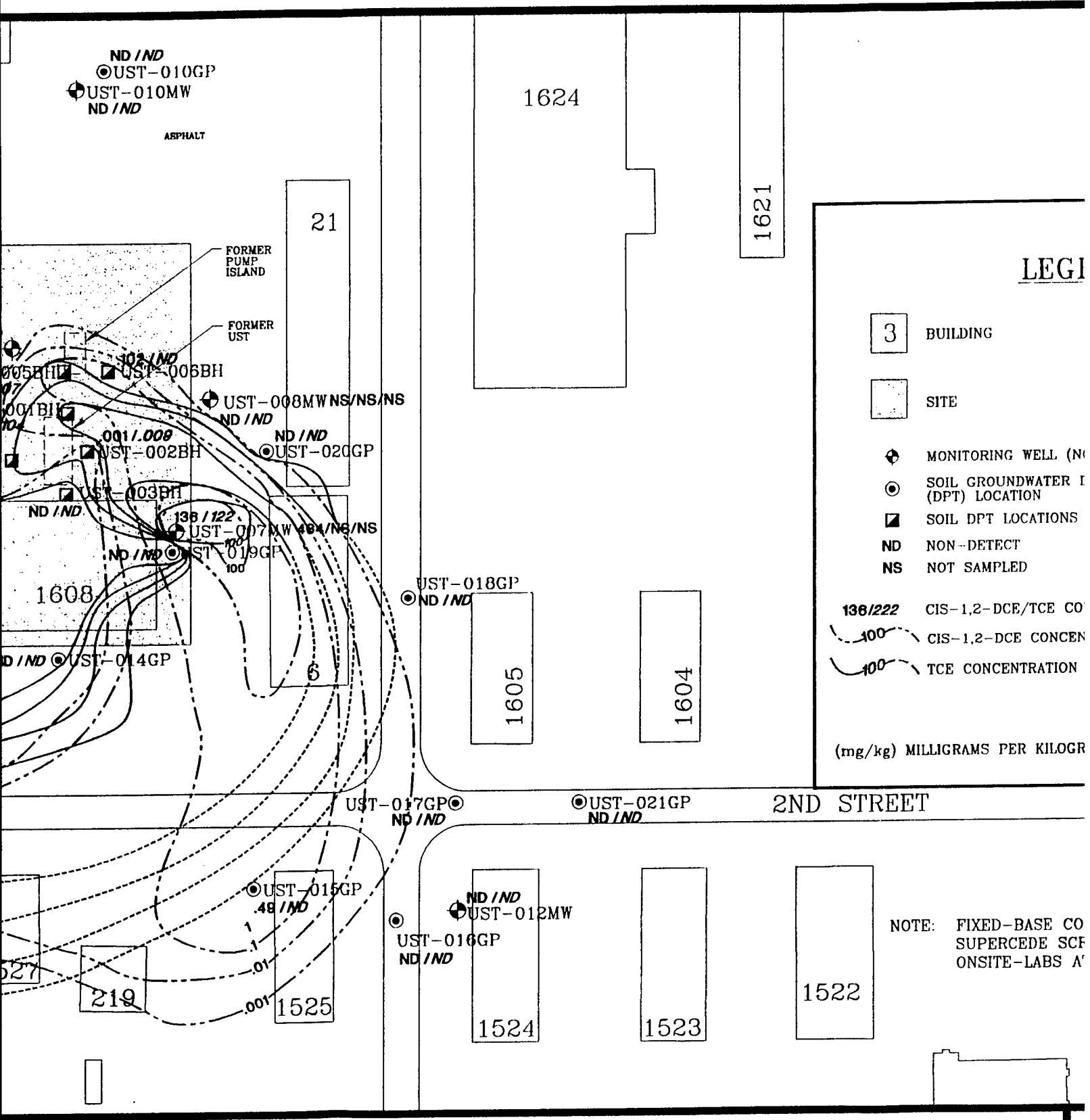


SOURCE: BASE MAP FROM CIVIL ENGINEERING, UTAH ANGB, SALT LAKE CITY, UTAH, 1994.

FIGURE 3.6

TCE AND CIS-1,
FIXED-BASE AND ON-SITE LABORA
151st ARW, Ut
Salt Lake

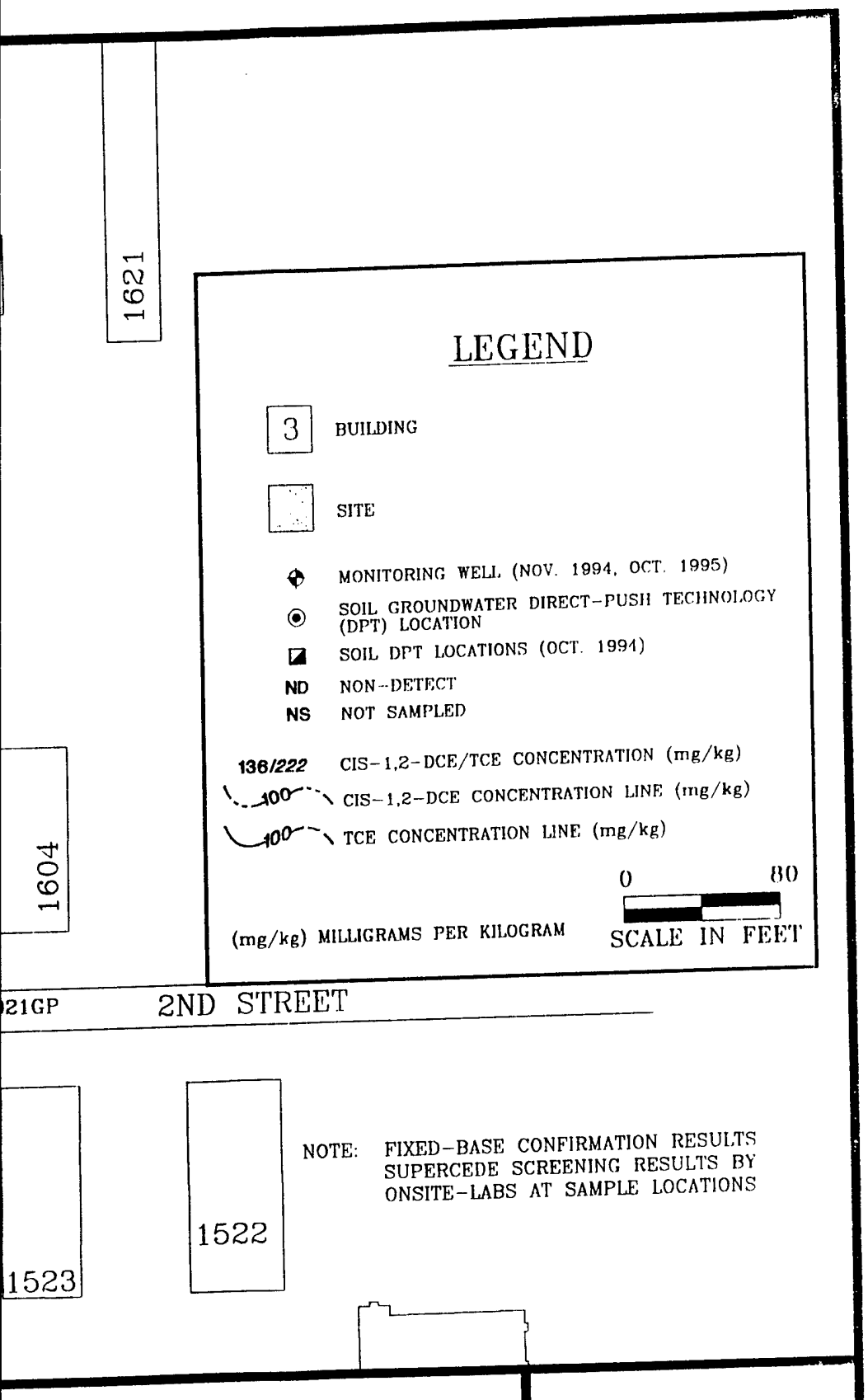
SALT\SAMP-LOC



TCE AND CIS-1,2-DCE IN SOILS
AND ON-SITE LABORATORIES MAXIMUM CONCENTRATIONS

151st ARW, Utah ANG Base

Salt Lake City, Utah


1621
LEGEND
3 BUILDING
SITE
MONITORING WELL (NOV. 1994, OCT. 1995)
SOIL GROUNDWATER DIRECT-PUSH TECHNOLOGY (DPT) LOCATION
SOIL DPT LOCATIONS (OCT. 1994)
ND NON-DETECT
NS NOT SAMPLED
136/222 CIS-1,2-DCE/TCE CONCENTRATION (mg/kg)
100 CIS-1,2-DCE CONCENTRATION LINE (mg/kg)
100 TCE CONCENTRATION LINE (mg/kg)
0 80
(mg/kg) MILLIGRAMS PER KILOGRAM
SCALE IN FEET
1604
21GP
2ND STREET
1523
1522
NOTE: FIXED-BASE CONFIRMATION RESULTS SUPERCEDE SCREENING RESULTS BY ONSITE-LABS AT SAMPLE LOCATIONS
CONCENTRATIONS
OPTEC II
OPERATIONAL TECHNOLOGIES CORPORATION
APRIL 1996

3

concentrations (3,500 mg/kg) was detected in the 5 to 6-foot interval soil sample from DPT location UST-002BH, located approximately 6 feet east of the UST excavation.

A soil sample collected from DPT location UST-014GP (6-8 feet BLS) exhibited 782 mg/kg of TPH as an oil and grease fraction. Based on the composition, the contamination detected is not associated with the UST release.

3.1.6 Analytical Results of Trip Blanks, Rinseate Blanks, and Field Blanks

Quality assurance samples were collected throughout both phases of the SSI. Trip blank samples accompanied fixed-base laboratory soil samples and were analyzed for the same volatile compounds as the soil samples. All results were below detection limits indicating there was no cross-contamination of samples during shipping. Rinseate blanks were collected by pouring deionized water over the decontaminated soil sampling equipment into sample jars. Rinseate blanks were analyzed for the same parameters as the soil samples. Again, all results were below detection limits, indicating that the decontamination procedure was effective for preventing cross-contamination. Field blanks were collected during each phase of field work to verify that the water used for decontamination was clean. All field blank sample results were below detection limits, indicating that the decontamination fluid did not impact sample results.

3.2 GROUNDWATER

3.2.1 Groundwater Gradient and Flow Direction

Groundwater levels were measured during both phases of the SSI and are presented in Table 3.6. Groundwater depth, measured during Phase 1 at three site monitoring wells ranged from 4.75 to 5.55 feet below top of casing (BTOC) and was present under water table conditions. Groundwater flow direction during the Phase 1, sampling round one, 3 November 1994, was to the southeast, at a hydraulic gradient of 0.003 feet per foot. Groundwater flow direction during the Phase 1, sampling round two on 1 March 1995, was to the southwest, at a hydraulic gradient of 0.006 feet per foot. Maps illustrating the potentiometric surface of the groundwater table, measured during the Phase 1 sampling rounds are included as Figures 3.7 and 3.8.

Groundwater levels were also measured during Phase 2 after the installation of three additional monitoring wells. Groundwater depth measured in six site monitoring wells ranged from 5.04 to 6.29 feet BTOC. Figure 3.9 illustrates the groundwater surface during the 24-25 October 1995 sampling round. Groundwater flow during the November 1995 sampling

Table 3.6
Groundwater Level Summary –
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Well	TOC Elev. (MSL)	Depth to Water (ft) 11/3/94	Water Elev. (MSL) 11/3/94	Depth to Water (ft) 3/2/95	Water Elev. (MSL) 3/2/95	Depth to Water (ft) 10/24,25/95	Water Elev. (MSL) 10/24,25/95
UST-007MW	4218.67	5.54	4213.13	5.55	4213.12	6.29	4212.38
UST-008MW	4218.62	5.40	4213.22	4.75	4213.87	5.83	4212.79
UST-009MW	4218.47	5.01	4213.46	4.97	4213.50	5.44	4213.03
UST-010MW	4218.84	NA	NA	NA	NA	5.91	4212.93
UST-011MW	4216.54	NA	NA	NA	NA	5.04	4211.50
UST-012MW	4217.37	NA	NA	NA	NA	5.45	4211.92

TOC – Top of Casing.
Elev. – Elevation.
MSL – Feet above Mean Sea Level.
UST – Underground Storage Tank.
ft – feet.
MW – Monitoring Well.
NA – Not Applicable.

round was also in a southerly direction. The groundwater flow is toward the south/southwest with a hydraulic gradient of .004 feet per foot.

3.2.2 Slug Test Results

Rising head slug tests were performed on the three Phase 1 monitoring wells on 2 March 1995 to determine the hydraulic conductivity of the shallow water table aquifer. Each test was performed by removing an entire well volume of water with a submersible electric pump. The pump was then shut off and the rate of the respondent water level rise within the well was recorded by measuring water pressure using a transducer interfaced with an automatic data logger. Specific details of the field methods and raw data outputs, for the slug tests are provided in Appendix E. Slug test data was analyzed by the Bouwer and Rice method (Bouwer and Rice, 1976) as presented in Geraghty & Miller, Inc.'s, "AQTESOLV" Version 2.0 computer program. The solution elements and critical assumptions are provided in Appendix E.

A summary of the results from the tests is presented in Table 3.7. The slug test data and analyses are presented in Appendix E.

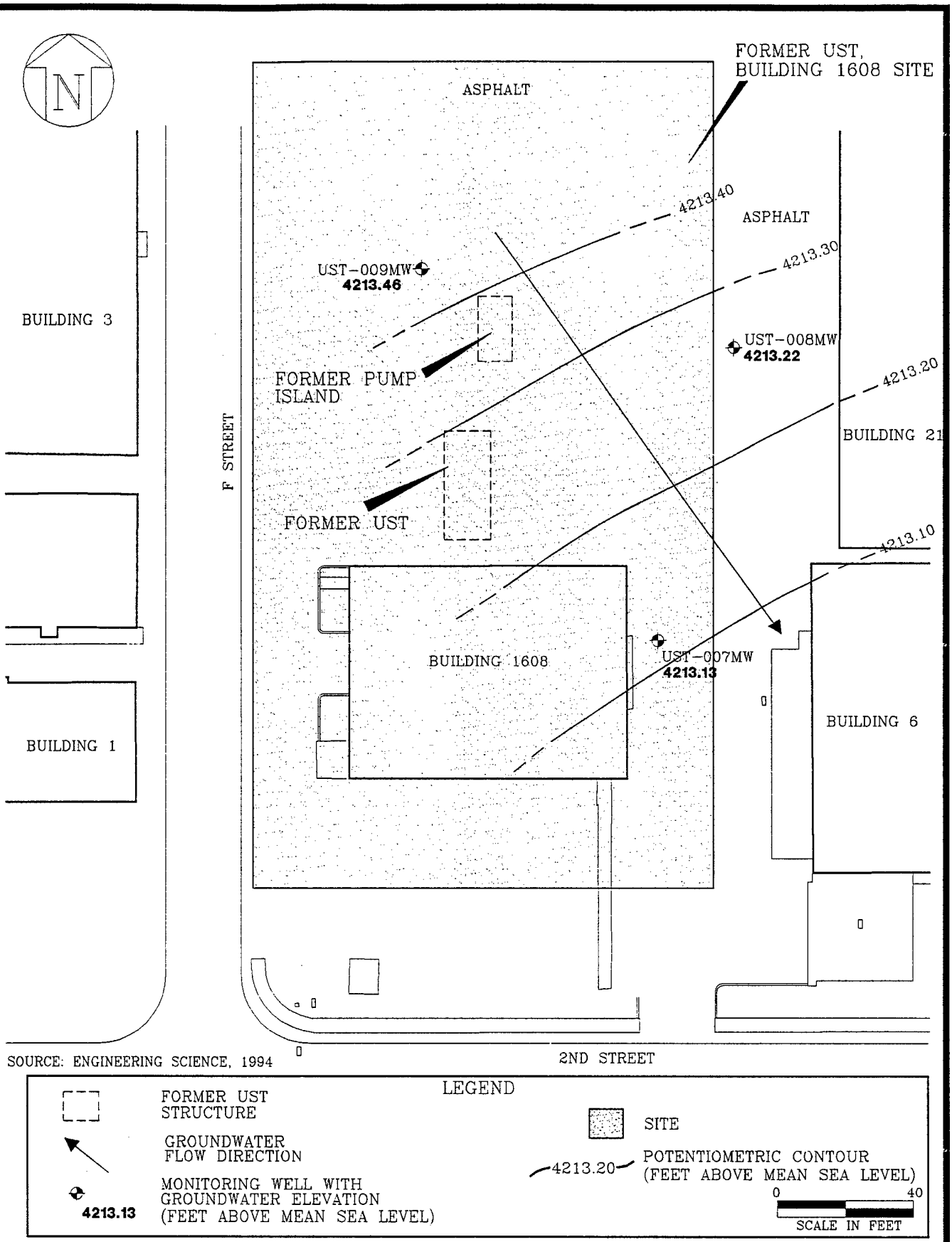


FIGURE 3.7

SALT\STRATA

GROUNDWATER POTENTIOMETRIC SURFACE MAP 3 NOVEMBER 1994

151st ARW, Utah ANG Base
Salt Lake City, Utah

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

APRIL 1996

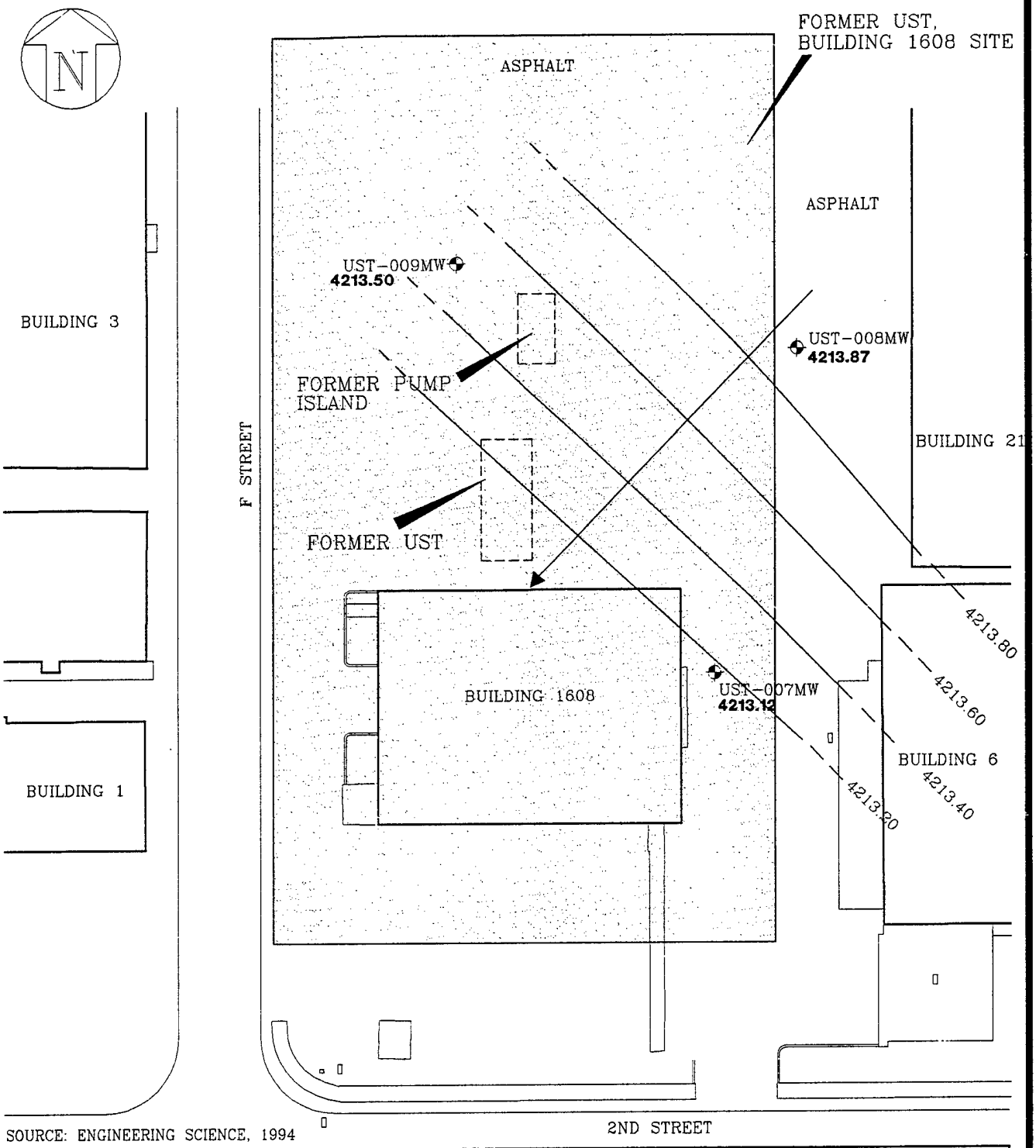


FIGURE 3.8

SALT\STRATA

GROUNDWATER POTENTIOMETRIC SURFACE MAP 1 MARCH 1995

151st ARW, Utah ANG Base
Salt Lake City, Utah

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

APRIL 1996

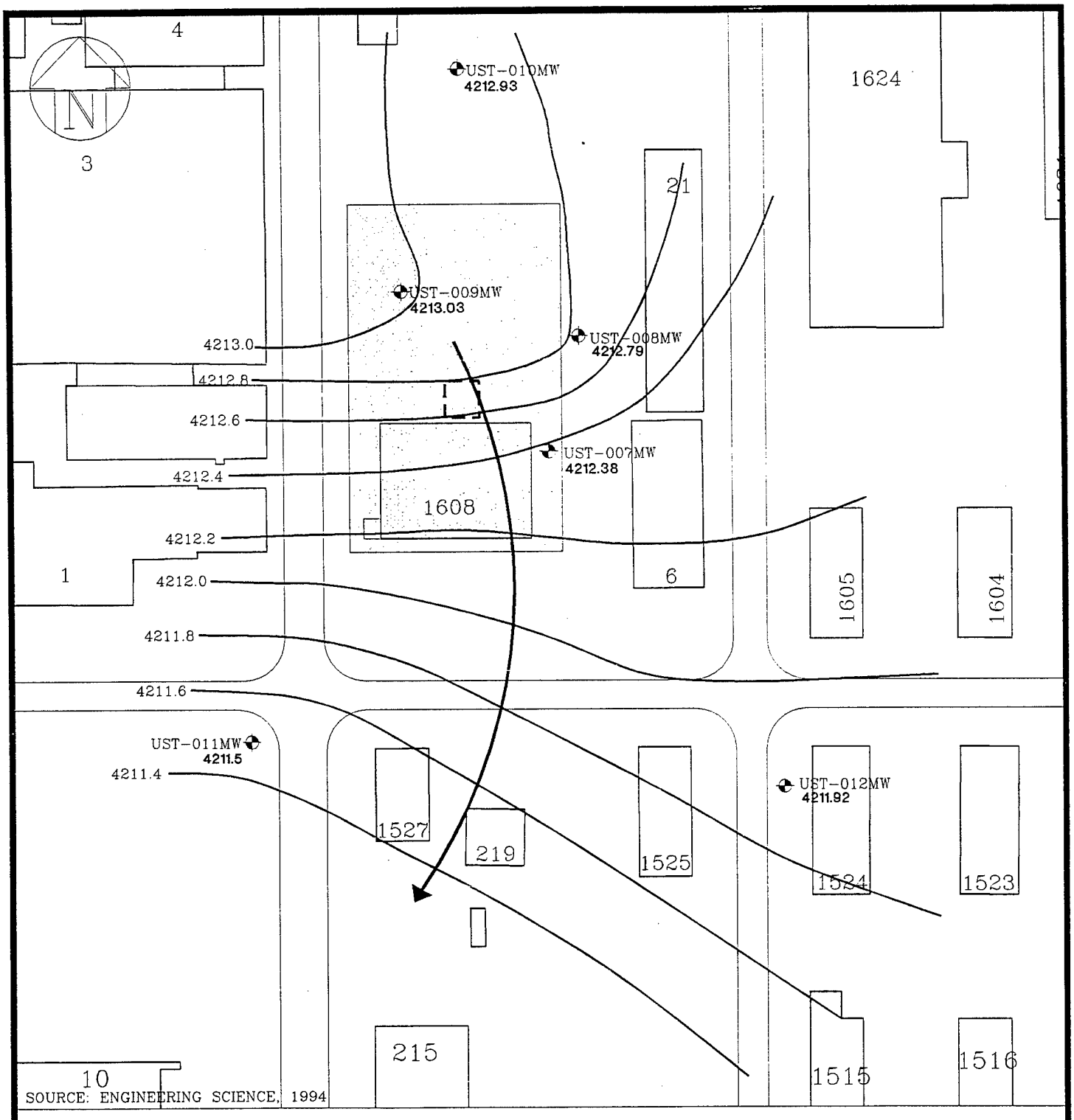


FIGURE 3.9

SALT\GW-POTN

GROUNDWATER POTENTIOMETRIC SURFACE MAP
24,25 OCTOBER 1995
151st ARW, Utah ANG Base
Salt Lake City, Utah

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

APRIL 1996

Table 3.7
Summary of Slug Test Results –
2 March 1995
151st ARW, Utah ANG Base, Salt Lake City, Utah

Monitoring Well	Horizontal Hydraulic Conductivity (gal/day/ft^2)	Horizontal Hydraulic Conductivity (cm/sec)
UST-007MW	21.1	1.11×10^{-3}
UST-008MW	11.6	6.1×10^{-4}
UST-009MW	4.2	2.2×10^{-4}

gal/day/ft^2 – gallons per day per square foot.
cm/sec – centimeters per second.
MW – Monitoring Well.
UST – Underground Storage Tank.

Average groundwater flow velocities were calculated using the horizontal hydraulic conductivities calculated from slug data. The velocities ranged in value from approximately 3 feet per year to 15 feet per year. The velocities were computed from the equation:

$$V = .134 \frac{KI}{n}$$

Where:

V = velocity, in feet per day;
K = horizontal hydraulic conductivity, in gal/day/feet^2;
I = average hydraulic gradient, in feet per foot; and
n = aquifer net effective porosity, no dimensions.

The following values were used:

K = 21.1, 11.6, and 4.2 gal/day/feet^2, based on the aquifer slug tests (see Appendix E);
I = 0.0045 (averaged groundwater gradient at the site); and
n = 0.3.

3.2.3 Groundwater Analytical Results

Groundwater samples were variously analyzed by field screening with a field GC on-site and fixed-base laboratories. Field screening values and the results of on-site- and fixed-base laboratory analyses for groundwater samples compared favorably for samples collected during

both the Phase I and Phase II investigations. Subsections 3.2.3.1 through 3.2.3.4 detail the results from each laboratory.

3.2.3.1 Phase 1 On-Site Laboratory Groundwater Results

Groundwater headspace analysis for TPH (gasoline) and BTEX was performed on samples collected from eight DPT locations. Table 3.8 summarizes these results. All compounds were detected above RCL concentrations for the samples collected at UST-002GS, UST-004GS, and UST-005GS. Detected TPH (gasoline) headspace concentrations at these locations ranged from 2,300 μg/L to 18,380,000 μg/L. Benzene was detected from 1 to 309,200 μg/L, toluene 11,846 to 920,000 μg/L, ethylbenzene from 25,814 to 387,200 μg/L, and xylene from 4 to 1,684,000 μg/L.

3.2.3.2 Phase 1 Fixed-Base Laboratory Groundwater Results

Two rounds of groundwater samples were collected from the three wells installed as part of the Phase 1 SSI. Samples were analyzed for TPH (gasoline and diesel) using modified 8015 and VOCs using 8010/8020. Table 3.9 summarizes results of compounds detected in at least one groundwater sample. TPH (gasoline) occurred in each well and ranged from 60 (UST-009MW) to 100,000 μg/L (UST-007MW). TPH (diesel) was also detected in each well and ranged from 55 (UST-008MW) to 2,100 μg/L (UST-007MW). Benzene was detected in each well and exceeded the MCL (5 μg/L) in UST-009MW (8.4 μg/L) and UST-007MW (13,000 μg/L). Toluene was detected in each well but only exceeded the MCL (700 μg/L) in UST-007MW (12,000 μg/L). Ethylbenzene was detected in each well but only exceeded the MCL (1,000 μg/L) in UST-007MW (1,200 μg/L). Xylene was detected in each well at concentrations below the MCL (10,000 μg/L).

3.2.3.3 Phase 2 On-Site Laboratory Groundwater Results

Thirty-one groundwater samples were collected from 13 DPT locations during the Phase 2 investigation. Samples were analyzed for TPH (gasoline and diesel) by Modified Method 8015 and VOCs by EPA Methods 8010/8020. Results for all compounds detected in at least one groundwater sample are summarized in Table 3.10. TPH (gasoline) was detected in UST-012GPW, UST-013GPW, UST-014GPW, and UST-015GPW. Benzene was detected above the MCL in UST-012GPW 8 and 16 feet BLS, UST-013GPW 17 feet BLS, UST-015GPW 8 feet BLS, UST-017GPW 8 and 16 feet BLS, and UST-019GPW 16 feet BLS. In these samples the

Table 3.8
Phase 1 On-Site Laboratory Results – Groundwater Headspace –
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample Location	TPH (gasoline) (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylene (µg/L)
UST-001GS	1000U	1U	2	1U	1
UST-002GS	**8,220,000**	**16,000**	**11,846**	**42,462**	**20,769**
UST-003GS	2,300	1	1	1U	4
UST-004GS	**18,380,000**	**309,200**	**920,000**	**387,200**	**1,684,000**
UST-005GS	**3,080,000**	**22,248**	**34,147**	**25,814**	**91,085**
UST-006GS	1000U	3	3	1U	4
UST-007GS	1000U	1U	2	1U	1U
UST-008GS	1000U	1U	1U	1U	1U
UST-008GS DUP	1000U	1U	2	1U	1U
MCL	**10,000***	**5**	**700**	**1,000**	**10,000**

µg/L – micrograms per liter.
MCL – Maximum Contaminate Level.
Bolded results exceed MCL.
N/A – Not Available.
* – Utah guideline cleanup level.
No MCL established.
TPH – Total Petroleum Hydrocarbons.
DUP – Duplicate.
U – Parameter not detected at limit shown.
GS – DPT location.

benzene concentrations ranged from 5.4 to 58.4 µg/L. No other petroleum compounds were detected above their respective MCLs.

3.2.3.4 Phase 2 Fixed-Base Laboratory Groundwater Results

Fifteen groundwater samples were collected from 13 DPT locations for analysis at the fixed-base laboratory. Table 3.11 summarizes the results of compounds detected in at least one groundwater sample. Benzene was the only compound detected above its MCL. UST-017GPW had benzene in the 8 feet BLS (5.6 µg/L) and 16 feet BLS (46.1 µg/L) samples. Additionally, two rounds of groundwater samples were collected from the three wells installed during Phase 2 of the SSI.

Table 3.12 summarizes the results for analyses that were detected in at least one groundwater sample. TPH (diesel) was detected in UST-012MW at 19,900 µg/L during the first round of groundwater sampling, but was found at 3,500 µg/L in UST-012MW during the second round of sampling. Benzene was detected above its MCL (5 µg/L) in UST-011MW DUP (7.8 µg/L)

Table 3.9
Phase 1 Fixed-Base Laboratory Results – Monitoring Wells Groundwater – Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample Location	Sample Date	TPH (gasoline) (μg/L)	TPH (diesel) (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl-benzene (μg/L)	Total Xylene (μg/L)
UST-007MW	11/3/94	**47,000**	1,400	**4,600**	**2,300**	240	1,300
	3/1/95	**77,000**	1,200	**11,000**	**8,300**	960	5,600
UST-007MW DUP	3/1/95	**100,000**	2,100	**13,000**	**12,000**	**1,200**	6,900
UST-008MW	11/3/94	50U	55	0.5U	0.5U	0.5U	0.5U
	3/2/95	80	180	2.7	6.9	0.81	4.6
UST-009MW	11/3/95	60	190	0.5U	0.5U	0.5U	0.5U
	3/2/95	130	170	**8.4**	20	2.2	12
MCL		**10,000***	**10,000***	**5**	**700**	**1,000**	**10,000**

μg/L – micrograms per liter.
MCL – Maximum Contaminate Level.
DUP – Duplicate.
Bolded results exceed MCL.
TPH – Total Petroleum Hydrocarbons.
* – Utah guideline cleanup level.
No MCL established.
MW – Monitoring Well.
U – Compound was analyzed for but not detected. Number associated indicates detection limit.

during the second round of groundwater sampling, but below its MCL in the second round primary sample (4.4 μg/L) and first round sample (4.8 μg/L).

3.2.3.5 Extent of Groundwater Contamination

The lateral extent of benzene, TPH (gasoline), and TPH (diesel) detected in groundwater samples is shown on Figure 3.10. The lateral extent of TCE and cis-1,2-DCE detected in groundwater samples is shown on Figure 3.11.

The primary petroleum hydrocarbon analytes detected are TPH (gasoline and diesel) and benzene. The lateral extent of TPH (gasoline) is illustrated on Figure 3.10, which posts the highest groundwater detections at each sample location except when a sample has both screening and confirmation results. The confirmation fixed-base laboratory results supersede the on-site laboratory screening results. Figure 3.10 illustrates a small area of TPH (diesel) contamination just southeast of the Former UST, Building 1608 site. A second small area of contamination is located around UST-011MW. Both areas represent concentrations less than the 10,000 μg/L delineation requirement. This figure also shows the TPH (diesel) detection at UST-012MW

Table 3.10
Phase 2 On-Site Laboratory Results (μg/L) – DPT Groundwater –
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Parameter	MCL (μg/L)	UST-009GPW 8'	UST-009GPW 16'	UST-010GPW 8'	UST-010GPW 16'	UST-011GPW 8'	UST-011GPW 16'	UST-011GPW 16' DUP
TPH (gasoline)	**10,000***	200U	200U	200U	200U	200U	297	325
TPH (diesel)	**10,000***	500U	500U	500U	2,060	500U	500U	500U
Benzene	**5**	1U	1U	1U	1U	2.1	1.0	1.0
Toluene	**700**	1U	1U	1U	1U	2.3	1.2	1.1
Ethylbenzene	**1000**	1U	1U	1U	1U	25.7	27.5	15.0
Xylenes (total)	**10,000**	1U	1U	1U	1U	8.9	6.0	3.7
Trichloroethene	**NA**	1U	1.6	1U	1U	1U	1U	1U
Tetrachloroethene	**NA**	1U	1U	1U	1U	1U	1U	1U
Vinyl chloride	**NA**	1U	1U	1U	1U	1U	1U	1U
1,1-Dichloroethane	**NA**	1U	1U	1U	1U	1U	1U	1U
1,2-Dichloroethane	**NA**	1U	1U	1U	1U	1U	1U	1U
1,1-Dichloroethene	**NA**	1U	1U	1U	1U	1U	1U	1U
trans-1,2-Dichloroethene	**NA**	1U	1U	1U	1U	1U	1U	1U
cis-1,2-Dichloroethene	**NA**	1U	1U	1U	1U	1U	1U	1U
1,1,1-Trichloroethane	**NA**	1U	1U	1U	1U	1U	1U	1U
Dichloromethane	**NA**	1U	1U	1U	1U	1U	1U	1U

Parameter	MCL (μg/L)	UST-012GPW 8'	UST-012GPW 16'	UST-012GPW 16' DUP	UST-013GPW 8'	UST-013GPW 17'	UST-014GPW 8'	UST-014GPW 16'
TPH (gasoline)	**10,000***	**10897**	639	625	200U	201	1460	200U
TPH (diesel)	**10,000***	500U	500U	500U	500U	500U	500U	500U
Benzene	**5**	**58.4**	**32.5**	**33.9**	2.8	**8.0**	2.8	1.3
Toluene	**700**	8.3	2.8	3.1	1.4	1.5	11.9	1.4
Ethylbenzene	**1000**	986	39.7	35.4	13.8	1U	1U	1U
Xylenes (total)	**10,000**	605	24.0	8.1	43.8	65	78.3	1U
Trichloroethene	**NA**	1U	1U	1U	9.4	4.5	1U	1.7
Tetrachloroethene	**NA**	1U	1U	1U	1U	1U	1U	1U
Vinyl chloride	**NA**	1U	1U	1U	1U	1U	1U	1U
1,1-Dichloroethane	**NA**	1U	1U	1U	1U	1U	1U	1U
1,2-Dichloroethane	**NA**	1U	1U	1U	1U	1U	1U	2.6
1,1-Dichloroethene	**NA**	1U	1U	1U	1U	1U	1U	1U
trans-1,2-Dichloroethene	**NA**	1U	1U	1U	1.0	1.0	1U	1U
cis-1,2-Dichloroethene	**NA**	1U	1U	1U	23.2	26.4	1.9	1U
1,1,1-Trichloroethane	**NA**	1U	1U	1U	1U	1U	1U	1U
Dichloromethane	**NA**	1U	1U	1U	1U	1U	1U	1U

Table 3.10 (Continued)
Phase 2 On-Site Laboratory Results (µg/L) - DPT Groundwater
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Parameter	MCL (µg/L)	UST-014GPW 16' DUP	UST-015GPW 8'	UST-016GPW 8'	UST-016GPW 8' DUP	UST-016GPW 16'	UST-017GPW 8'	UST-017GPW 16'
TPH (gasoline)	**10,000***	200U	457	200U	200U	200U	200U	200U
TPH (diesel)	**10,000***	500U	500U	500U	500U	500U	500U	500U
Benzene	**5**	1.8	**5.4**	1.0	1.0	1.2	**9.4**	**31.7**
Toluene	**700**	1.3	23.3	2.4	2.7	1.9	1.2	1U
Ethylbenzene	**1000**	1U	1U	1U	1U	1U	1U	1U
Xylenes (total)	**10,000**	1U	101.5	1U	1U	1U	1U	1U
Trichloroethene	**NA**	1.1	35.4	1U	1U	1U	1U	1U
Tetrachloroethene	**NA**	1U	140	1U	1U	1U	1U	1U
Vinyl chloride	**NA**	1U	1U	1U	1U	1U	1U	1U
1,1-Dichloroethane	**NA**	1U	1.5	1U	1U	1U	15.4	2.0
1,2-Dichloroethane	**NA**	3.0	1U	1U	1U	1U	1U	1.1
1,1-Dichloroethene	**NA**	1U	3.9	1U	1U	1U	1U	1U
trans-1,2-Dichloroethene	**NA**	1U	18.1	1U	1U	1U	1U	1U
cis-1,2-Dichloroethene	**NA**	1U	893	4.9	5.2	1.3	1.2	90.1
1,1,1-Trichloroethane	**NA**	1U	1U	1U	1U	1U	6.9	1U
Dichloromethane	**NA**	1U	1U	1U	1U	1U	1U	1U

Parameter	MCL (µg/L)	UST-018GPW 8'	UST-018GPW 8' DUP	UST-018GPW 16'	UST-019GPW 16'	UST-019GPW 16' DUP	UST-020GPW 8'	UST-020GPW 8' DUP
TPH (gasoline)	**10,000***	200U	200U	200U	200U	200U	200U	200U
TPH (diesel)	**10,000***	500U	500U	500U	500U	500U	500U	500U
Benzene	**5**	2.2	1.5	1.2	**9.7**	**10.1**	1U	1U
Toluene	**700**	2.0	1.4	1.6	19.6	19.5	1U	1U
Ethylbenzene	**1000**	1U	1U	1U	1U	1U	1U	1U
Xylenes (total)	**10,000**	1U	1U	1U	36.5	35.5	1U	1U
Trichloroethene	**NA**	1U	1U	1U	1U	1U	3.9	5.6
Tetrachloroethene	**NA**	1U	1U	1U	1U	1U	4.4	9.4
Vinyl chloride	**NA**	1U	1U	1U	1U	1U	2.0	2.5
1,1-Dichloroethane	**NA**	1U	1U	1U	1U	1U	1U	1U
1,2-Dichloroethane	**NA**	1U	1U	1U	1U	1.5	1U	1U
1,1-Dichloroethene	**NA**	1U	1U	1U	1U	1U	1U	1U
trans-1,2-Dichloroethene	**NA**	1U	1U	1U	1U	1U	1U	1U
cis-1,2-Dichloroethene	**NA**	18.3	18.8	3.4	1U	1U	3.1	4.7
1,1,1-Trichloroethane	**NA**	1U	1U	1U	1U	1U	1U	1U
Dichloromethane	**NA**	1U	1U	1.3	1U	1U	1U	1U

Table 3.10 (Concluded)
Phase 2 On-Site Laboratory Results (µg/L) – DPT Groundwater
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Parameter	MCL (µg/L)	UST-020GPW 16'	UST-021GPW 11'	UST-021GPW 16'
TPH (gasoline)	**10,000***	200U	200U	200U
TPH (diesel)	**10,000***	500U	500U	500U
Benzene	**5**	1U	2.2	1U
Toluene	**700**	1U	2.8	1U
Ethylbenzene	**1000**	1U	1U	1U
Xylenes (total)	**10,000**	1U	1U	1U
Trichloroethene	**NA**	10.6	1U	1U
Tetrachloroethene	**NA**	29.3	1U	1U
Vinyl chloride	**NA**	3.6	1U	1U
1,1-Dichloroethane	**NA**	1.0	1U	1U
1,2-Dichloroethane	**NA**	1U	1U	1U
1,1-Dichloroethene	**NA**	1U	1.7	1U
trans-1,2-Dichloroethene	**NA**	1U	1U	1U
cis-1,2-Dichloroethene	**NA**	51.4	39.8	1U
1,1,1-Trichloroethane	**NA**	1U	1U	1U
Dichloromethane	**NA**	1U	1U	1U

Bolded results exceed MCL or Utah guideline cleanup levels.
MCL – Maximum Contaminant Level.
µg/L – micrograms per liter.
UST – Underground Storage Tank.
NA – Not Applicable.
U – Compound analyzed for but not detected. Number indicates the detection limit.
TPH – Total Petroleum Hydrocarbons.
DUP – Duplicate.
* – Utah guideline cleanup level. No MCL established.

Table 3.11
Phase 2 Fixed-Base Laboratory Results (μg/L) – DPT Groundwater –
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Parameter	MCL	UST-009 GPW 8'	UST-009 GPW 16'	UST-013 GPW 11'	UST-013 GPW 16'	UST-014 GPW 8'	UST-014 GPW 16'	UST-015 GPW 8'
TPH (gasoline)	**10,000***	1000U	1000U	1000U	1000U	6,000	1000U	1000U
Benzene	**5**	1U	1U	2.0	1.5	1U	1U	1U
Toluene	**700**	1U	1U	1U	1U	1.1	1U	4.5
Ethylbenzene	**1,000**	1U	1U	6.4	23.2	43.5	1U	2.4
Xylenes (total)	**10,000**	1U	1U	1U	1U	4.1	1U	16.3
Trichloroethene	**NA**	1U	1U	17.1	10.4	1U	2.9	40
Tetrachloroethene	**NA**	1U	1U	1U	1U	1U	1U	69
Vinyl chloride	**NA**	1U	1U	1U	1U	1U	1U	2.1
1,1-Dichloroethane	**NA**	1U	1U	1U	1U	1U	1U	1.8
1,2-Dichloroethane	**NA**	1U	1U	1U	1U	1U	3.4	1U
1,1-Dichloroethene	**NA**	1U	1U	1.5	1.3	1U	1U	1U
trans-1,2-Dichloroethene	**NA**	1U	1U	1.5	1.9	1U	1U	16.4
1,1,1-Trichloroethane	**NA**	1U	1U	1U	1U	1U	1U	1U
Chloroform	**NA**	1U	1U	1U	1U	1U	1U	5.3
1,2-Dichloropropane	**NA**	1U	1U	1U	1U	1U	1U	1U

Table 3.11 (Concluded)
Phase 2 Fixed-Base Laboratory Results (µg/L) – DPT Groundwater – Former UST, Building 1608 Site 151st ARW, Utah ANG Base, Salt Lake City, Utah

Parameter	MCL	UST-017 GPW 8'	UST-017 GPW 8' DUP	UST-017 GPW 16'	UST-018 GPW 8'	UST-020 GPW 8'	UST-020 GPW 16'	UST-021 GPW 11'	UST-021 GPW 16'
TPH (gasoline)	**10,000***	1000U	1000U	1000U	1000U	1000U	1000U	1000U	1000U
Benzene	**5**	4.2	**5.6**	**46.1**	1U	1U	1U	1.6	1U
Toluene	**700**	1U	1U	1U	1U	1U	1U	1U	1U
Ethylbenzene	**1,000**	2.0	2.9	1U	1U	1U	1U	1U	1U
Xylenes	**10,000**	1U	1U	1U	1U	1U	1U	1U	1U
Trichloroethene	**NA**	2.0	2.2	5.8	1.1	7.5	11.2	1.9	1U
Tetrachloroethene	**NA**	1U	1U	1U	1U	6.5	13.4	1U	1U
Vinyl chloride	**NA**	2.1	2.1	8.1	1U	1U	1U	3.8	1U
1,1-Dichloroethane	**NA**	21.3	20.7	2.1	1U	1U	1U	3.0	1U
1,2-Dichloroethane	**NA**	1U	1U	1.1	1U	1U	1U	1U	1U
1,1-Dichloroethene	**NA**	5.9	6.3	1.8	1U	1U	1U	1U	1U
trans-1,2-Dichloroethene	**NA**	1U	1U	1.2	1U	1U	1U	1U	1U
1,1,1-Trichloroethane	**NA**	9.4	8.8	1U	1U	1U	1U	1.9	1U
Chloroform	**NA**	1U	1U	1U	1U	1U	1U	1.2	1U
1,2-Dichloropropane	**NA**	1U	1U	1U	1U	1U	1.3	1U	1U

Bolded results exceed MCL or Utah guidelines.
MCL – Maxinum Contaminant Level.
µg/L – micrograms per liter.
TPH – Total Petroleum Hydrocarbons.
DPT – Direct-Push Technology.
DUP – Duplicate.
UST – Underground Storage Tank.
NA – Not Applicable.
U – Compound analyzed for but not detected. Value is detection limit.
* – Utah guideline cleanup level. No MCL established.

Table 3.12
Phase 2 Monitoring Wells – Groundwater, Fixed-Base Laboratory Results – Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Parameter	MCL (µg/L)	First Round Sampling (10/25/95)			Second Round Sampling (11/15/95)			
		UST-010MW	UST-011MW	UST-012MW	UST-010MW	UST-011MW	UST-011MW DUP	UST-012MW
TPH (gasoline) (µg/L)	**10,000***	1000U	1000U	1000U	1000U	1000U	1000U	1000U
TPH (diesel) (µg/L)	**10,000***	1000U	1000U	**19,900**	1000U	2,000	1000U	3,500
Benzene (µg/L)	**5**	1U	4.8	1U	1U	4.4	**7.8**	1.2
Ethylbenzene (µg/L)	**1,000**	1U	4.1	1U	1U	3.1	5.5	1U
Chloroform (µg/L)	**NA**	1U	3.6	15.7	1U	10.5	8.8	1.6
1,1-Dichloroethene (µg/L)	**NA**	1U	6.0	1U	1U	5.5	5.6	1U
trans-1,2-Dichloroethene (µg/L)	**NA**	1U	10.7	1U	1U	19.6	15.7	1U
Trichloroethene (µg/L)	**NA**	1U	2,760	1U	1U	2,000	1,970	1U
Tetrachloroethene (µg/L)	**NA**	1U	1.6	1U	1U	1U	1U	2.9
Vinyl chloride (µg/L)	**NA**	1U	1.0	1U	1U	1U	1U	1U
Bromodichloromethane (µg/L)	**NA**	1U	1U	3.6	1U	2.0	1U	1U
1,2-Dichloroethane (µg/L)	**NA**	1U	1U	1U	1U	1.1	1U	1U

Bolded results exceed MCL.
µg/L – micrograms per liter.
MCL – Maximum Contaminant Level.
TPH – Total Petroleum Hydrocarbons.
UST – Underground Storage Tank.

All laboratory results are located in Appendix G.
NA – Not Applicable.
MW – Monitoring Well.
DUP – Duplicate.
* – Utah guideline cleanup level. No MCL established.

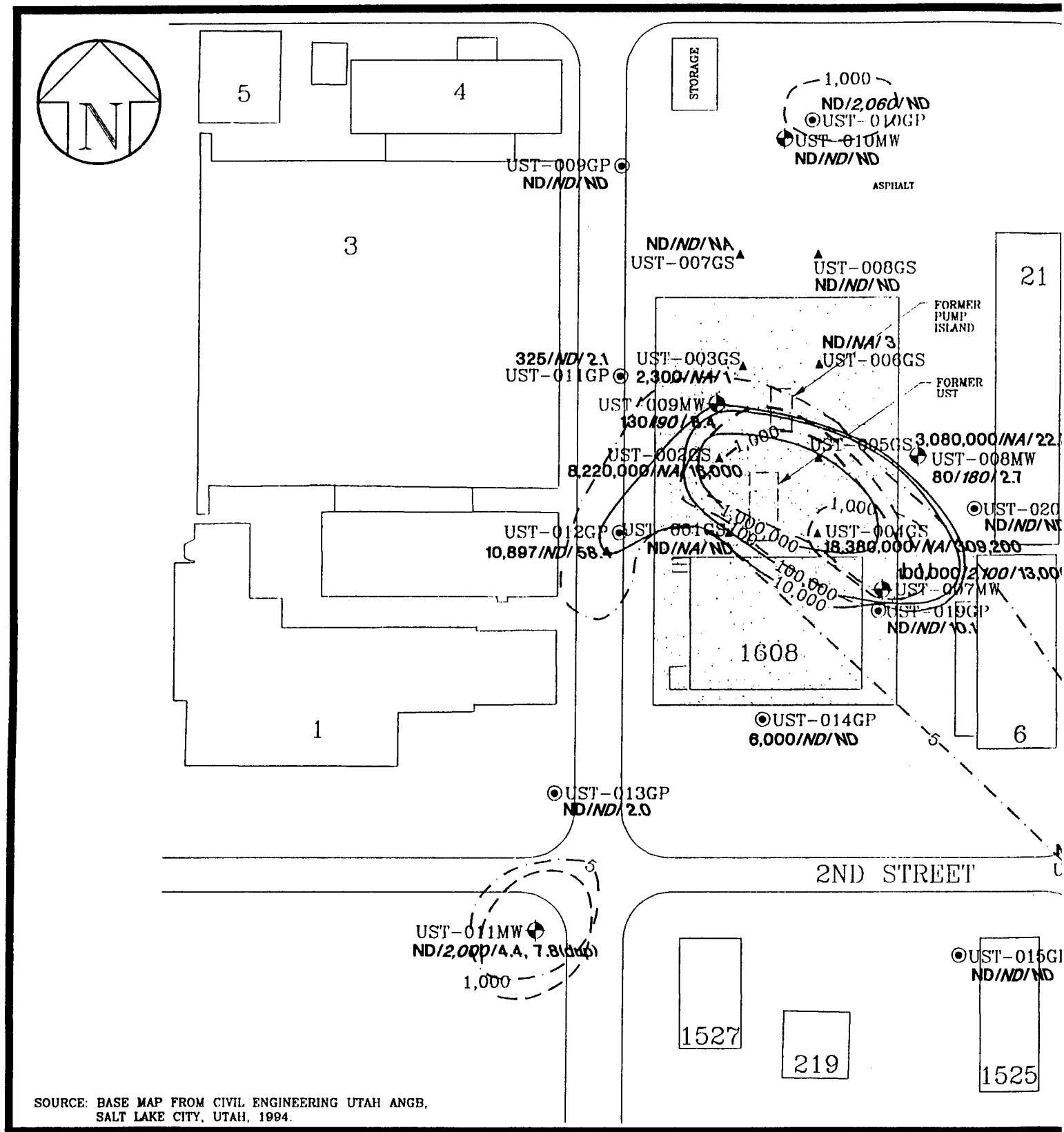
which is surrounded by non-detections at nearby sampling locations. As noted in Subsection 3.2.3.4, concentrations of TPH (diesel) in UST-012MW were detected above and below the 10,000 μg/L delineation requirement and guideline cleanup valves. This indicates an area of borderline concentrations that should not require further delineation. The highest benzene detections at each sampling location except when a sample has both screening and confirmation results are shown on Figure 3.10. The fixed-base laboratory confirmation results supersede the on-site laboratory screening results. The areal extent is defined and is larger than the TPH (gasoline and diesel) plumes. The plume primarily extends 300 feet to the southeast in a downgradient direction with a separate small area of low benzene concentrations around UST-011MW. As noted in Subsection 3.2.3.4, concentrations of benzene in UST-011MW were detected above (one sample) and below (two samples) the MCL. This indicates a small area of borderline contamination that should not require further delineation.

3.2.4 Groundwater QA Sample Results

No trip blanks were collected for samples analyzed by the on-site laboratory. Furnished by the laboratory, trip blanks were shipped in all coolers containing groundwater samples submitted to the fixed-base laboratory. All trip blank results were below detection limits, indicating there was no cross-contamination during the shipping process.

Field blanks of the decontamination water were collected during each groundwater sampling round. The samples were analyzed for the same parameters as the groundwater samples. All field blank results were below detection limits except during the March 1995 groundwater sampling round. Common laboratory contaminants methylene chloride (16 μg/L) and chloroform (4.1 μg/L) were detected. Toluene (2.1 μg/L) and total xylenes (1.4 μg/L) were also detected. Due to the low concentrations, there is no significant impact on sampling results introduced by the decontamination fluid.

Equipment rinseate blanks were collected during each groundwater sampling round by pouring deionized water over decontaminated sampling equipment. The samples were analyzed for the same parameters as the groundwater samples. All equipment rinseate blank results were below detection limits except for during the March 1995 sampling round. Methylene chloride (15 μg/L), chloroform (3.4 μg/L), toluene (1.8 μg/L), and total xylenes (1.3 μg/L) were detected. These concentrations are similar to those detected in the field blank. Therefore, equipment decontamination was effective and there was no cross contamination by the sampling equipment during sample collection.

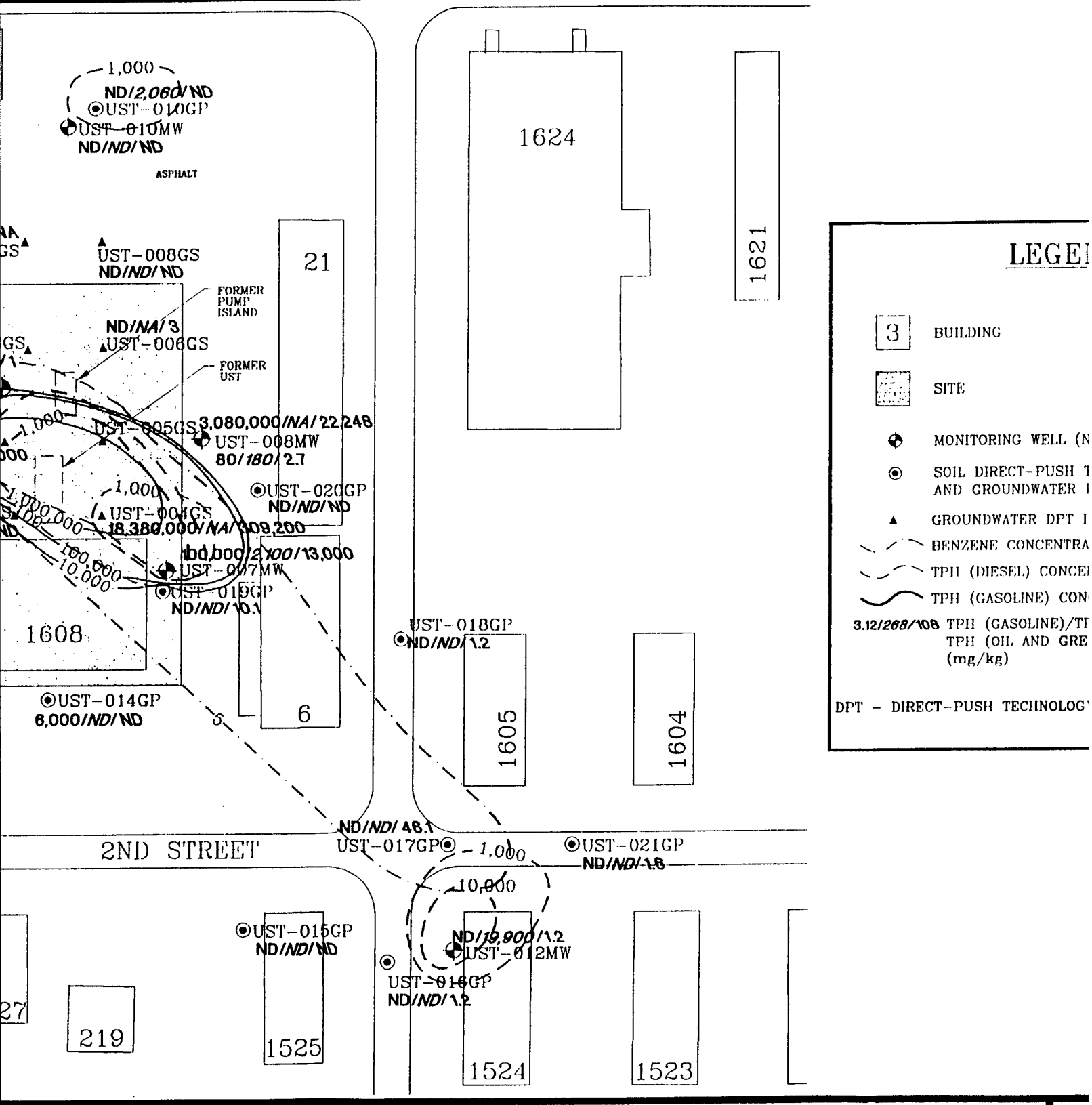


SOURCE: BASE MAP FROM CIVIL ENGINEERING UTAH ANGB, SALT LAKE CITY, UTAH, 1994.

FIGURE 3.10

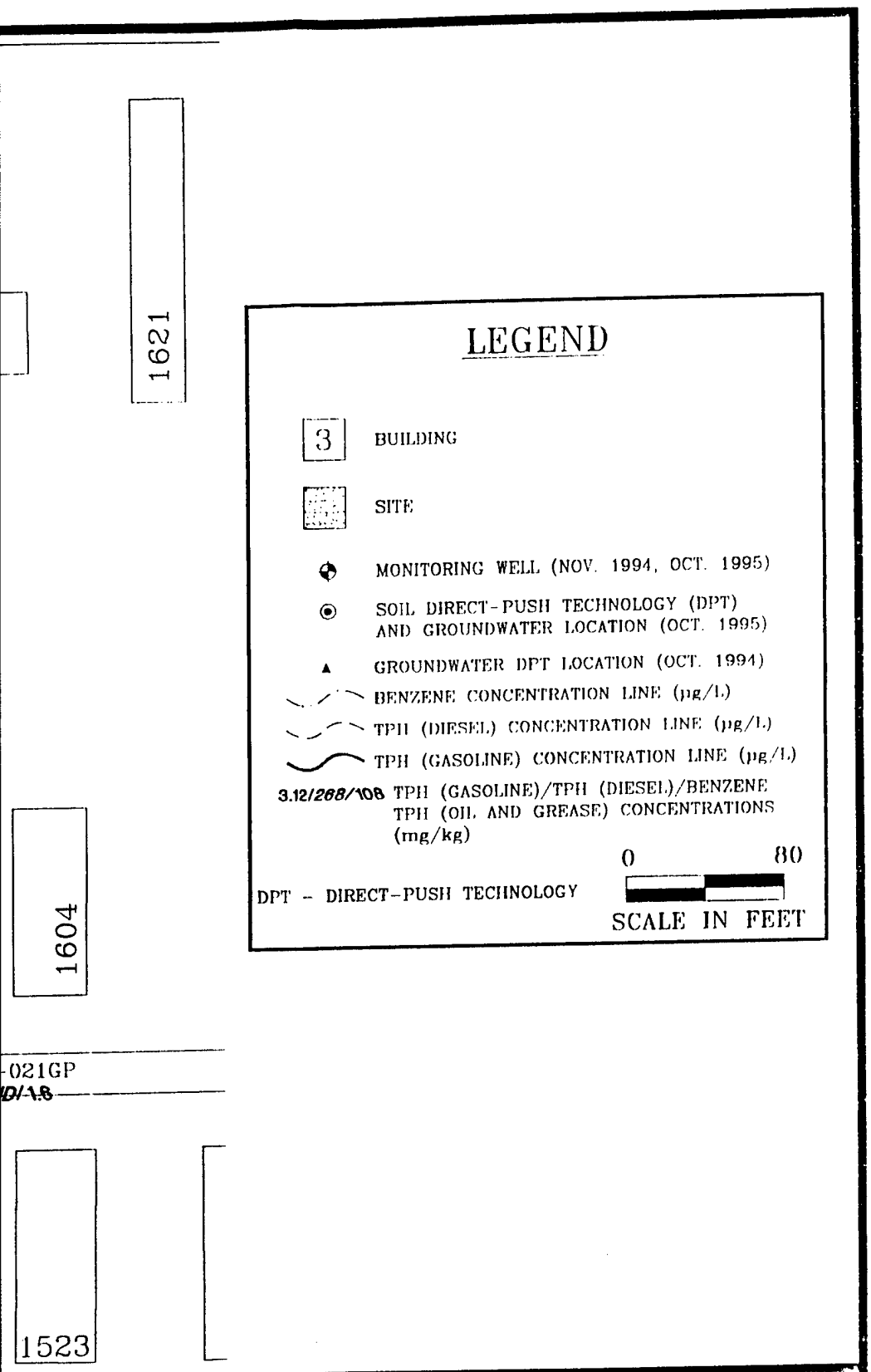
BENZENE, TPH (GASOLINE), AND TPH
FIXED-BASE AND ONSITE LABORAT
151st ARW, Ut
Salt Lake

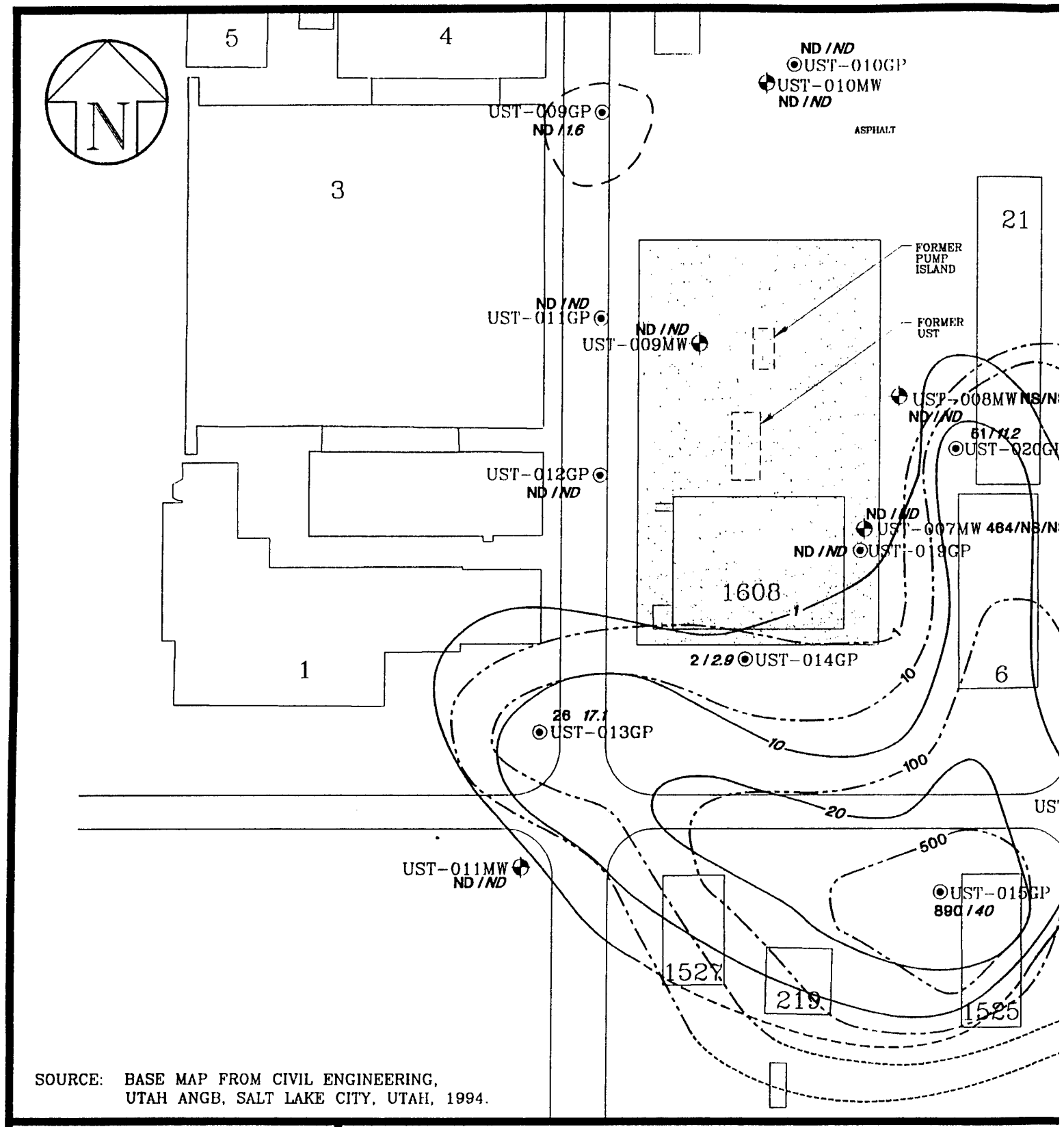
SALT\SAMP-L02



GASOLINE), AND TPH (DIESEL) IN GROUNDWATER SAMPLES
AND ONSITE LABORATORIES MAXIMUM CONCENTRATIONS

151st ARW, Utah ANG Base
Salt Lake City, Utah


1621
LEGEND
3 BUILDING
SITE
MONITORING WELL (NOV. 1994, OCT. 1995)
SOIL DIRECT-PUSH TECHNOLOGY (DPT) AND GROUNDWATER LOCATION (OCT. 1995)
GROUNDWATER DPT LOCATION (OCT. 1994)
BENZENE CONCENTRATION LINE (µg/L)
TPH (DIESEL) CONCENTRATION LINE (µg/L)
TPH (GASOLINE) CONCENTRATION LINE (µg/L)
3.12/268/108 TPH (GASOLINE)/TPH (DIESEL)/BENZENE TPH (OIL AND GREASE) CONCENTRATIONS (mg/kg)
DPT - DIRECT-PUSH TECHNOLOGY
0
80
SCALE IN FEET
1604
-021GP
1523
ROUNDWATER SAMPLES
CONCENTRATIONS
OPTEC II
OPERATIONAL TECHNOLOGIES CORPORATION
APRIL 1996

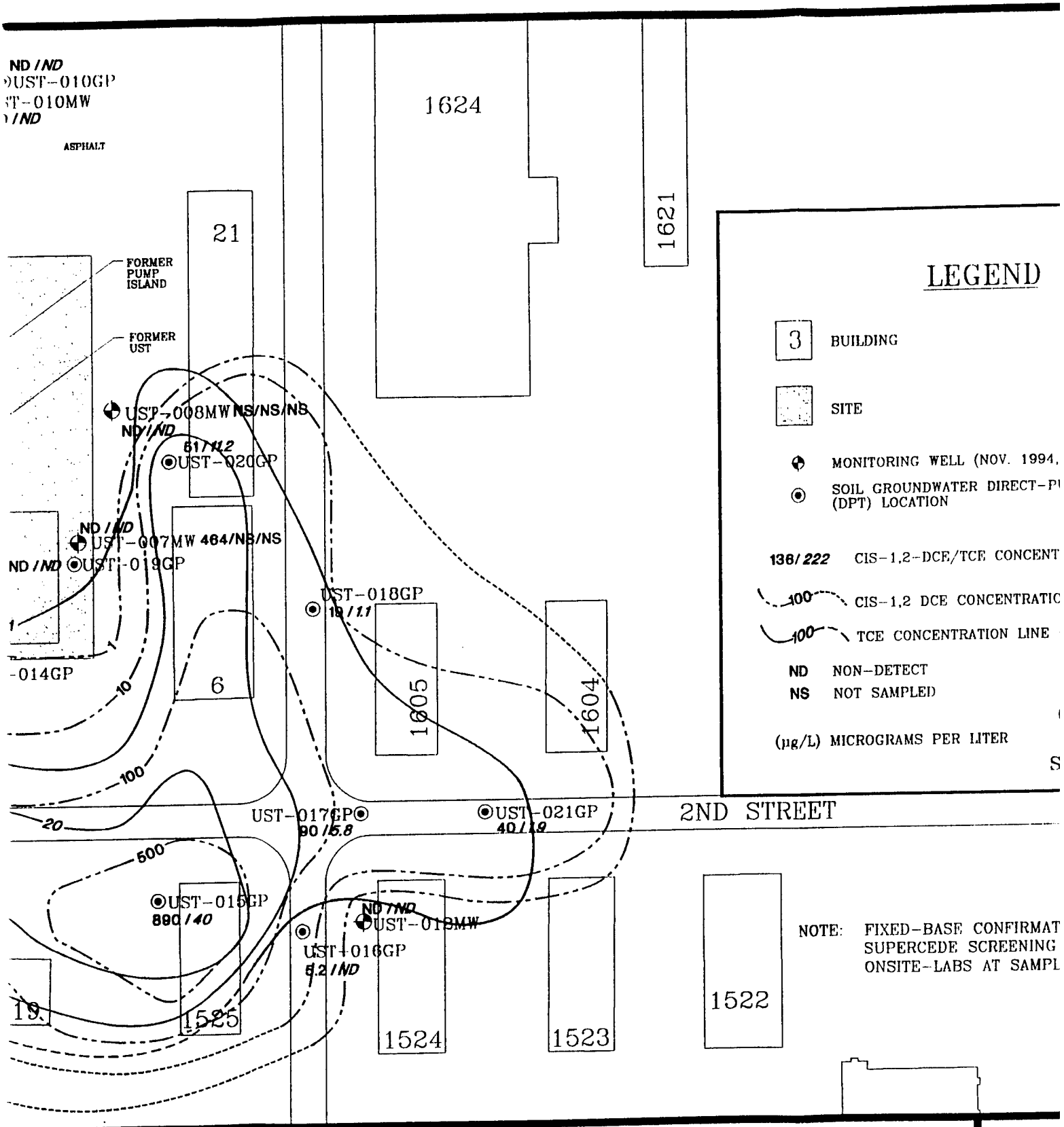


SOURCE: BASE MAP FROM CIVIL ENGINEERING, UTAH ANGB, SALT LAKE CITY, UTAH, 1994.

FIGURE 3.11

TCE AND CIS-1,2-DC
FIXED-BASE AND ON-SITE LABORAT
151st ARW, Ut
Salt Lake (

SALT\SAMP-LOC



AND CIS-1,2-DCE IN GROUNDWATER

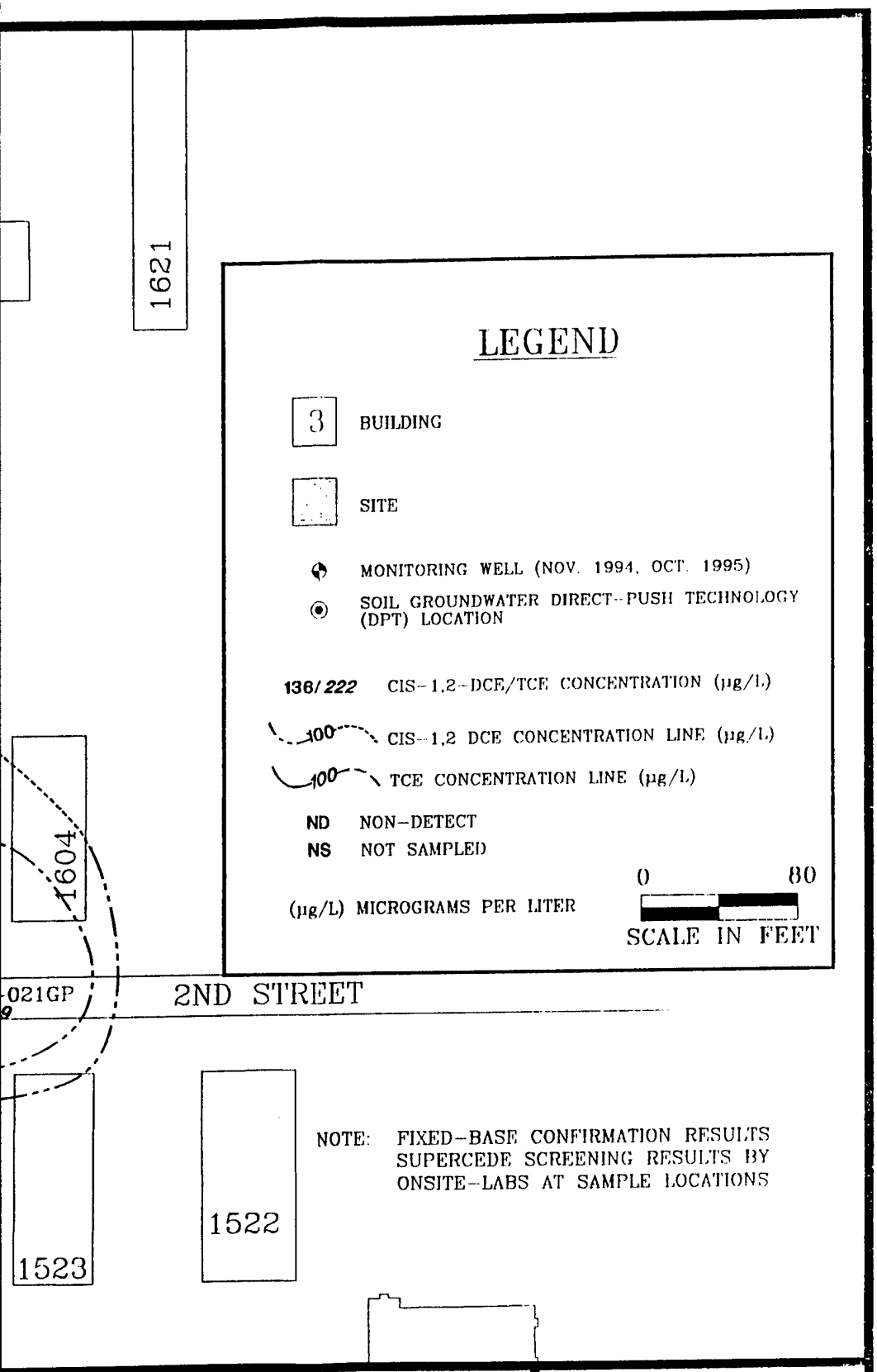
N-SITE LABORATORIES MAXIMUM CONCENTRATIONS

151st ARW, Utah ANG Base

Salt Lake City, Utah

OPERA
C O

2



ATER
M CONCENTRATIONS

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APRIL 1996

3

3.2.5 Investigation Derived Waste

A total of 21 drums of investigation derived waste (IDW) that included soil cuttings, purged groundwater, decontamination water, and miscellaneous IDW were generated during the 1994 and 1995 SSI field efforts. Six drums contain soil cuttings, eight drums contain groundwater purged from monitoring wells at the site, five drums of spent decontamination water, and two drums of miscellaneous IDW (nitrile gloves, plastic sheeting, etc.). The wastes were stored at the site in Department of Transportation-approved steel drums. Laboratory analyses of the soil and water IDW were performed to characterize the waste and to provide information useful for the ultimate disposal of the waste. Representative samples of soil and water IDW were analyzed for VOCs by EPA Methods SW8010 and/or SW8020, and TPH (gasoline and diesel) by Modified Method 8015. Additionally, the TCLP was performed on samples of soil IDW. Detailed analytical results for the contents of the waste drums is included in Appendix I.

No contaminants were detected in soil or waters contained in drum Nos. 2, 4, 5, 16, and 21. Water contained in drums Nos. 2, 4, 5, and 21 were disposed on-site to the municipal wastewater system with the approval of the Utah DERR and the city of Salt Lake City.

Miscellaneous IDW in drums No. 13 and No. 21 exhibited *de minimis* contamination and were disposed off-site as a solid waste.

Low to high levels of the VOCs TPH (diesel), and TPH (gasoline) were detected in soil and water waste samples from the remaining drums. These drums currently remain at the site. Based on TCLP results, soil cuttings generated during the SSI did not exhibit hazardous characteristics. The Utah DERR has authorized on-site treatment of contaminated soil IDW by aeration and waters will be disposed of at an off-site disposal facility.

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SECTION 4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

4.1.1 Extent of Soil and Groundwater Contamination

During the two Phases of the SSI, soil and groundwater contamination related to the Former UST, Building 1608 site was delineated except for the western edge, where complete delineation is prohibited by buildings that obstruct further investigation. Soils exhibit concentrations of TPH (gasoline and diesel) and benzene that exceed Utah Level II RCLs. Table 4.1 summarizes soil analytical results greater than RCLs. The TPH (gasoline) and benzene areas of contamination are very similar and are noted up to 200 feet from the former UST location in both the northwest and southeast directions. TPH (diesel) is detected above RCLs at a location just south of Building 1608. This soil sample, collected from DPT location UST-014GP (6-8 feet BLS), exhibited 782 mg/kg of TPH as an oil and grease fraction. Based on the composition, the contamination detected is not associated with the UST release.

A second area of TPH (diesel) contamination greater than RCLs was detected 250 feet north of the Former UST. Soil TPH (diesel) contamination was confirmed in this area from monitoring well UST-010MW (10-11.5 feet BLS) by fixed-base laboratory analytical results at a concentration of 1,640 mg/kg. Laboratory QA/QC data did not indicate a problem with the analysis. The field-base laboratory analytical results indicated the presence of TPH (diesel) in groundwater at that location, however, two rounds of groundwater sampling from monitoring well UST-010MW did not confirm the presence of TPH (diesel) by fixed-base laboratory confirmation analyses. The field-base laboratory analytical results did not indicate TPH (diesel) in the soil samples.

The fixed-base laboratory results confirm the presence of TPH (diesel) in the soil exceeding Level II RCLs. The detection is judged to be anomalous with respect to the source in that it is located at distance from the source, and multiple soil and groundwater sampling points directly between the area and the source show no detectable concentrations of TPH (diesel). Based on the data, TPH (diesel) contaminated soil detected at monitoring well UST-010MW is not associated with the Former UST, Building 1608 site.

Benzene, toluene, and ethylbenzene were detected in groundwater samples at concentrations greater than MCLs. Table 4.2 summarizes groundwater analytical results greater than MCLs. The groundwater plume is essentially defined by benzene which has concentrations exceeding

Table 4.1
Analytical Results Greater than RCLs for Soil
Fixed-Base and On-Site Laboratory Results –
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample ID Number/Interval (feet BLS)	Benzene (mg/kg)	Toluene (mg/kg)	TPH (gasoline) (mg/kg)	TPH (diesel) (mg/kg)
UST-007MW 6 - 8	464	325	–	–
UST-002BH 5 - 6	–	–	3500	–
UST-002BH 11 - 12	1.3	–	–	–
UST-004BH 5 - 6	–	–	130	–
UST-011GP 4 - 6	–	–	121	–
UST-011GP 9 - 11	.720	–	201	–
UST-012GP 4 - 6	.330	–	–	–
UST-019GP 4 - 6	1.92	–	273	–
UST-019GP 6 - 8	8.76	–	221	–
UST-014GP 6 - 8	–	–	–	782*
UST-019GP 6 - 8	3.12	–	268	–
UST-010MW 10 - 11.5	–	–	–	1,640
RCLs	**0.3**	**300**	**100**	**300**

* – Run on Oil and Grease (RCL = 600 mg/kg) Standard.
TPH – Total Petroleum Hydrocarbons.
mg/kg – milligrams per kilogram.
feet BLS – feet Below Land Surface.
UST – Underground Storage Tank.
BH – Borehole.
MW – Monitoring Well.
RCLs – Recommended Cleanup Levels.

MCLs. The benzene plume is located from 150 feet upgradient (northwest) to 300 feet downgradient toward the southeast. A second small plume with low benzene concentrations is located approximately 300 feet southwest of the site. Benzene concentrations above and below the MCL of 5 μg/L have been detected in UST-011MW.

TPH (gasoline and diesel) was detected above 10,000 μg/L. The TPH (gasoline) plume is primarily located within the benzene plume area. A small area of TPH (diesel) groundwater contamination is located 300 feet southeast of the former UST. TPH (diesel) has been detected both above and below 10,000 μg/L in UST-012MW.

Table 4.2
Analytical Results Greater than Groundwater MCLs on Fixed-Base and On-Site Laboratory Results – Former UST, Building 1608 Site 151st ARW, Utah ANG Base, Salt Lake City, Utah

Sample ID Number/Interval (feet BLS)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)
UST-007MW	11,000	8,300	–
UST-007MW DUP	13,000	12,000	1,200
UST-009MW	8.4	–	–
UST-011MW DUP	7.8	–	–
UST-012GPW 8	58.4	–	–
UST-012GPW 16	32.5	–	–
UST-012GPW 16 DUP	33.9	–	–
UST-013GPW 17	8.0	–	–
UST-015GPW 8	5.4	–	–
UST-017GPW 8	9.4	–	–
UST-017GPW 8 DUP	5.6	–	–
UST-017GPW 16	46.1	–	–
UST-019GPW 16	9.7	–	–
UST-019GPW 16 DUP	10.1	–	–
MCLs	**5**	**700**	**1,000**

µg/L – micrograms per liter.
feet BLS – feet Below Land Surface.
UST – Underground Storage Tank.
MW – Monitoring Well.
DUP – Duplicate.
GPW – Geoprobe™ Monitoring Well.
MCLs – Maximum Contaminant Levels.

Groundwater sample analytical data indicate that monitoring well UST-011MW and UST-012MW are located at the edge of the MCL delineation line for benzene and TPH (diesel) respectively and therefore, additional delineation may not be warranted. Additional groundwater sampling rounds should be conducted for these wells to statistically confirm the benzene and TPH (diesel) concentrations prior to any recommendations for further work.

Trichloroethene, tetrachloroethene, and their degradation products were detected in soil and groundwater samples. These compounds are related to nearby IRP sites and do not originate from the Former UST, Building 1608 site. Detections of these solvents increase south of the site, confirming that these compounds are not related to the former UST site.

Information gathered on halogenated solvents during this SSI will be reported and evaluated in the ongoing CERLCA investigation at IRP Site No. 8.

4.1.2 Tier I Risk-Based Corrective Action Criteria

Information from the SSI was compared with Tier I Risk-Based Corrective Action (RBCA) criteria promulgated in draft form by the Utah DERR in September 1995 (Utah DERR, 1995). A summary description of site conditions compared to Tier I RBCA criteria is provided in the following subsections. The purpose of the summary is to provide a general comparison to the RBCA criteria and is not considered a comprehensive assessment of risk.

Risk-based criteria is used to determine if a site-specific cleanup standard is reasonable. Reasonableness is based on consideration of impact or potential impact to public health and the environment, remediation costs, and available and feasible technologies. A site classification based on land use, soil and groundwater information, and potential sensitive receptors and pathways is performed, and considers Tier I risk-based screening levels (RBSLs) for hydrocarbon compounds. Tier I RBSLs are listed in Table 4.3. A flowchart illustrating the RBCA screening process, and a partially completed RBCA Tier I Worksheet, is included in Appendix J.

4.1.2.1 Tier I RBSL Exceedances for Soil and Groundwater

Contaminated soil exhibiting TPH (gasoline) and/or benzene concentrations greater than Tier I RBSLs is restricted to an area in the vicinity of the northwest corner of Building 1608 (Figure 4.1). It is probable that contaminated soil extends underneath the building. Benzene concentrations in the contaminated area, detected by field screening and laboratory analyses, range from 1.3 mg/kg to 464 mg/kg (RCBL = 0.9 mg/kg); a TPH (gasoline) concentration of 3,500 mg/kg (RCBL = 1,500 mg/kg) was detected at DPT location UST-002BH. A first-order estimate of the amount of soil contaminated at levels above RBSLs is approximately 2,000 cubic yards.

Contaminated groundwater exhibiting TPH (gasoline) and/or benzene concentrations greater than Tier I RBSLs have been detected by field screening and laboratory analyses in an area along the north side of Building 1608 (Figure 4.2). It is probable groundwater contaminated above RBSLs extends underneath the northeastern portion of the building. Benzene concentrations in the contaminated area, detected by field screening and laboratory analyses, range from 13 mg/L to 309 mg/L (RCBL = 0.3 mg/L); TPH (gasoline) concentrations ranged from 10.9 mg/L to

Table 4.3
Tier 1 Screening Levels for Petroleum Contamination Sites –
Former UST, Building 1608 Site
151st ARW, Utah ANG Base, Salt Lake City, Utah

Constituent	Analytical Method (EPA, 1984)	Groundwater (mg/L)	Soil (mg/kg)
Benzene*	602/8020	0.3	0.9
Toluene*	602/8020	7	61
Ethylbenzene*	602/8020	4	23
Xylenes*	602/8020	73	235
Naphthalene*	602/8020	0.1	10
Total Petroleum Hydrocarbons (TPH) as gasoline**	8015, mod.	10	1,500
Total Petroleum Hydrocarbons (TPH) as diesel**	8015, mod.	10	5,000
Oil and Grease or Total Recoverable Petroleum Hydrocarbons (TRPH)**	413.1 or 418.1	10	10,000

* – Risk-based.
** – Non-risk-based.
EPA – United States Environmental Protection Agency.

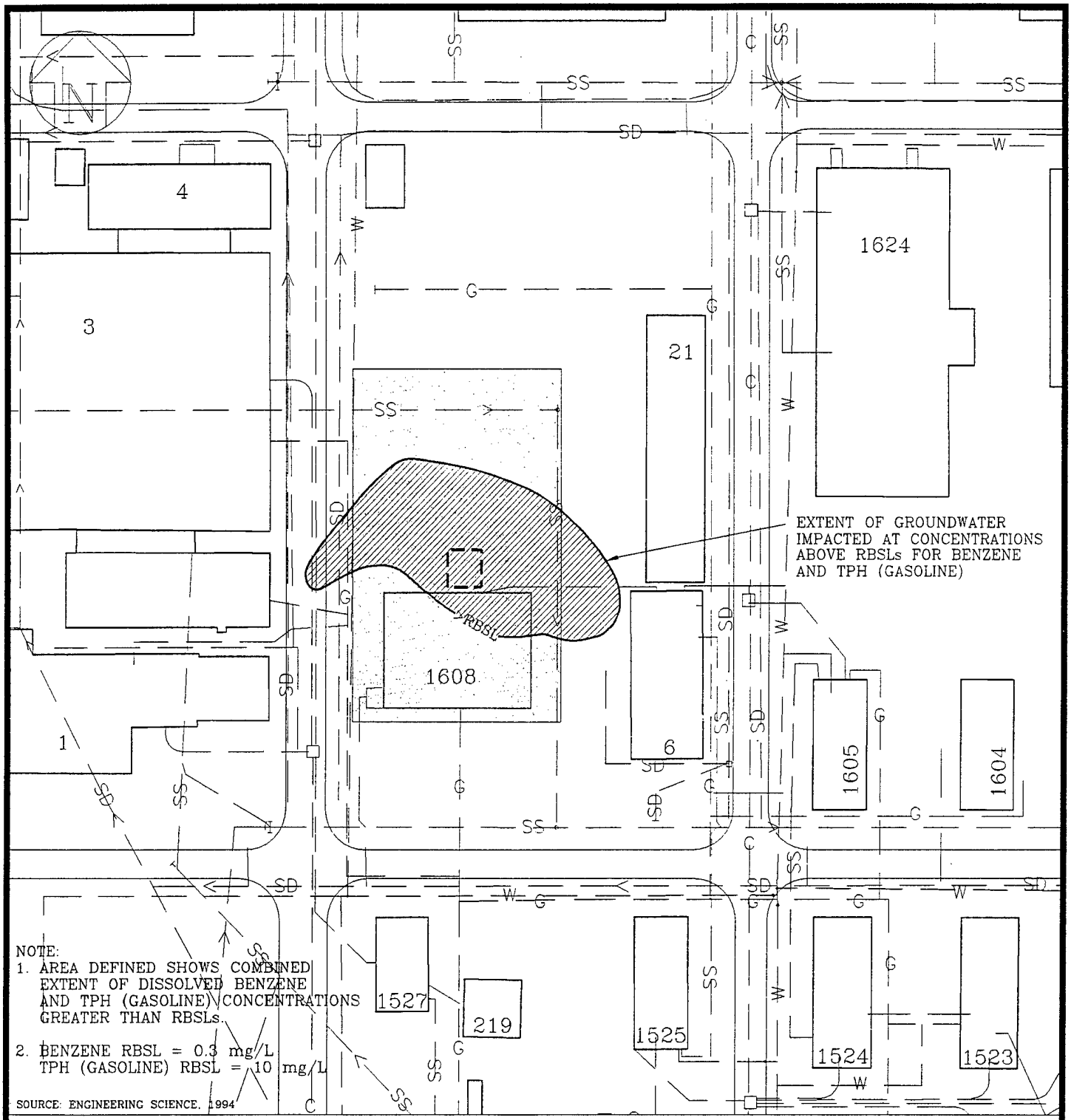
Source: Guidelines for Utah's Tier I Risk-Based Corrective Action, (Utah DEQ, 1995).

18,380 mg/L (RCBL = 10 mg/L). A first-order estimate of the area of groundwater contaminated at levels above RBSLs is approximately 20,000 square feet.

4.1.2.2 Receptors and Exposure Pathways

The site is a military installation and is secured from the general public. Contaminated soils are covered by paving and not accessible for human contact.

Subsurface utility lines and buildings are located within 30 feet of points within the contaminated source area that exceed RBSLs (Figures 4.1 and 4.2). Subsurface utilities in the site vicinity are located above the groundwater table and sufficiently far away from the release point (former UST pit) to preclude them as a pathway for contaminated groundwater or free product. Based on the results of the soil vapor survey and DPT soil and groundwater sampling, hydrocarbon concentrations detected in the vicinity of the utility clearances would not be expected to produce explosive concentrations.



NOTE:
1. AREA DEFINED SHOWS COMBINED EXTENT OF DISSOLVED BENZENE AND TPH (GASOLINE) CONCENTRATIONS GREATER THAN RBSLs.
2. BENZENE RBSL = 0.3 mg/L
   TPH (GASOLINE) RBSL = 10 mg/L

SOURCE: ENGINEERING SCIENCE, 1994

LEGEND

- FORMER UST STRUCTURE
- SITE
- >RBSL — LIMIT OF GROUNDWATER IMPACTED BY BENZENE AND TPH (GASOLINE)
- mg/L — MILLIGRAMS PER LITER
- RBSL — RISK-BASED SCREENING LEVEL
- SD — STORM DRAIN
- SS — STORM SEWER
- G — GAS LINE
- W — WATER LINE
- C — CABLE

0 100
SCALE IN FEET

FIGURE 4.1

GROUNDWATER IMPACTED BY BENZENE AND TPH (GASOLINE) CONCENTRATIONS EXCEEDING RBSLs

151st ARW, Utah ANG Base
Salt Lake City, Utah

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SALT\TPH-GW

APRIL 1996

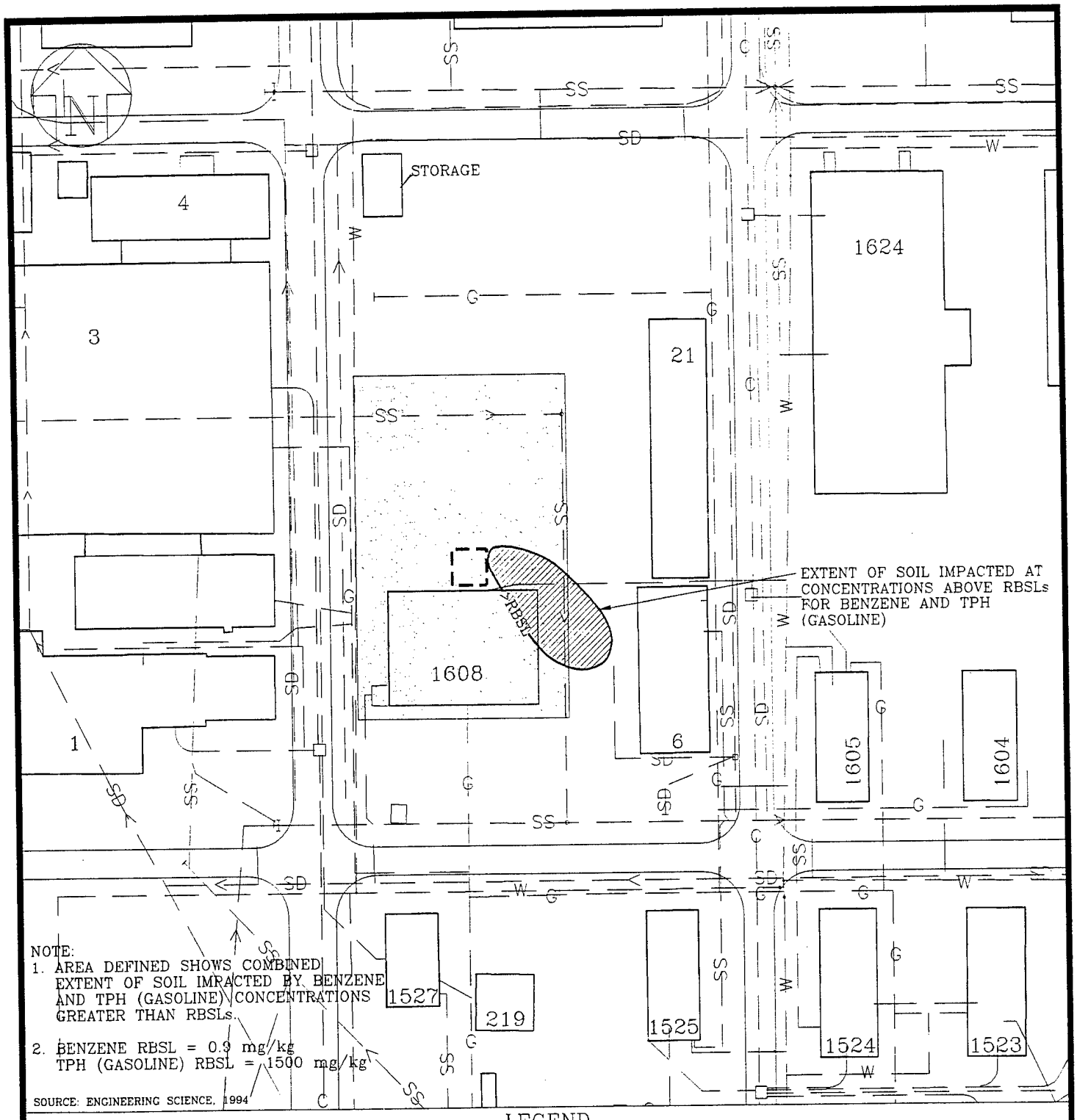

FIGURE 4.2

SALT\BENZ-XSC

SOIL IMPACTED BY BENZENE AND TPH (GASOLINE) CONCENTRATIONS EXCEEDING RBSLs

151st ARW, Utah ANG Base
Salt Lake City, Utah

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OPERATIONAL TECHNOLOGIES CORPORATION

APRIL 1996

The results of soil vapor survey and soil analyses indicate soil contaminated at levels that could potentially produce soil vapor near Building 1608 which overlies part of the contaminated area. however, no overt indications of vapor impacts (odor, etc.) in the building have been reported.

No public water supply, private wells, or non-potable wells exist at the base or within 3,100 feet of the site. Additionally, none of the wells are screened within the impacted interval. Groundwater flow velocity is very low; the average value is nine feet per year. Contaminant transport would be significantly less than the groundwater flow velocity due to potentially high retardation within the clayey soils at the site. Therefore, no pathway exists between the contamination source and water supply wells.

4.1.2.3 RBCA Site Classification

Classification of the site was performed using the Utah DERR Tier I RBCA guidelines. Based on the information from the SSI, the overall site classification is 2. The rating reflects a data gap on the potential for hydrocarbon vapors to enter Building 1608 from underlying contaminated soils. Downgrading of the classification would happen if further investigation showed that hydrocarbon vapors were not entering the building. Classification for contaminated soils, contaminated groundwater, and surface water resulted in values of Class 3, Class 4, and Class 4, respectively.

4.2 RECOMMENDATIONS

Based on the results of the investigation the recommendations for the site are as follows:

- Semiannual groundwater monitoring and sampling should be performed on monitoring wells MW-7 through MW-12 (six wells) for a period up to 24 months. The monitoring parameters will include BTEX (benzene, toluene, ethylbenzene, and xylene isomers) and TPH as gasoline range compounds and diesel range compounds.

- An ambient air sampling event should be conducted in Building 1608 to determine the presence or potential for harmful hydrocarbon vapors.

The semiannual groundwater monitoring will provide temporal data on the attenuation of dissolved hydrocarbon compounds in groundwater beneath the site and to assess if the contaminant plume exhibits further migration. At the end of the monitoring period, an

assessment of the groundwater data will be made to determine if further monitoring, risk-based assessments, or corrective action is warranted. If groundwater contaminant concentrations exhibit stabilization or a decreasing trend over the monitoring period, the site should be considered for closure without further action.

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SECTION 5.0 REFERENCES

151st ARW/EM, 1993. Site Closure Report and Underground Storage Tank Closure Notice for UST 1608-1, Utah Air National Guard.

American Society of Testing Material (ASTM), 1994. Emergency Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites, Emergency Standard 38-94, July 1994.

Bouwer, H. and Rice, R. C., 1976. A Slug Test Method for Determining Hydraulic Conductivity of Unconfined Aquifers, Water Resources Research, Vol. 12, No. 13, pp. 423-428.

Engineering-Science, 1994. 151st Air Refueling Wing, Utah Air National Guard, Salt Lake City International Airport, Salt Lake City, Utah: Draft Site Investigation Report.

HMTC, 1989. 151st Air Refueling Wing, Utah Air National Guard, Salt Lake City International Airport, Salt Lake City, Utah: Preliminary Assessment Report, Utah Air National Guard.

HAZWRAP Support Contractor Office, 1994. Installation Restoration Program Internal Draft Site Investigation Report. 151st Air Refueling Wing Utah Air National Guard Salt Lake City International Airport, Salt Lake City, Utah.

Johnson, Kate, 23 March 1995. Personal Communication, Utah Department of Environmental Quality – Division of Environmental Response and Remediation.

Operational Technologies Corporation, 1995. Federal Facility Preliminary Assessment/Site Assessment Submission Checklist, Utah ANG Base, Salt Lake City, Utah.

Parsons Engineering Sciences (1995). Personal Communication, April 15, 1996.

United States Department of Agriculture, 1974. Soil Survey of the Salt Lake City Area, Utah. United States Soil Conservation Service. Washington, D. C.

United States Environmental Protection Agency, 1979. Methods for Chemical Analysis of Water and Wastes. USEPA-600/4-79-020 and as amended 1982 (USEPA-600/482-055).

United States Environmental Protection Agency, 1980. Background Document, Resource Conservation and Recovery Act (RCRA), Subtitle C – Hazardous Waste Management, Section 3001 – Identification and Listing of Hazardous Waste. Section 261.24-EP. Toxicity Characteristic, Environmental Protection Agency.

United States Environmental Protection Agency, 1986a. Test Methods for Evaluating Solid Wastes. Laboratory Manual, Physical/Chemical Methods, SW-846, Volume 1A, Third Edition. Office of Solid Waste and Emergency Response, Washington, D. C.

United States Environmental Protection Agency, 1986b. Superfund Public Health Evaluation Manual. Office of Emergency and Remedial Response, Washington, D. C.

United States Environmental Protection Agency, 1987a. Guidance for Data Quality Objectives for Remedial Response Activities. Washington, D. C.

United States Environmental Protection Agency, 1987b. Superfund Exposure Assessment Manual. Office of Emergency Response, Washington, D. C.

United States Environmental Protection Agency, 1990. Assessing UST Corrective Action Technologies: Site Assessment and Selection of Unsaturated Zone Treatment Technologies. EPA 600-2-90-011. Washington, D. C.

United States Geological Survey, 1963. Surficial Geologic Map of the Salt Lake City North Quadrangle, Davis and Salt Lake Counties, Utah, (Photo Revised 1975), 1 sheet.

Utah Department of Environmental Quality, Division of Environmental Response and Remediation Leaking Underground Storage Tank Program, 1995. Guidelines for Utah's Tier 1 Risk-Based Corrective Action: Utah's Guide for Screening Petroleum-Contaminated Sites, 16 pp. Salt Lake City, Utah.

Utah Department of Health Environmental Division, 1990. Estimating Numeric Cleanup Levels for Petroleum-Contaminated Soil at Underground Storage Tank Release Sites. Salt Lake City, Utah.

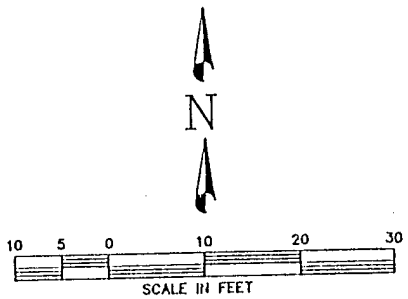
Utah Department of Health Environmental Division, 1990. Use of the Guideline Document for Estimating Numeric Cleanup Levels for Petroleum-Contaminated Soil at Underground Storage Tank Release Sites. Salt Lake City, Utah.

Wall, Lt. Jack, Personal Communication, 11 August 1994.

Wall, Lt. Jack, Personal Communication, 23 March 1995.

APPENDIX A

SURVEY REPORT



UST-007GS
UST-010SV
UST-008GS

SSMH
TBM-2
NO. RIM
ELEV. 4219.46

MW-9
UST-003GS
UST-009SV
UST-003SV
UST-006GS
UST-006SV
UST-006BH
UST-005BH
MW-8
UST-001BH
UST-002GS
UST-008SV
UST-005SV
UST-005GS
UST-002SV
UST-002BH
UST-004BH
UST-007SV
UST-001GS
UST-003BH
UST-004SV
UST-001SV
UST-004GS
BUILDING 1608
MW-7

STATION	GROUND EL.	PVC EL.
UST-001GS	4218.62	
UST-002GS	4218.56	
UST-003GS	4218.71	
UST-004GS	4219.09	
UST-005GS	4219.11	
UST-006GS	4219.18	
UST-007GS	4218.93	
UST-008GS	4219.19	
UST-001SV	4219.09	
UST-002SV	4219.11	
UST-003SV	4219.19	
UST-004SV	4218.92	
UST-005SV	4218.94	
UST-006SV	4218.84	
UST-007SV	4218.62	
UST-008SV	4218.56	
UST-009SV	4218.71	
UST-010SV	4219.34	
UST-007MW	4218.99	4218.67
UST-008MW	4219.12	4218.63
UST-009MW	4218.73	4218.47
UST-001BH	4218.91	
UST-002BH	4219.17	
UST-003BH	4219.94	
UST-004BH	4219.48	
UST-005BH	4219.14	
UST-006BH	4219.17	

DATE
JOB NO. 1840.100
SHEET
DRAWN

MONITORING WELL AND SOIL BORING LOCATIONS
AT THE UTAH AIR NATIONAL GUARD BASE, SLC, UTAH
OPTECH

DESCRIPTION
BY
DATE

MOUNTAIN STATES SURVEYS
140 WEST 2100 SOUTH, SUITE 110
SALT LAKE CITY, UTAH 84115
PH. 801-485-5631

STATION	GROUND EL.	PVC EL.
UST-007MW	4218.99	4218.67
UST-008MW	4219.12	4218.62
UST-009MW	4218.73	4218.47
UST-010MW	4219.07	4218.84
UST-011MW	4216.81	4216.54
UST-012MW	4217.64	4217.37
UST-009GP	4217.98	
UST-010GP	4219.07	
UST-011GP	4218.05	
UST-012GP	4217.81	
UST-013GP	4217.27	
UST-014GP		
UST-015GP	4217.13	
UST-016GP	4216.78	
UST-017GP	4216.79	
UST-018GP	4217.26	
UST-019GP	4218.98	
UST-020GP	4218.98	
UST-021GP	4217.04	

NOTE:
UANABLE TO GAIN ACCESS TO UST-014GP, GATE LOCKED.

DATE 11-16-95
JOB NO. 2055.100
SHEET 02055WT

JOB DESCRIPTION: MONITORING WELL & GOEPROBE LOCATIONS

CLIENT: OPTECH

BY: B.B

Table A.1
Coordinates of Wells and Soil Borings from Temporary Benchmark-2 No. RIM
Former UST, Building 1608
151st ARW, Utah ANG Base, Salt Lake City, Utah

Station/Location	X Coordinate (North/South) (Results in Feet)	Y Coordinate (West/East) (Results in Feet)	Z Coordinate (Ground Elevation) (Results in Feet)
UST-001GS	100 S	76.25 W	4218.62
UST-002GS	61.25 S	75 W	4218.56
UST-003GS	20 S	75 W	4218.71
UST-004GS	101.25 S	37.5 W	4219.08
UST-005GS	62.5 S	37.5 W	4219.11
UST-006GS	21.25 S	37.5 W	4219.18
UST-007GS	20 N	75 W	4218.93
UST-008GS	21.25 N	37.5 W	4219.49
UST-009GP	24.38 N	133.13 W	4217.98
UST-010GP	43.13 N	67.5 W	4219.07
UST-011GP	11.25 S	131.25 W	4218.05
UST-012GP	101.25 S	129.38 W	4217.18
UST-013GP	208.13 S	155.63 W	4217.27
UST-014GP	*	*	*
UST-015GP	283.13 S	33.75 E	4217.13
UST-016GP	311.25 S	108.75 E	4216.78
UST-017GP	243.75 S	140.63 E	4216.79
UST-018GP	166.88 S	114.38 E	4217.26
UST-019GP	125.63 S	1.88 W	4218.98
UST-020GP	91.88 S	11.25 E	4218.98
UST-021GP	241.88 S	213.75 E	4217.04

Table A.1 (Concluded)
Coordinates of Wells and Soil Borings from Temporary Benchmark-2 No. RIM
Former UST, Building 1608
151st ARG, Utah ANG Base, Salt Lake City, Utah

Station/Location	X Coordinate (North/South) (Results in Feet)	Y Coordinate (West/East) (Results in Feet)	Z Coordinate (Ground Elevation) (Results in Feet)
UST-001BH	60 S	56.25 W	4218.91
UST-002BH	81.25 S	47.5 W	4219.17
UST-003BH	100 S	56.25 W	4218.94
UST-004BH	85 S	85 W	4218.48
UST-005BH	42.5 S	37.5 W	4219.14
UST-006BH	23.75 S	37.5 W	4219.17
UST-007MW	129.38 S	3.75 W	4218.99
UST-008MW	13.13 S	20.63 E	4219.12
UST-009MW	20.63 S	76.88 W	4218.73
UST-010MW	43.13 N	67.5 W	4219.07
UST-011MW	286.88 S	163.13 W	4216.81
UST-012MW	301.88 S	136.88 E	4217.64
MW-7	127.5 S	5 W	N/A
MW-8	43.75 S	18.75 E	N/A
MW-9	18.75 S	75 W	N/A

UST - Underground Storage Tank.
MW - Monitoring Well.
BH - Borehole.
N/A - Not Available.

GS – Strataprobe Boring.
GP – Geoprobe™ Boring.
*Unable to gain access to UST-014GP, gate locked.

APPENDIX B

SCREENING RESULTS

SECTION B.1 INTRODUCTION

This section of Appendix B contains the soil vapor activities and groundwater screening report of the recent SSI at the Utah ANG, Salt Lake City, Utah. The cover letter from TEG, and explanation of the QA/QC for analytical methods, the data report for the analyses conducted, the results of the analyses, and the chain-of-custody forms follow.

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

7110 38th Drive SE
Lacey, Washington 98503

Mobile Environmental Laboratories
Environmental Sampling Services

Telephone: 206-459-4670
Fax: 206-459-3432

November 3, 1994

Ms. Kathleen Merino
OPTECH
4100 N.W. Loop 410, Suite 230
San Antonio, TX 78229

Dear Ms. Merino:

Please find enclosed the data report for the analyses conducted on-site for samples from the Utah Air National Guard Base Former UST Builing 1608 Project, Salt Lake City, Utah. Soil vapor and water samples were collected by the StrataProbe and analyzed for Volatile Aromatic Hydrocarbons and Chlorinated Hydrocarbons by EPA Method 8021 (8010 + 8020) and for Total Volatile Hydrocarbons (Gasoline for the water samples) by Modified EPA Method 8015.

The results of the analyses are summarized in the attached table. An invoice for this analytical work and StrataProbe services is also enclosed.

TEG Northwest appreciates the opportunity to have provided analytical services to OPTECH for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael A. Korosec
(President)

QA/QC FOR ANALYTICAL METHODS

GENERAL

The TEG Northwest Mobile Laboratory quality assurance and quality control (QA/QC) procedures are conducted following the guidelines and objectives which meet or exceed certification/accreditation requirements of California DOHS, Washington DOE, and Oregon DEQ. The Quality Control Program is a consistent set of procedures which assures data quality through the use of appropriate blanks, replicate analyses, surrogate spikes, and matrix spikes, and with the use of reference standards that meet or exceed EPA standards.

When analyses are taking place on-site with the mobile lab, the need for Field Blanks or Travel/Trip Blanks is eliminated. If there is going to be a delay before sample preparation for analysis, the sample is stored at 4° C.

ANALYTICAL METHODS

TEG Northwest Mobile Labs use analytical methodologies which are in conformity with U. S. Environmental Protection Agency (EPA), Washington DOE, and Oregon DEQ methodologies. When necessary and appropriate due to the nature or composition of the sample, TEG may use variations of the methods which are consistent with recognized standards or variations used by the industry and government laboratories.

Purgeable Volatile Halocarbons
(Chlorinated Hydrocarbons, EPA 601/8010,8021)

A blank and a calibration standard are run at the beginning of the day. The standard must be within 15% of the continuing calibration curve value. The standard is rerun at the end of the day if more than 10 samples have been run. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135%. At least 1 method blank is run per day.

Purgeable Volatile Aromatics
(BTEX, EPA 602/8020)

A blank and a calibration standard are run at the beginning of the day. The standard must be within 15% of the continuing calibration curve value. The standard is rerun at the end of the day if more than 10 samples have been run. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135%. At least 1 method blank is run per day.

TPH-Gasoline, TPH-Diesel
(Gasoline and/or Diesel, Modified EPA 8015, WTPH-G/WTPH-D)

A blank and a calibration standard are run at the beginning of the day. The standard must be within 15% of the continuing calibration curve value. The standard is rerun at the end of the day. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135%. A duplicate sample is run at a rate of 1 per 10 samples (or a matrix spike sample is prepared and analyzed). At least 1 method blank is run per 10 samples analyzed.

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST INC.

UTAH AIR NATIONAL GUARD BASE FORMER UST BUILDING 1608
Salt Lake City, Utah
Operational Technologies Corporation, Inc.

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020); Total Volatile Hydrocarbons in Soil Vapor

Sample-Number	MDL	Method Blank	UST-004	UST-005	UST-006	UST-010	UST-009
Date	10/26/94	10/26/94	10/26/94	10/26/94	10/26/94	10/26/94	10/26/94
	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv
1,1 Dichloroethene	0.01	nd	nd	nd	nd	nd	nd
1,2 Dichloroethene	0.01	nd	nd	nd	nd	nd	nd
Benzene	0.01	nd	0.02	25.5	0.13	nd	0.02
Trichloroethene	0.01	nd	nd	nd	nd	nd	nd
Toluene	0.01	nd	0.01	2.38	nd	nd	nd
Cis Dichloropropene	0.01	nd	nd	nd	nd	nd	nd
Trans Dichlorpropene	0.01	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.01	nd	nd	nd	nd	nd	nd
Chlorobenzene	0.01	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.01	nd	nd	0.32	nd	nd	nd
Total Xylenes	0.01	nd	0.02	0.27	nd	nd	nd
1,3 Dichlorobenzene	0.01	nd	nd	nd	nd	nd	nd
1,4 Dichlorobenzene	0.01	nd	nd	nd	nd	nd	nd
1,2 Dichlorobenzene	0.01	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.01	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.01	nd	nd	nd	nd	nd	nd
Chloroform	0.01	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.01	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.01	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.01	nd	nd	nd	nd	nd	nd
Tetrachloroethane	0.01	nd	nd	nd	nd	nd	nd
TPH	1	nd	nd	1984	13	nd	nd
methane	1	nd	377	606	52	nd	nd

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

UTAH AIR NATIONAL GUARD BASE FORMER UST BUILDING 1608
Salt Lake City, Utah
Operational Technologies Corporation, Inc.

Specific Haiogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020); Total Volatile Hydrocarbons in Soil Vapor

Sample-Number	MDL	UST-008	UST-002	UST-002 Dup	UST-001	UST-003	UST-007
Date	10/26/94	10/26/94	10/26/94	10/26/94	10/26/94	10/27/94	10/27/94
	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv
1,1 Dichloroethene	0.01	nd	nd	nd	nd	nd	nd
1,2 Dichloroethene	0.01	nd	nd	nd	nd	nd	nd
Benzene	0.01	nd	113	159	51.1	2.5	0.49
Trichloroethene	0.01	nd	nd	nd	nd	nd	nd
Toluene	0.01	nd	13.8	20.4	9.1	0.38	0.14
Cis Dichloropropene	0.01	nd	nd	nd	nd	nd	nd
Trans Dichlorpropene	0.01	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.01	nd	nd	nd	nd	nd	nd
Chlorobenzene	0.01	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.01	nd	0.82	1.26	1.25	nd	0.04
Total Xylenes	0.01	0.02	4.48	6.57	1.53	0.08	0.07
1,3 Dichlorobenzene	0.01	nd	nd	nd	nd	nd	nd
1,4 Dichlorobenzene	0.01	nd	nd	nd	nd	nd	nd
1,2 Dichlorobenzene	0.01	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.01	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.01	nd	nd	nd	nd	nd	nd
Chloroform	0.01	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.01	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.01	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.01	nd	nd	nd	nd	nd	nd
Tetrachloroethane	0.01	nd	nd	nd	nd	nd	nd
TPH	1	nd	5253	7459	4865	181	18
Methane	1	nd	163	287	204	nd	nd

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

UTAH AIR NATIONAL GUARD BASE FORMER UST BUILDING 1608
Salt Lake City, Utah
Operational Technologies Corporation, Inc.

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	Meth. Blank	UST-001 GS	UST-002 GS	UST-003 GS	UST-004 GS	UST-005 GS
Date	10/27/94	10/27/94	10/27/94	10/27/94	10/27/94	10/27/94	10/27/94
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
1,1 Dichloroethene	1	nd	nd	int	nd	int	int
1,2 Dichloroethene	1	nd	nd	int	nd	int	int
Benzene	1	nd	nd	16000	1	309200	22248
Trichloroethene	1	nd	nd	int	nd	int	int
Toluene	1	nd	2	11846	1	920000	34147
Cis Dichloropropene	1	nd	nd	int	nd	int	int
Trans Dichlorpropene	1	nd	nd	int	nd	int	int
Tetrachloroethene	1	nd	nd	int	nd	int	int
Chlorobenzene	1	nd	nd	int	nd	int	int
Ethylbenzene	1	nd	nd	42462	nd	387200	25814
Total Xylenes	1	nd	1	20769	4	1684000	91085
1,3 Dichlorobenzene	1	nd	nd	int	nd	int	int
1,4 Dichlorobenzene	1	nd	nd	int	nd	int	int
1,2 Dichlorobenzene	1	nd	nd	int	nd	int	int
1,1 Dichloroethane	1	nd	nd	int	nd	int	int
1,2 Dichloroethane	1	nd	nd	int	nd	int	int
Chloroform	1	nd	nd	int	nd	int	int
Carbon Tetrachloride	1	nd	nd	int	nd	int	int
1,1,1 Trichloroethane	1	nd	nd	int	nd	int	int
1,1,2 Trichloroethane	1	nd	nd	int	nd	int	int
Tetrachloroethane	1	nd	nd	int	nd	int	int
Spike Recovery (%)		97	104	int	90	int	int

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

UTAH AIR NATIONAL GUARD BASE FORMER UST BUILDING 1608
Salt Lake City, Utah
Operational Technologies Corporation, Inc.

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	UST-006 GS	UST-008 GS	UST-008 GS-Dup	UST-007 GS
Date	10/27/94 ug/l	10/27/94 ug/l	10/27/94 ug/l	10/27/94 ug/l	10/27/94 ug/l
1,1 Dichloroethene	1	nd	nd	nd	nd
1,2 Dichloroethene	1	nd	nd	nd	nd
Benzene	1	3	nd	nd	nd
Trichloroethene	1	nd	nd	nd	nd
Toluene	1	3	nd	nd	2
Cis Dichloropropene	1	nd	nd	nd	nd
Trans Dichlorpropene	1	nd	nd	nd	nd
Tetrachloroethene	1	nd	nd	nd	nd
Chlorobenzene	1	nd	nd	nd	nd
Ethylbenzene	1	nd	nd	nd	nd
Total Xylenes	1	4	nd	nd	nd
1,3 Dichlorobenzene	1	nd	nd	nd	nd
1,4 Dichlorobenzene	1	nd	nd	nd	nd
1,2 Dichlorobenzene	1	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd	nd
1,2 Dichloroethane	1	nd	nd	nd	nd
Chloroform	1	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd	nd
Tetrachloroethane	1	nd	nd	nd	nd
Spike Recovery (%)		104	90	105	111

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

UTAH AIR NATIONAL GUARD BASE FORMER UST BUILDING 1608
Salt Lake City, Utah
Operational Technologies Corporation, Inc.

Gasoline Range Hydrocarbons (EPA 8015) in Water

Sample Number	Date	Recovery (%)	Gasoline ug/l
Meth. Blank	10/27/94	100	nd
UST-001-GS	10/27/94	107	nd
UST-002-GS	10/27/94	int	8220000
UST-003-GS	10/27/94	96	2300
UST-004-GS	10/27/94	int	18380000
UST-005-GS	10/27/94	int	3080000
UST-006-GS	10/27/94	108	nd
UST-007-GS	10/27/94	114	nd
UST-008-GS	10/27/94	93	nd
UST-008-GS-Dup	10/27/94	107	nd
Method Detection Limit			100

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that Interfering peaks prevent determination.

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY, INC.

CHAIN-OF-CUSTODY RECORD

CLIENT: Operational Technologies Corp.
ADDRESS: 4100 NW Loop 410, Suite 230 SATX
PHONE: 210-731-4000 FAX: 210-731-4005
CLIENT PROJECT #: Kelly AFB PROJECT MANAGER: Kathleen Marino

DATE: 10/26/94 PAGE 1 OF 1
TEG PROJECT #: EHV941026-01
LOCATION: UST - Salt Lake City
COLLECTOR: DATE OF COLLECTION: 10/26/94

Sample Number	Depth	Time	Sample Type	Container Type	VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (g & d)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	TPH	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
SV-UST-004	5		Soil Vapor	3 vial Syr.	X	X													X				
SV-UST-005	5																						
SV-UST-006	5																						
SV-UST-010	5	~~13:52~~																					
SV-UST-009	5	~~13:53~~																					
SV UST 008	5	14:20																					
UST-003		13:23	Water	3x 3oml VOA																			
UST-002			Water	"																			
SV-UST-002	5	15:41	Soil Vapor	3 vial Syr																			
SV-UST-002 Rp	5	15:41																					
SV-UST-001	5	16:31																					
UST-004		17:07	Water	3x 3oml VOA																			
UST-005		17:16	Water																				
UST-006		17:35	Water																				

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME
[signature] 26 Oct 94/1635 [signature] 1630

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY, INC.

CHAIN-OF-CUSTODY RECORD

CLIENT: Operational Technologies, Corp.
ADDRESS: 4100 NW Loop 410, Suite 410 230 San Antonio, TX
PHONE: 210-731-0000 FAX: 210-731-0008
CLIENT PROJECT #: Former UST Facilities 1600 PROJECT MANAGER: Keith Wesson, Merlin

DATE: 10/27/94 PAGE 1 OF 1
TEG PROJECT #: HOU 941026-01
LOCATION: UTC - Salt Lake City
COLLECTOR: DATE OF COLLECTION: 10/27/94

Sample Number	Depth	Time	Sample Type	Container Type	VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (g & d)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	TPH	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
V-UST-003	5'		Soil Vapor	20ml Syr.	X	X													X				
V-UST-007	5'		↓	↓	↓	↓													↓				
UST-006			Water	3*30ml VOA																			
UST-003			↓	↓																			
UST-003-Dup			↓																				
UST-007			↓	↓	↓	↓													↓				

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME
[signature] 27-Oct-94, 1540 [signature] 27/10/94 1540
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS
☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT
TOTAL NUMBER OF CONTAINERS
CHAIN OF CUSTODY SEALS Y/N/NA
SEALS INTACT? Y/N/NA
RECEIVED GOOD COND./COLD
NOTES:

LABORATORY NOTES:

Table B.1
GC Screening Results - Soil
151st ARG, Utah ANG Base, Salt Lake City, Utah

Boring Location	Sample Interval (ft. BLS)	Sample Mass (grams)	Volatile Concentrations								
			Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	TOTAL BTEX	Tetrachloroethene (PCE) (ppb)	Trichloroethene (TCE) (ppb)	Dichloroethene (DCE) (ppb)	TOTAL PCE\TCE\DCE
3 pt. Calibration	100 ppb	-	100	100	100	300	600	100	100	100	300
3 pt. Calibration	1 ppm	-	1,000	1,000	1,000	3,000	6,000	1,000	1,000	1,000	3,000
3 pt. Calibration	10 ppm	-	10,000	10,000	10,000	30,000	60,000	10,000	10,000	10,000	30,000
Air Blank	-	-	1	ND	ND	ND	1	ND	ND	ND	0
UST-002	1'-2'	10	4	12	28	90	134	36	9	1	46
UST-002	11'-12'	10	ND	ND	785	10,810	11,595	130	ND	ND	130
UST-001	5'-6'	10	46	79	15	ND	140	51	104	1	156
Calibration	10 ppm	-	10,000	10,000	10,000	30,000	60,000	10,000	10,000	10,000	30,000
UST-006	2'-3'	10	15	ND	ND	ND	25	ND	ND	8	8
UST-002	5'-6'	10	ND	ND	ND	ND	0	ND	ND	ND	0
3 pt. Calibration	100 ppb	-	100	100	100	300	600	100	100	100	300
3 pt. Calibration	1 ppm	-	1,000	1,000	1,000	3,000	6,000	1,000	1,000	1,000	3,000
3 pt. Calibration	10 ppm	-	10,000	10,000	10,000	30,000	60,000	10,000	10,000	10,000	30,000
UST-005	9'-10'	10	ND	ND	15	ND	15	ND	ND	195	195
UST-004	1'-2'	10	ND	ND	323	ND	323	ND	ND	3	3
UST-006	5'-6'	10	ND	ND	36	1,860	1,896	ND	ND	7	7
UST-006	9'-10'	10	ND	ND	ND	ND	0	ND	ND	ND	0

Table B.1
GC Screening Results - Soil
151st ARG, Utah ANG Base, Salt Lake City, Utah

Boring Location	Sample Interval (ft. BLS)	Sample Mass (grams)	Volatile Concentrations								
			Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	TOTAL BTEX	Tetrachloroethene (PCE) (ppb)	Trichloroethene (TCE) (ppb)	Dichloroethene (DCE) (ppb)	TOTAL PCE\TCE\DCE
3 pt. Calibration	100 ppb	-	100	100	100	300	600	100	100	100	300
3 pt. Calibration	1 ppm	-	1,000	1,000	1,000	3,000	6,000	1,000	1,000	1,000	3,000
3 pt. Calibration	10 ppm	-	10,000	10,000	10,000	30,000	60,000	10,000	10,000	10,000	30,000
Air Blank	-	-	ND	ND	ND	ND	0	ND	ND	ND	0
UST-004	1'-2'	10	ND	2	8	44	54	44	ND	ND	44
UST-004	5'-6'	10	ND	ND	ND	ND	0	ND	ND	ND	0
UST-003	5'-6'	10	ND	ND	ND	ND	0	ND	ND	ND	0
UST-007	6'-8'	10	3,895	9,045	ND	ND	12,940	7,625	3,975	ND	11,600
Calibration	10 ppm	-	10,000	10,000	10,000	30,000	60,000	10,000	10,000	10,000	30,000
Air Blank	-	-	ND	2	ND	ND	2	ND	ND	ND	0
UST-004	13'-14'	10	28	13	ND	ND	41	ND	4	7	11
UST-007	6'-8'	10	464,000	325,400	630	5,860	795,890	52,740	222,300	136,260	411,300
UST-005	2'-3'	10	ND	17	8	254	279	ND	7	ND	7
Calibration	10 ppm	-	10,000	10,000	10,000	30,000	60,000	10,000	10,000	10,000	30,000
Air Blank	-	-	ND	ND	ND	ND	0	ND	ND	ND	0
UST-005	2'-3'	10	2	1	ND	ND	3	ND	1	ND	1
UST-003	1'-2'	10	ND	ND	ND	ND	0	ND	ND	ND	0
UST-003	9'-10'	10	ND	ND	ND	ND	0	ND	ND	ND	0
UST-001	10.5'-11.5'	10	4	7	106	ND	117	ND	5	32	37

ND = Indicates compound analyzed for but NOT detected

Table B.1
GC Screening Results - Soil
151st ARG, Utah ANG Base, Salt Lake City, Utah

Boring Location	Sample Interval (ft. BLS)	Sample Mass (grams)	Volatile Concentrations								
			Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	TOTAL BTEX	Tetrachloroethene (PCE) (ppb)	Trichloroethene (TCE) (ppb)	Dichloroethene (DCE) (ppb)	TOTAL PCE\TCE\DCE
3 pt. Calibration	100 ppb	-	100	100	100	300	600	100	100	100	300
3 pt. Calibration	1 ppm	-	1,000	1,000	1,000	3,000	6,000	1,000	1,000	1,000	3,000
3 pt. Calibration	10 ppm	-	10,000	10,000	10,000	30,000	60,000	10,000	10,000	10,000	30,000
Air Blank	-	-	ND	ND	ND	ND	0	ND	ND	ND	0
UST-006	1'-2'	10	32	ND	ND	ND	32	ND	ND	102	102
UST-005	1'-2'	10	12	ND	ND	ND	12	ND	ND	47	47
UST-007	12'-14'	10	ND	ND	ND	ND	0	ND	ND	ND	0
UST-007	9'-10'	10	46	ND	ND	ND	46	ND	ND	98	98
Calibration	10 ppm	-	10,000	10,000	10,000	30,000	60,000	10,000	10,000	10,000	30,000
Air Blank	-	-	ND	ND	ND	ND	0	ND	ND	ND	0
UST-009	8'-10'	10	ND	89	ND	ND	89	ND	ND	ND	0
UST-009	13'-15'	10	ND	ND	ND	ND	0	ND	ND	ND	0
Calibration	10 ppm	-	10,000	10,000	10,000	30,000	60,000	10,000	10,000	10,000	30,000
Air Blank	-	-	ND	ND	ND	ND	0	ND	ND	ND	0
UST-008	13'-15'	10	ND	ND	ND	ND	0	ND	ND	ND	0
UST-008	10'-12'	10	ND	ND	ND	ND	0	ND	ND	ND	0
UST-008	5'-7'	10	ND	ND	ND	ND	0	ND	ND	ND	0
Decon Water	-	10(ml)	ND	ND	ND	ND	0	ND	ND	ND	0

ND = Indicates compound analyzed for but NOT detected

Table B.1
GC Screening Results - Soil
151st ARG, Utah ANG Base, Salt Lake City, Utah

Boring Location	Sample Interval (ft. BLS)	Sample Mass (grams)	Volatile Concentrations								
			Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	TOTAL BTEX	Tetrachloroethene (PCE) (ppb)	Trichloroethene (TCE) (ppb)	Dichloroethene (DCE) (ppb)	TOTAL PCE\TCE\DCE
3 pt. Calibration	100 ppb	-	100	100	100	300	600	100	100	100	300
3 pt. Calibration	1 ppm	-	1,000	1,000	1,000	3,000	6,000	1,000	1,000	1,000	3,000
3 pt. Calibration	10 ppm	-	10,000	10,000	10,000	30,000	60,000	10,000	10,000	10,000	30,000
Air Blank	-	-	ND	ND	ND	ND	0	ND	ND	ND	0
UST-006	1'-2'	10	32	ND	ND	ND	32	ND	ND	102	102
UST-005	1'-2'	10	12	ND	ND	ND	12	ND	ND	47	47
UST-007	12'-14'	10	ND	ND	ND	ND	0	ND	ND	ND	0
UST-007	9'-10'	10	46	ND	ND	ND	46	ND	ND	98	98
Calibration	10 ppm	-	10,000	10,000	10,000	30,000	60,000	10,000	10,000	10,000	30,000
Air Blank	-	-	ND	ND	ND	ND	0	ND	ND	ND	0
UST-009	8'-10'	10	ND	89	ND	ND	89	ND	ND	ND	0
UST-009	13'-15'	10	ND	ND	ND	ND	0	ND	ND	ND	0
Calibration	10 ppm	-	10,000	10,000	10,000	30,000	60,000	10,000	10,000	10,000	30,000
Air Blank	-	-	ND	ND	ND	ND	0	ND	ND	ND	0
UST-008	13'-15'	10	ND	ND	ND	ND	0	ND	ND	ND	0
UST-008	10'-12'	10	ND	ND	ND	ND	0	ND	ND	ND	0
UST-008	5'-7'	10	ND	ND	ND	ND	0	ND	ND	ND	0
Decon Water	-	10(ml)	ND	ND	ND	ND	0	ND	ND	ND	0

ND = Indicates compound analyzed for but NOT detected

SECTION B.2 INTRODUCTION

This section of Appendix B contains the field gas chromatography (GC) analysis results of the recent SSI at the Utah ANG, Salt Lake City, Utah. The cover letter from TEG, an explanation of the QA/QC for analytical methods, the data report for the analyses conducted, the results of the analyses, and the chain-of-custody forms follow.

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

7110 38th Drive SE
Lacey, Washington 98503

Mobile Environmental Laboratories
Environmental Sampling Services

Telephone: 360-459-4670
Fax: 360-459-3432

November 2, 1995

Russ Cason
Operational Technologies Corporation
4100 NW. Loop 410
Suite 230
San Antonio, TX 78229-4253

Dear Mr. Cason:

Please find enclosed the data report for on-site analyses conducted October 17, 18, 19 and 20, 1995, for soil and water samples from the Utah Air National Guard Base in Salt Lake City, Utah. The soil and water samples were analyzed for Specific Halogenated Hydrocarbons and BTEX by Modified EPA Method 8010/8020, and Gasoline and Diesel by Modified EPA Method 8015.

The results of these analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this analytical work is also enclosed.

TEG Northwest appreciates the opportunity to have provided analytical services to Optech for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael A. Korosec
President

QA/QC FOR ANALYTICAL METHODS

GENERAL

The TEG Northwest Laboratory quality assurance and quality control (QA/QC) procedures are conducted following the guidelines and objectives which meet or exceed certification/-accreditation requirements of California DOHS, Washington DOE, and Oregon DEQ. The Quality Control Program is a consistent set of procedures which assures data quality through the use of appropriate blanks, replicate analyses, surrogate spikes, and matrix spikes, and with the use of reference standards that meet or exceed EPA standards.

When analyses are taking place on-site with the mobile lab, the need for Field Blanks or Travel/Trip Blanks is eliminated. If there is going to be a delay before sample preparation for analysis, the sample is stored at 4° C.

ANALYTICAL METHODS

TEG Northwest Labs use analytical methodologies which are in conformity with U. S. Environmental Protection Agency (EPA), Washington DOE, and Oregon DEQ methodologies. When necessary and appropriate due to the nature or composition of the sample, TEG may use variations of the methods which are consistent with recognized standards or variations used by the industry and government laboratories.

TPH-Gasoline, TPH-Diesel
(Gasoline and/or Diesel, Modified EPA 8015)

A blank and a calibration standard are run at the beginning of the day. The standard must be within 15% of the continuing calibration curve value. The standard is rerun at the end of the day. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135%. A duplicate sample is run at a rate of 1 per 10 samples (or a matrix spike sample is prepared and analyzed). At least 1 method blank is run per 10 samples analyzed.

Purgeable Volatile Aromatics
(BTEX, EPA 602/8020)

A blank and a calibration standard are run at the beginning of the day. The standard must be within 15% of the continuing calibration curve value. The standard is rerun at the end of the day if more than 10 samples have been run. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135%. At least 1 method blank is run per day.

Purgeable Volatile Halocarbons
(Chlorinated Hydrocarbons, EPA 601/8010,8021)

A blank and a calibration standard are run at the beginning of the day. The standard must be within 15% of the continuing calibration curve value. The standard is rerun at the end of the day if more than 10 samples have been run. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135%. At least 1 method blank is run per day.

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST INC.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Soil by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline mg/kg	Diesel mg/kg
Meth. Blank	10/17/95	104	nd	nd
UST-010 4-6'	10/17/95	88	nd	nd
UST-010 4-6'-Dup	10/17/95	99	nd	nd
UST-010-6-8'	10/17/95	95	nd	nd
UST-010 11-13'	10/17/95	93	nd	nd
UST-020 4-6'	10/17/95	82	nd	nd
UST-020 6-8'	10/17/95	91	nd	nd
UST-020 11-13'	10/17/95	87	nd	nd
UST-019 4-6'	10/17/95	113	273	59
UST-019 6-8'	10/17/95	int	221	20
MDL			10	20

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

TOTAL PETROLEUM HYDROCARBONS AS DIESEL

INCHCAPE TESTING SERVICES - ANAMETRIX

(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503015	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/13/95
Date Extracted:	3/3/95	Concentration Units:	ug/L
Instrument ID:	HP19		

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503015-02	UST007MW	3/1/95	3/7/95	1	50	1200	90%

ND: Not detected at the reporting limit for the method.
TPHd: Total Petroleum Hydrocarbons as C10-C28 is determined by GC/FID (modified EPA Method 8015) following sample extraction by EPA Method 3510.
Surrogate recovery quality control limits for o-terphenyl are 67-103%.

All testing procedures follow California Department of Health Services approved methods

Doshi 3/17/95
Analyst Date

Cheryl Brimer 3/17/95
Supervisor Date

000051

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

INCHCAPE TESTING SERVICES - ANAMETRIX

(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503015	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/17/95
Instrument ID:	HP4	Concentration Units:	ug/L

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503015-03	007MWDUP	3/1/95	3/8/95	1000	50000	100000	114%

ND: Not detected at the reporting limit for the method.
TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030
Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

Reggie Davison 3/22/95
Analyst Date

Supervisor Date

000015

TOTAL PETROLEUM HYDROCARBONS AS DIESEL

INCHCAPE TESTING SERVICES - ANAMETRIX

(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503015	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/13/95
Date Extracted:	3/3/95	Concentration Units:	ug/L
Instrument ID:	HP19		

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503015-03	007MWDUP	3/1/95	3/7/95	1	50	2100	92%

ND: Not detected at the reporting limit for the method.

TPHd: Total Petroleum Hydrocarbons as C10-C28 is determined by GC/FID (modified EPA Method 8015) following sample extraction by EPA Method 3510.

Surrogate recovery quality control limits for o-terphenyl are 67-103%.

All testing procedures follow California Department of Health Services approved methods.

Doshi 3/17/95

Analyst Date

Cheryl Burman 3/17/95

Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

INCHCAPE TESTING SERVICES - ANAMETRIX

(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503015	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/17/95
Instrument ID:	HP4	Concentration Units:	ug/L

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503015-01	F. BLANK	3/1/95	3/6/95	1	50	51	97%

ND: Not detected at the reporting limit for the method.

TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030

Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

Reggie Davison 3/22/95

Analyst Date

Supervisor Date 3/24/95

TOTAL PETROLEUM HYDROCARBONS AS DIESEL

INCHCAPE TESTING SERVICES - ANAMETRIX

(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503015	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/13/95
Date Extracted:	3/3/95	Concentration Units:	ug/L
Instrument ID:	HP19		

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503015-01	F. BLANK	3/1/95	3/7/95	1	50	ND	93%

ND: Not detected at the reporting limit for the method.
TPHd: Total Petroleum Hydrocarbons as C10-C28 is determined by GC/FID (modified EPA Method 8015) following sample extraction by EPA Method 3510.
Surrogate recovery quality control limits for o-terphenyl are 67-103%.

All testing procedures follow California Department of Health Services approved methods.

Doshi 3/17/95
Analyst Date

Cheryl Balmer 3/17/95
Supervisor Date

000048

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. RUSS CASON
OPERATIONAL TECHNOLOGIES CORP.
4100 N.W. LOOP 410, SUITE 230
SAN ANTONIO, TX 78229-4253

Workorder # : 9503048
Date Received : 03/03/95
Project ID : 1315-185
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- All holding times have been met for the analyses reported in this section.
- The concentrations reported as diesel for samples UST009MW and UST008MW are due to the presence of a combination of a heavier petroleum product of hydrocarbon range C18-C36 (possibly motor oil) and a lighter petroleum product of hydrocarbon range C6-C12 (possibly gasoline).

Chris Palmer 3/14/95
Department Supervisor Date

Doshi 3/14/95
Chemist Date

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Water by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline ug/l	Diesel ug/l
Meth. Blank	10/17/95	104	nd	nd
UST-010 8'	10/17/95	99	nd	nd
UST-010 16'	10/17/95	112	nd	2060
UST-020 8'	10/17/95	98	nd	nd
UST-020 8'-Dup	10/17/95	80	nd	nd
UST-020 16'	10/17/95	101	nd	nd
MDL			200	500

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	Method Blank	UST-010 4-6'	UST-010 4-6'-Dup	UST-010 6-8'	UST-010 11-13'	UST-020 4-6'
Date		10/17/95	10/17/95	10/17/95	10/17/95	10/17/95	10/17/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.05	nd	nd	nd	nd	nd	nd
o-Xylene	0.05	nd	nd	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		111	100	97	99	99	96

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	UST-020 6-8'	UST-020 11-13'	UST-019 4-6'	UST-019 6-8'
Date		10/17/95	10/17/95	10/17/95	10/17/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd
Benzene	0.05	nd	nd	1.92	8.76
Trichloroethene	0.05	nd	nd	nd	nd
Toluene	0.05	nd	nd	1.44	30.2
Tetrachloroethene	0.05	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	2.16	9.60
m,p-Xylene	0.05	nd	nd	16.8	37.6
o-Xylene	0.05	nd	nd	4.80	8.84
Dichloromethane	0.05	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd
Spike Recovery (%)		99	89	99	88

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	Method Blank	UST-010 8'	UST-010 16'	UST-020 8'	UST-020 8'-Dup	UST-020 16'
Date		10/17/95	10/17/95	10/17/95	10/17/95	10/17/95	10/17/95
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Vinylchloride	1	nd	nd	nd	2.0	2.5	3.6
1,1 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	1	nd	nd	nd	3.1	4.7	51.4
Benzene	1	nd	nd	nd	nd	nd	nd
Trichloroethene	1	nd	nd	nd	3.9	5.6	10.6
Toluene	1	nd	nd	nd	nd	nd	nd
Tetrachloroethene	1	nd	nd	nd	4.4	9.4	29.3
Ethylbenzene	1	nd	nd	nd	nd	nd	nd
m,p-Xylene	1	nd	nd	nd	nd	nd	nd
o-Xylene	1	nd	nd	nd	nd	nd	nd
Dichloromethane	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd	nd	nd	1.0
1,2 Dichloroethane	1	nd	nd	nd	nd	nd	nd
Chloroform	1	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		111	99	89	113	119	120

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Soil by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline mg/kg	Diesel mg/kg
Meth. Blank	10/18/95	90	nd	nd
UST-019 11-13'	10/18/95	99	nd	nd
UST-015 4-6'	10/18/95	83	nd	nd
UST-015 6-8'	10/18/95	85	nd	nd
UST-015 11-13'	10/18/95	100	nd	nd
UST-016 4-6'	10/18/95	82	nd	nd
UST-016 6-8'	10/18/95	86	nd	nd
UST-016 11-13'	10/18/95	91	nd	nd
UST-017 4-6'	10/18/95	89	nd	nd
UST-017 6-8'	10/18/95	90	nd	nd
UST-017 11-13'	10/18/95	92	nd	nd
MDL			10	20

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Water by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline ug/l	Diesel ug/l
Meth. Blank	10/18/95	90	nd	nd
UST-019 16'	10/18/95	120	nd	nd
UST-019 16'-Dup	10/18/95	97	nd	nd
UST-015 8'	10/18/95	99	457	nd
UST-016 8'	10/18/95	99	nd	nd
UST-016 8'-Dup	10/18/95	87	nd	nd
UST-016 16'	10/18/95	103	nd	nd
UST-017 8'	10/18/95	91	nd	nd
UST-017 16'	10/18/95	85	nd	nd
MDL			200	500

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	Method Blank	UST-019 11-13'	UST-015 4-6'	UST-015 6-8'	UST-015 11-13'	UST-016 4-6'
Date	mg/kg	10/18/95 mg/kg	10/18/95 mg/kg	10/18/95 mg/kg	10/18/95 mg/kg	10/18/95 mg/kg	10/18/95 mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	0.13	0.49	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	0.10	0.09	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.05	nd	nd	nd	nd	nd	nd
o-Xylene	0.05	nd	nd	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		100	119	83	104	90	116

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	UST-016 6-8'	UST-016 11-13'	UST-017 4-6'	UST-017 6-8'	UST-017 11-13'
Date		10/18/95	10/18/95	10/18/95	10/18/95	10/18/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd
m,p-Xylene	0.05	nd	nd	nd	nd	nd
o-Xylene	0.05	nd	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd
Spike Recovery (%)		86	97	97	109	95

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	Method Blank	UST-019 16'	UST-019 16'-Dup	UST-015 8'	UST-016 8'	UST-016 8'-Dup
Date	ug/l	10/18/95 ug/l	10/18/95 ug/l	10/18/95 ug/l	10/18/95 ug/l	10/18/95 ug/l	10/18/95 ug/l
Vinylchloride	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethene	1	nd	nd	nd	3.9	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd	18.1	nd	nd
Cis-1,2 Dichloroethene	1	nd	nd	nd	893	4.9	5.2
Benzene	1	nd	9.7	10.1	5.4	1.0	1.0
Trichloroethene	1	nd	nd	nd	35.4	nd	nd
Toluene	1	nd	19.6	19.5	23.3	2.4	2.7
Tetrachloroethene	1	nd	nd	nd	140	nd	nd
Ethylbenzene	1	nd	nd	nd	nd	nd	nd
m,p-Xylene	1	nd	31.5	29.8	80.2	nd	nd
o-Xylene	1	nd	5.0	5.7	21.3	nd	nd
Dichloromethane	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd	1.5	nd	nd
1,2 Dichloroethane	1	nd	nd	nd	nd	nd	nd
Chloroform	1	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		100	115	112	111	86	80

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	UST-016 16'	UST-017 8'	UST-017 16'
Date		10/18/95	10/18/95	10/18/95
	ug/l	ug/l	ug/l	ug/l
Vinylchloride	1	nd	nd	nd
1,1 Dichloroethene	1	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd
Cis-1,2 Dichloroethene	1	1.3	1.2	90.1
Benzene	1	1.2	9.4	31.7
Trichloroethene	1	1.2	1.1	6.2
Toluene	1	1.9	1.2	nd
Tetrachloroethene	1	nd	nd	nd
Ethylbenzene	1	nd	nd	nd
m,p-Xylene	1	nd	nd	nd
o-Xylene	1	nd	nd	nd
Dichloromethane	1	nd	nd	nd
1,1 Dichloroethane	1	nd	15.4	2.0
1,2 Dichloroethane	1	nd	nd	1.1
Chloroform	1	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd
1,1,1 Trichloroethane	1	nd	6.9	nd
1,1,2 Trichloroethane	1	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd
Spike Recovery (%)		95	106	80

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Soil by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline mg/kg	Diesel mg/kg
Meth. Blank	10/19/95	95	nd	nd
UST-012 4-6'	10/19/95	int	39	nd
UST-012 6-8'	10/19/95	96	nd	nd
UST-012 11-13'	10/19/95	96	nd	nd
UST-011 4-6'	10/19/95	int	121	nd
UST-011 6-8'	10/19/95	int	28	nd
UST-011 9-11'	10/19/95	int	201	nd
UST-013 4-6'	10/19/95	91	nd	nd
UST-013 6-8'	10/19/95	97	nd	nd
UST-013 11-13'	10/19/95	83	nd	nd
UST-014 4-6'	10/19/95	102	nd	nd
MDL			10	20

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Water by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline ug/l	Diesel ug/l
Meth. Blank	10/19/95	95	nd	nd
UST-012 8'	10/19/95	int	10897	nd
UST-012 16'	10/19/95	94	639	nd
UST-012 16'-Dup	10/19/95	98	625	nd
UST-011 8'	10/19/95	98	nd	nd
UST-011 16'	10/19/95	80	297	nd
UST-011 16'-Dup	10/19/95	103	325	nd
UST-013 11'	10/19/95	105	nd	nd
UST-013 17'	10/19/95	109	201	nd
MDL			200	500

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	Method Blank	UST-012 4-6'	UST-012 6-8'	UST-012 11-13'	UST-011 4-6'	UST-011 6-8'
Date	mg/kg	10/19/95 mg/kg	10/19/95 mg/kg	10/19/95 mg/kg	10/19/95 mg/kg	10/19/95 mg/kg	10/19/95 mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	0.33	nd	nd	0.23	0.12
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	1.09	0.31	nd	0.70	0.09
Tetrachloroethene	0.05	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	0.86	1.64	0.38	0.69	0.13
m,p-Xylene	0.05	nd	0.81	0.23	0.10	0.77	0.06
o-Xylene	0.05	nd	0.78	0.29	0.20	0.21	0.13
Dichloromethane	0.05	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		90	113	110	81	118	118

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	UST-011 9-11'	UST-013 4-6'	UST-013 6-8'	UST-013 13-15'	UST-014 4-6'
Date		10/19/95	10/19/95	10/19/95	10/19/95	10/19/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd
Benzene	0.05	0.72	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd
Toluene	0.05	0.96	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd	nd
Ethylbenzene	0.05	0.65	nd	nd	nd	nd
m,p-Xylene	0.05	1.43	nd	nd	nd	nd
o-Xylene	0.05	0.90	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd
Spike Recovery (%)		int	84	83	80	117

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	Method Blank	UST-012 8'	UST-012 16'	UST-012 16'-Dup	UST-011 8'	UST-011 16'
Date	ug/l	10/19/95 ug/l	10/19/95 ug/l	10/19/95 ug/l	10/19/95 ug/l	10/19/95 ug/l	10/19/95 ug/l
Vinylchloride	1	nd	nd	nd	nd	nd	nd
1.1 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Trans-1.2 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Cis-1.2 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Benzene	1	nd	58.4	32.5	33.9	2.1	1.0
Trichloroethene	1	nd	nd	nd	nd	nd	nd
Toluene	1	nd	8.3	2.8	3.1	2.3	1.2
Tetrachloroethene	1	nd	nd	nd	nd	nd	nd
Ethylbenzene	1	nd	986	39.7	35.4	25.7	27.5
m,p-Xylene	1	nd	320	21.1	6.0	7.8	4.2
o-Xylene	1	nd	285	2.9	2.1	1.1	1.8
Dichloromethane	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd	nd	nd	nd
1.2 Dichloroethane	1	nd	nd	nd	nd	nd	nd
Chloroform	1	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		83	90	83	85	118	91

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	UST-011 16'-Dup	UST-013 8'	UST-013 17'
Date		10/19/95	10/19/95	10/19/95
	ug/l	ug/l	ug/l	ug/l
Vinylchloride	1	nd	nd	nd
1,1 Dichloroethene	1	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	1.0	1.0
Cis-1,2 Dichloroethene	1	nd	23.2	26.4
Benzene	1	1.0	2.8	8.0
Trichloroethene	1	nd	9.4	4.5
Toluene	1	1.1	1.4	1.5
Tetrachloroethene	1	nd	nd	nd
Ethylbenzene	1	15.0	13.8	nd
m,p-Xylene	1	2.2	32.0	59.8
o-Xylene	1	1.5	11.8	5.2
Dichloromethane	1	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd
1,2 Dichloroethane	1	nd	nd	nd
Chloroform	1	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd
Spike Recovery (%)		89	111	112

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Soil by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline mg/kg	Diesel mg/kg
Meth. Blank	10/20/95	89	nd	nd
UST-014 6-8'	10/20/95	101	nd	nd
UST-014 11-13'	10/20/95	100	nd	nd
UST-018 4-6'	10/20/95	105	nd	nd
UST-018 6-8'	10/20/95	100	nd	nd
UST-021 4-6'	10/20/95	104	nd	nd
UST-021 6-8'	10/20/95	114	nd	nd
UST-09 4-6'	10/20/95	107	nd	nd
UST-09 6-8'	10/20/95	110	nd	nd
UST-09 11-13'	10/20/95	103	nd	nd
MDL			10	20

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Water by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline ug/l	Diesel ug/l
Meth. Blank	10/20/95	89	nd	nd
UST-014 8'	10/20/95	101	1460	nd
UST-014 16'	10/20/95	91	nd	nd
UST-014 16'-Dup	10/20/95	101	nd	nd
UST-018 8'	10/20/95	97	nd	nd
UST-018 8'-Dup	10/20/95	113	nd	nd
UST-018 16'	10/20/95	93	nd	nd
UST-021 11'	10/20/95	98	nd	nd
UST-021 16'	10/20/95	95	nd	nd
UST-009 8'	10/20/95	92	nd	nd
UST-009 16'	10/20/95	104	nd	nd
MDL			200	500

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	Method Blank	UST-014 6-8'	UST-014 11-13'	UST-018 4-6'	UST-018 6-8'	UST-021 4-6'
Date		10/20/95	10/20/95	10/20/95	10/20/95	10/20/95	10/20/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	0.05	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.05	nd	nd	nd	nd	nd	nd
o-Xylene	0.05	nd	nd	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		84	105	105	88	98	96

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	UST-021 6-8'	UST-009 4-6'	UST-009 6-8'	UST-009 11-13'
Date		10/20/95	10/20/95	10/20/95	10/20/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd
m,p-Xylene	0.05	nd	nd	nd	nd
o-Xylene	0.05	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd
Spike Recovery (%)		106	112	80	80

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	Method Blank	UST-014 8'	UST-014 16'	UST-014 16'-Dup	UST-018 8'	UST-018 8'-Dup
Date	ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l
Vinylchloride	1	nd	nd	nd	nd	nd	nd
1.1 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	1	nd	1.9	nd	nd	18.3	18.8
Benzene	1	nd	2.8	1.3	1.8	2.2	1.5
Trichloroethene	1	nd	nd	1.7	1.1	nd	nd
Toluene	1	nd	11.9	1.4	1.3	2.0	1.4
Tetrachloroethene	1	nd	nd	nd	nd	nd	nd
Ethylbenzene	1	nd	nd	nd	nd	nd	nd
m,p-Xylene	1	nd	78.3	nd	nd	nd	nd
o-Xylene	1	nd	nd	nd	nd	nd	nd
Dichloromethane	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	1	nd	nd	2.6	3.0	nd	nd
Chloroform	1	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1.1,1,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		84	113	84	89	110	110

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	UST-018 16'	UST-021 11'	UST-021 16'	UST-009 8'	UST-009 16'
Date	ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l
Vinylchloride	1	nd	nd	nd	nd	nd
1,1 Dichloroethene	1	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	1	3.4	39.8	nd	nd	nd
Benzene	1	1.2	2.2	nd	nd	nd
Trichloroethene	1	nd	nd	nd	nd	1.6
Toluene	1	1.6	2.8	nd	nd	nd
Tetrachloroethene	1	nd	nd	nd	nd	nd
Ethylbenzene	1	nd	nd	nd	nd	nd
m,p-Xylene	1	nd	nd	nd	nd	nd
o-Xylene	1	nd	nd	nd	nd	nd
Dichloromethane	1	1.3	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	1.7	nd	nd	nd
1,2 Dichloroethane	1	nd	nd	nd	nd	nd
Chloroform	1	nd	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd	nd	nd
Spike Recovery (%)		106	107	80	83	97

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST INC.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Soil by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline mg/kg	Diesel mg/kg
Meth. Blank	10/17/95	104	nd	nd
UST-010 4-6'	10/17/95	88	nd	nd
UST-010 4-6'-Dup	10/17/95	99	nd	nd
UST-010-6-8'	10/17/95	95	nd	nd
UST-010 11-13'	10/17/95	93	nd	nd
UST-020 4-6'	10/17/95	82	nd	nd
UST-020 6-8'	10/17/95	91	nd	nd
UST-020 11-13'	10/17/95	87	nd	nd
UST-019 4-6'	10/17/95	113	273	59
UST-019 6-8'	10/17/95	int	221	20
MDL			10	20

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Water by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline ug/l	Diesel ug/l
Meth. Blank	10/17/95	104	nd	nd
UST-010 8'	10/17/95	99	nd	nd
UST-010 16'	10/17/95	112	nd	2060
UST-020 8'	10/17/95	98	nd	nd
UST-020 8'-Dup	10/17/95	80	nd	nd
UST-020 16'	10/17/95	101	nd	nd
MDL			200	500

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	Method Blank	UST-010 4-6'	UST-010 4-6'-Dup	UST-010 6-8'	UST-010 11-13'	UST-020 4-6'
Date	mg/kg	10/17/95 mg/kg	10/17/95 mg/kg	10/17/95 mg/kg	10/17/95 mg/kg	10/17/95 mg/kg	10/17/95 mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.05	nd	nd	nd	nd	nd	nd
o-Xylene	0.05	nd	nd	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		111	100	97	99	99	96

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	UST-020 6-8'	UST-020 11-13'	UST-019 4-6'	UST-019 6-8'
Date		10/17/95	10/17/95	10/17/95	10/17/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd
Benzene	0.05	nd	nd	1.92	8.76
Trichloroethene	0.05	nd	nd	nd	nd
Toluene	0.05	nd	nd	1.44	30.2
Tetrachloroethene	0.05	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	2.16	9.60
m,p-Xylene	0.05	nd	nd	16.8	37.6
o-Xylene	0.05	nd	nd	4.80	8.84
Dichloromethane	0.05	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd
Spike Recovery (%)		99	89	99	88

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	Method Blank	UST-010 8'	UST-010 16'	UST-020 8'	UST-020 8'-Dup	UST-020 16'
Date	ug/l	10/17/95 ug/l	10/17/95 ug/l	10/17/95 ug/l	10/17/95 ug/l	10/17/95 ug/l	10/17/95 ug/l
Vinylchloride	1	nd	nd	nd	2.0	2.5	3.6
1.1 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	1	nd	nd	nd	3.1	4.7	51.4
Benzene	1	nd	nd	nd	nd	nd	nd
Trichloroethene	1	nd	nd	nd	3.9	5.6	10.6
Toluene	1	nd	nd	nd	nd	nd	nd
Tetrachloroethene	1	nd	nd	nd	4.4	9.4	29.3
Ethylbenzene	1	nd	nd	nd	nd	nd	nd
m,p-Xylene	1	nd	nd	nd	nd	nd	nd
o-Xylene	1	nd	nd	nd	nd	nd	nd
Dichloromethane	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd	nd	nd	1.0
1,2 Dichloroethane	1	nd	nd	nd	nd	nd	nd
Chloroform	1	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1.1,2 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		111	99	89	113	119	120

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Soil by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline mg/kg	Diesel mg/kg
Meth. Blank	10/18/95	90	nd	nd
UST-019 11-13'	10/18/95	99	nd	nd
UST-015 4-6'	10/18/95	83	nd	nd
UST-015 6-8'	10/18/95	85	nd	nd
UST-015 11-13'	10/18/95	100	nd	nd
UST-016 4-6'	10/18/95	82	nd	nd
UST-016 6-8'	10/18/95	86	nd	nd
UST-016 11-13'	10/18/95	91	nd	nd
UST-017 4-6'	10/18/95	89	nd	nd
UST-017 6-8'	10/18/95	90	nd	nd
UST-017 11-13'	10/18/95	92	nd	nd
MDL			10	20

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Water by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline ug/l	Diesel ug/l
Meth. Blank	10/18/95	90	nd	nd
UST-019 16'	10/18/95	120	nd	nd
UST-019 16'-Dup	10/18/95	97	nd	nd
UST-015 8'	10/18/95	99	457	nd
UST-016 8'	10/18/95	99	nd	nd
UST-016 8'-Dup	10/18/95	87	nd	nd
UST-016 16'	10/18/95	103	nd	nd
UST-017 8'	10/18/95	91	nd	nd
UST-017 16'	10/18/95	85	nd	nd
MDL			200	500

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	Method Blank	UST-019 11-13'	UST-015 4-6'	UST-015 6-8'	UST-015 11-13'	UST-016 4-6'
Date	mg/kg	10/18/95 mg/kg	10/18/95 mg/kg	10/18/95 mg/kg	10/18/95 mg/kg	10/18/95 mg/kg	10/18/95 mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	0.13	0.49	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	0.10	0.09	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.05	nd	nd	nd	nd	nd	nd
o-Xylene	0.05	nd	nd	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		100	119	83	104	90	116

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	UST-016 6-8'	UST-016 11-13'	UST-017 4-6'	UST-017 6-8'	UST-017 11-13'
Date		10/18/95	10/18/95	10/18/95	10/18/95	10/18/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd
m,p-Xylene	0.05	nd	nd	nd	nd	nd
o-Xylene	0.05	nd	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd
Spike Recovery (%)		86	97	97	109	95

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	Method Blank	UST-019 16'	UST-019 16'-Dup	UST-015 8'	UST-016 8'	UST-016 8'-Dup
Date		10/18/95	10/18/95	10/18/95	10/18/95	10/18/95	10/18/95
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Vinylchloride	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethene	1	nd	nd	nd	3.9	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd	18.1	nd	nd
Cis-1,2 Dichloroethene	1	nd	nd	nd	893	4.9	5.2
Benzene	1	nd	9.7	10.1	5.4	1.0	1.0
Trichloroethene	1	nd	nd	nd	35.4	nd	nd
Toluene	1	nd	19.6	19.5	23.3	2.4	2.7
Tetrachloroethene	1	nd	nd	nd	140	nd	nd
Ethylbenzene	1	nd	nd	nd	nd	nd	nd
m,p-Xylene	1	nd	31.5	29.8	80.2	nd	nd
o-Xylene	1	nd	5.0	5.7	21.3	nd	nd
Dichloromethane	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd	1.5	nd	nd
1,2 Dichloroethane	1	nd	nd	nd	nd	nd	nd
Chloroform	1	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		100	115	112	111	86	80

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	UST-016 16'	UST-017 8'	UST-017 16'
Date		10/18/95	10/18/95	10/18/95
	ug/l	ug/l	ug/l	ug/l
Vinylchloride	1	nd	nd	nd
1,1 Dichloroethene	1	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd
Cis-1,2 Dichloroethene	1	1.3	1.2	90.1
Benzene	1	1.2	9.4	31.7
Trichloroethene	1	1.2	1.1	6.2
Toluene	1	1.9	1.2	nd
Tetrachloroethene	1	nd	nd	nd
Ethylbenzene	1	nd	nd	nd
m,p-Xylene	1	nd	nd	nd
o-Xylene	1	nd	nd	nd
Dichloromethane	1	nd	nd	nd
1,1 Dichloroethane	1	nd	15.4	2.0
1,2 Dichloroethane	1	nd	nd	1.1
Chloroform	1	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd
1,1,1 Trichloroethane	1	nd	6.9	nd
1,1,2 Trichloroethane	1	nd	nd	nd
1.1.1,2-Tetrachloroethane	1	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd
Spike Recovery (%)		95	106	80

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Soil by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline mg/kg	Diesel mg/kg
Meth. Blank	10/19/95	95	nd	nd
UST-012 4-6'	10/19/95	int	39	nd
UST-012 6-8'	10/19/95	96	nd	nd
UST-012 11-13'	10/19/95	96	nd	nd
UST-011 4-6'	10/19/95	int	121	nd
UST-011 6-8'	10/19/95	int	28	nd
UST-011 9-11'	10/19/95	int	201	nd
UST-013 4-6'	10/19/95	91	nd	nd
UST-013 6-8'	10/19/95	97	nd	nd
UST-013 11-13'	10/19/95	83	nd	nd
UST-014 4-6'	10/19/95	102	nd	nd
MDL			10	20

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Water by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline ug/l	Diesel ug/l
Meth. Blank	10/19/95	95	nd	nd
UST-012 8'	10/19/95	int	10897	nd
UST-012 16'	10/19/95	94	639	nd
UST-012 16'-Dup	10/19/95	98	625	nd
UST-011 8'	10/19/95	98	nd	nd
UST-011 16'	10/19/95	80	297	nd
UST-011 16'-Dup	10/19/95	103	325	nd
UST-013 11'	10/19/95	105	nd	nd
UST-013 17'	10/19/95	109	201	nd
MDL			200	500

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	Method Blank	UST-012 4-6'	UST-012 6-8'	UST-012 11-13'	UST-011 4-6'	UST-011 6-8'
Date		10/19/95	10/19/95	10/19/95	10/19/95	10/19/95	10/19/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	0.33	nd	nd	0.23	0.12
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	1.09	0.31	nd	0.70	0.09
Tetrachloroethene	0.05	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	0.86	1.64	0.38	0.69	0.13
m,p-Xylene	0.05	nd	0.81	0.23	0.10	0.77	0.06
o-Xylene	0.05	nd	0.78	0.29	0.20	0.21	0.13
Dichloromethane	0.05	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1.2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		90	113	110	81	118	118

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	UST-011 9-11'	UST-013 4-6'	UST-013 6-8'	UST-013 13-15'	UST-014 4-6'
Date		10/19/95	10/19/95	10/19/95	10/19/95	10/19/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd
Benzene	0.05	0.72	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd
Toluene	0.05	0.96	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd	nd
Ethylbenzene	0.05	0.65	nd	nd	nd	nd
m,p-Xylene	0.05	1.43	nd	nd	nd	nd
o-Xylene	0.05	0.90	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd
Spike Recovery (%)		int	84	83	80	117

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	Method Blank	UST-012 8'	UST-012 16'	UST-012 16'-Dup	UST-011 8'	UST-011 16'
Date	ug/l	10/19/95 ug/l	10/19/95 ug/l	10/19/95 ug/l	10/19/95 ug/l	10/19/95 ug/l	10/19/95 ug/l
Vinylchloride	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Benzene	1	nd	58.4	32.5	33.9	2.1	1.0
Trichloroethene	1	nd	nd	nd	nd	nd	nd
Toluene	1	nd	8.3	2.8	3.1	2.3	1.2
Tetrachloroethene	1	nd	nd	nd	nd	nd	nd
Ethylbenzene	1	nd	986	39.7	35.4	25.7	27.5
m,p-Xylene	1	nd	320	21.1	6.0	7.8	4.2
o-Xylene	1	nd	285	2.9	2.1	1.1	1.8
Dichloromethane	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	1	nd	nd	nd	nd	nd	nd
Chloroform	1	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		83	90	83	85	118	91

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	UST-011 16'-Dup	UST-013 8'	UST-013 17'
Date		10/19/95	10/19/95	10/19/95
	ug/l	ug/l	ug/l	ug/l
Vinylchloride	1	nd	nd	nd
1,1 Dichloroethene	1	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	1.0	1.0
Cis-1,2 Dichloroethene	1	nd	23.2	26.4
Benzene	1	1.0	2.8	8.0
Trichloroethene	1	nd	9.4	4.5
Toluene	1	1.1	1.4	1.5
Tetrachloroethene	1	nd	nd	nd
Ethylbenzene	1	15.0	13.8	nd
m,p-Xylene	1	2.2	32.0	59.8
o-Xylene	1	1.5	11.8	5.2
Dichloromethane	1	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd
1,2 Dichloroethane	1	nd	nd	nd
Chloroform	1	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd
Spike Recovery (%)		89	111	112

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Soil by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline mg/kg	Diesel mg/kg
Meth. Blank	10/20/95	89	nd	nd
UST-014 6-8'	10/20/95	101	nd	nd
UST-014 11-13'	10/20/95	100	nd	nd
UST-018 4-6'	10/20/95	105	nd	nd
UST-018 6-8'	10/20/95	100	nd	nd
UST-021 4-6'	10/20/95	104	nd	nd
UST-021 6-8'	10/20/95	114	nd	nd
UST-09 4-6'	10/20/95	107	nd	nd
UST-09 6-8'	10/20/95	110	nd	nd
UST-09 11-13'	10/20/95	103	nd	nd
MDL			10	20

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Gasoline and Diesel in Water by Mod. EPA 8015

Sample Number	Date	Recovery %	Gasoline ug/l	Diesel ug/l
Meth. Blank	10/20/95	89	nd	nd
UST-014 8'	10/20/95	101	1460	nd
UST-014 16'	10/20/95	91	nd	nd
UST-014 16'-Dup	10/20/95	101	nd	nd
UST-018 8'	10/20/95	97	nd	nd
UST-018 8'-Dup	10/20/95	113	nd	nd
UST-018 16'	10/20/95	93	nd	nd
UST-021 11'	10/20/95	98	nd	nd
UST-021 16'	10/20/95	95	nd	nd
UST-009 8'	10/20/95	92	nd	nd
UST-009 16'	10/20/95	104	nd	nd
MDL			200	500

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	Method Blank	UST-014 6-8'	UST-014 11-13'	UST-018 4-6'	UST-018 6-8'	UST-021 4-6'
Date		10/20/95	10/20/95	10/20/95	10/20/95	10/20/95	10/20/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	0.05	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.05	nd	nd	nd	nd	nd	nd
o-Xylene	0.05	nd	nd	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		84	105	105	88	98	96

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	UST-021 6-8'	UST-009 4-6'	UST-009 6-8'	UST-009 11-13'
Date		10/20/95	10/20/95	10/20/95	10/20/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd
m,p-Xylene	0.05	nd	nd	nd	nd
o-Xylene	0.05	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd
Spike Recovery (%)		106	112	80	80

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	Method Blank	UST-014 8'	UST-014 16'	UST-014 16'-Dup	UST-018 8'	UST-018 8'-Dup
Date	ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l
Vinylchloride	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	1	nd	1.9	nd	nd	18.3	18.8
Benzene	1	nd	2.8	1.3	1.8	2.2	1.5
Trichloroethene	1	nd	nd	1.7	1.1	nd	nd
Toluene	1	nd	11.9	1.4	1.3	2.0	1.4
Tetrachloroethene	1	nd	nd	nd	nd	nd	nd
Ethylbenzene	1	nd	nd	nd	nd	nd	nd
m,p-Xylene	1	nd	78.3	nd	nd	nd	nd
o-Xylene	1	nd	nd	nd	nd	nd	nd
Dichloromethane	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	1	nd	nd	2.6	3.0	nd	nd
Chloroform	1	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		84	113	84	89	110	110

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

AIR NATIONAL GUARD BUILDING 1608 PROJECT
Salt Lake City, Utah
Operational Technologies, Inc.
Project#: 1315-185

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Water

Sample-Number	MDL	UST-018 16'	UST-021 11'	UST-021 16'	UST-009 8'	UST-009 16'
Date	ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l	10/20/95 ug/l
Vinylchloride	1	nd	nd	nd	nd	nd
1,1 Dichloroethene	1	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	1	3.4	39.8	nd	nd	nd
Benzene	1	1.2	2.2	nd	nd	nd
Trichloroethene	1	nd	nd	nd	nd	1.6
Toluene	1	1.6	2.8	nd	nd	nd
Tetrachloroethene	1	nd	nd	nd	nd	nd
Ethylbenzene	1	nd	nd	nd	nd	nd
m,p-Xylene	1	nd	nd	nd	nd	nd
o-Xylene	1	nd	nd	nd	nd	nd
Dichloromethane	1	1.3	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	1.7	nd	nd	nd
1,2 Dichloroethane	1	nd	nd	nd	nd	nd
Chloroform	1	nd	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd	nd	nd
Spike Recovery (%)		106	107	80	83	97

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

teg TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES

CHAIN-OF-CUSTODY RECORD

CLIENT: Sphera

ADDRESS: 4100 NW Loop 410, STE 230 San Antonio

PHONE (210) 731-0000 FAX: (210) 731-0008

CLIENT PROJECT #: 1315-185 PROJECT MANAGER: Russ Carson

DATE: 10/17 PAGE 1 OF

PROJECT NAME: VARG - Salt Lake City

LOCATION: SLC, Utah

COLLECTOR: DATE OF COLLECTION

Sample Number	Depth	Time	Sample Type	Container Type	VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH (8015 (diesel)	TPH 8015 (g & d)	PAH 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number of Containers	Laboratory Note Number
UST-010 6-P	4-6'	0930	S	Brass S/V	✓	✓					✓										1	
UST-010 6-P	6-8'	1015	S	"	✓	✓					✓										1	
UST-010 GPW	8'	1055	W	40 ml VOA	✓	✓					✓										3	
UST-010 6-P	11-13'	1146	S	Brass S/V	✓	✓					✓										1	
UST-010-GPW	16'	1210	W	40 ml VOA	✓	✓					✓										3	
UST-020-6P	4-6'	1330	S	Brass Sleeve	✗	✓					✓										1	
UST-020 6-P	6-8'	1340	S	"	✓	✓					✓										1	
UST-020-GPW	8'	1355	W	40ml VOA	✓	✓					✓										3	
UST-020 6-P	11-13'	1414	S	Brass S/V	✓	✓					✓										1	
UST-020 GPW	16'	1505	W	40 ml VOA	✓	✓					✓										3	
UST-019 6'	4-6'	1543	S	Brass S/V	✓	✓					✓										1	
UST-019 6P	6-8'	1554	S	Brass S/V	✓	✓					✓										1	
UST-019 6-P	11-13'	1625	S	Brass S/V	✓	✓					✓										1	
UST-019-GPW	16'	1640	W	40 ml VOA	✓	✓					✓										3	

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	10-17-15 1745	[signature]	10/17/15 1745
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

[redacted] DIS[redacted] @ $[redacted] [redacted] urn [redacted] ckup [redacted] OTES [redacted]

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	

LABORATORY NOTES:

teg [redacted] ENVIRONMENTAL GEOSCIENCES

CHAIN-OF-CUSTODY RECORD

CLIENT: Operational Technologies

ADDRESS: 4100 NW Loop 410, STE 230 San Antonio

PHONE 210 731-0000 FAX: 210-731-0008

CLIENT PROJECT #: 1315-185 PROJECT MANAGER: Ross Carson

DATE: 10/18/95 PAGE 1 OF 2.

PROJECT NAME: ANG Salt Lake City.

LOCATION: SLC, Utah.

COLLECTOR: DATE OF COLLECTION 10/18

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES: VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH (8015 (diesel)	TPH 8015 (g & d)	PAH 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number of Containers	Laboratory Note Number
UST-015GP	4-6'	800	S	Brass Sl.	V	V					V										1	
UST-015GP	6-8'	810	S	Brass Sl.	V	V					V										1	
UST-015GPW	8'	0825	W	40 ml VOA	V	V					V										1	
UST-015GP	11-13'	0900	S	Brass Sl.	V	V					V										3	
UST-016GP	4-6'	1030	S	Brass Sl.	V	V					V										1	
UST-016GP	6-8'	1044	S	Brass Sl.	V	V					V										1	
UST-016GPW	8'	1110	W	40ml VOA	X	X					X										1	
UST-016GP	11-13'	1230	S	Brass Sl	X	X					X										3	
UST-016GPW	16'	1252	W	40ml VOA	X	X					X										1	
UST-017GP	4-6'	1357	S	Brass Sl.	V	V					V										3	
UST-017GP	6-8'	1403	S	Brass Sl.	V	V					V										1	
UST-017GPW	8'	1410	W	40 ml VOA	V	V					V										1	
UST-017GP	11-13'	1453	S	Brass Sl.	V	V					V										3	
UST-017GPW	16'	1520	W	40ml VOA	V	V					V										1	
UST-012GP	4-6'	1605	S	Brass Sl.	V	V					V										3	
UST-012GP	6-8'	1621	S	Brass Sl	V	V					V										1	
UST-012GPW	8'	1652	W	40 ml VOA	V	V					V										1	
UST-012GP	11-13'	1716	S	Brass Sl	V	V					V										3	
																					1	

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
			10/18/95
RELINQUISHED BY (Signature)	10-18-95 1800 DATE/TIME	RECEIVED BY (Signature)	1755 DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

teg TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES

CHAIN-OF-CUSTODY RECORD

CLIENT: Operational Technologies

ADDRESS: 4110 NW Loop 410, Ste 230 San Antonio

PHONE 210-731-0000 FAX: 210-731-0088

CLIENT PROJECT #: 13115-185 PROJECT MANAGER: Russ Colson

DATE: 10/18/05 PAGE 2 OF 2

PROJECT NAME: VAMC Salt Lake City

LOCATION: SLC, Utah

COLLECTOR: DATE OF COLLECTION 10/18

Sample Number	Depth	Time	Sample Type	Container Type	VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH (8015 (diesel)	TPH 8015 (g & d)	PAH 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number of Containers	Laboratory Note Number
VBMW12 GP	61	1805	W	40mlVOA	X	X					X										3	

RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature) DATE/TIME

Russell Colson 10-18-05 1805 10/18/05 18:10

RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature) DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

[redacted]G DIS[redacted] @ $[redacted]ch [redacted]urn [redacted]ckup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES	

LABORATORY NOTES:

teg TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES

CHAIN-OF-CUSTODY RECORD

CLIENT: Optech

ADDRESS: 4100 NW Loop 410, STE 230 San Antonio

PHONE 210-731-0000 FAX: 210-731-0008

CLIENT PROJECT #: 1315-185 PROJECT MANAGER: Ross Citon

DATE: 10/19 PAGE 1 OF

PROJECT NAME: ANG Salt Lake city

LOCATION: Salt Lake City, Utah

COLLECTOR: DATE OF COLLECTION 10/18

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES: VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH (8015 (diesel)	TPH 8015 (g & d)	PAH 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number of Containers	Laboratory Note Number
UST-011G-P	4-6'	813	Soil	Brass Sl.	X	X					X										1	
UST-011G-P	6-8'	0850	Soil	Brass Sl.	X	X					X										1	
UST-011G-PW	8'	0924	water	40 ml VOA	X	X					X										3	
UST-011G-P	11-13'	0951	Soil	Brass Sl.	X	X					X										1	
UST-0116-PW	16'	1000	water	40 ml VOA	X	X					X										3	
UST-013G-P	4-6'	1131	Soil	Brass Sl.	X	X					X										1	
UST-013G-P	6-8'	1140	Soil	Brass Sl.	X	X					X										1	
UST-013G-PW	11'	1305	water	40 ml VOA	X	X					X										1	
UST-013G-P	13'-15'	1345	Soil	Brass Sl.	X	X					X										1	
UST-013G-PW	17'	1405	water	40 ml VOA	X	X					X										3	
UST-014G-P	4-6'	1448	Soil	~~40 ml VOA~~ Brass Sl.	X	X					X										1	
UST-014G-P	6-8'	1500	Soil	Brass Sl.	X	X					X										1	
UST-0116-PW	8'	1540	water	40 ml VOA	X	X					X										3	
UST-011G-P	11-13'	1555	Soil	Brass Sl.	X	X					X										1	
UST-0116-PW	16'	1615	water	40 ml VOA	X	X					X										3	

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
	10-11-95 1745		10/19/95 17:45
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

teg TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES

CHAIN-OF-CUSTODY RECORD

CLIENT: Questar

ADDRESS: 4100 N.W. Loop 410, STE 230 San Antonio, Tx

PHONE (210) 731-0000 FAX: (210) 731-0008

CLIENT PROJECT #: 1315-185 PROJECT MANAGER: Russ Carson

DATE: 10/20/95 PAGE 1 OF

PROJECT NAME: ARG - Salt lake city

LOCATION: Salt Lake City Utah

COLLECTOR: DATE OF COLLECTION

Sample Number	Depth	Time	Sample Type	Container Type	VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH (8015 (diesel)	TPH 8015 (g & d)	PAH 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number of Containers	Laboratory Note Number
UST 018 GP	4-6'	0858	Soil	Brass Sleeve	X	X					X										1	
UST 018 GP	6-8'	0903	Soil	Brass Sleeve	X	X					X										1	
UST 018 GPW	8'	0952	Water	40ml VOA	X	X					X										3	
UST 018 GPW	16'	1008	Water	40ml VOA	X	X					X										3	
UST021 GP	4-6'	1051	Soil	Brass Sleeve	X	X					X										1	
UST021 6-8'	6-8'	1100	Soil	Brass Sl.	X	X					X										1	
UST-021GPW	11'	1145	WATER	40ml VOA	X	X					X										3	
UST-009GP	4-6'	1400	Soil	BRASS SL	X	X					X										1	
UST-009GPW	8'	1445	WATER	40 ml VOA	X	X					X										3	
UST-009GP	11-13'	1500	Soil	Brass Sl.	X	X					X										1	
UST-009GPW	16'	1525	WATER	Rinsate 40ml VOA	X	X					X										3	
UST-009GP	6-8'	1630	Soil	4oz. Glass	X	X					X										1	

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
Russell Carson	10-20-95 1805		10/20/95 1805
RELINQUISHED BY (Signature)	DATE/TIME	R.C. RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

DISP[illegible] @ $2.[illegible] [illegible]rn [illegible]kup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

APPENDIX C

BORING LOGS

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST-01BH

Project No.:	1315-185	**Sampling Method:**	Split Spoon Sampler (CA Modified)
Logged By:	Kathleen Merino	**Depth Drilled:**	11.5 Ft.
Drilling Co.:	T.E.G.	**Depth To Water:**	Not Measured
Driller:	M. McMurry	**Date Measured:**	N/A
Date Drilled:	10/27/94	**Surface Elevation:**	4218.91 Ft.
Drilling Method:	Strataprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	BTEX (ppb)	*Solvent (ppb)
					Asphalt				
					Fill material.				
		90			Clay, some gravel from fill material, brown, dry.	10.9	40.7	-	-
5		100			Clay, gray, slightly moist.	98.3	33.3	140	156
10		100			- same as above.	424	525	117	37
					Boring Terminated at 11.5 ft.				
					* Solvent is the Total of DCE, TCE and PCE				
15					Notes: 1. PID and ATHA Values Measured with Thermo Environmental Model 580B (10.2 evlamp). 2. BTEX and Solvent Totals Determined by Field GC.				

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST-02BH

Project No.:	1315-185	**Sampling Method:**	Split Spoon Sampler (CA Modified)
Logged By:	Kathleen Merino	**Depth Drilled:**	12.0 Ft.
Drilling Co.:	T.E.G.	**Depth To Water:**	Not Measured
Driller:	M. McMurry	**Date Measured:**	N/A
Date Drilled:	10/28/94	**Surface Elevation:**	4219.17 Ft.
Drilling Method:	Strataprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	BTEX (ppb)	*Solvent (ppb)
					Asphalt				
		95			Fill material, soil, brown.	4.0	8.5	134	46
5		100			Clay, high plasticity, gray, slightly moist, strong hydrocarbon odor.	1330	1287	ND	ND
		45			Clay, high plasticity, gray, slightly moist, strong hydrocarbon odor.	1351	-	-	-
10		100			Clay, high plasticity, gray, slightly moist, strong hydrocarbon odor.	30.3	34.8	11,595	130
					Boring Terminated at 12.0 ft.				
					*Solvent is the Total of DCE, TCE and PCE				
					ND = Not Detected				
15					Notes: 1. PID and ATHA Values Measured with Thermo Environmental Model 580B (10.2 evlamp). 2. BTEX and Solvent Totals Determined By Field GC.				

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST-03BH

Project No.:	**1315-185**	**Sampling Method:**	**Split Spoon Sampler (CA Modified)**
Logged By:	**Kathleen Merino**	**Depth Drilled:**	**10.0 Ft.**
Drilling Co.:	**T.E.G.**	**Depth To Water:**	**Not Measured**
Driller:	**M. McMurry**	**Date Measured:**	**N/A**
Date Drilled:	**10/28/94**	**Surface Elevation:**	**4218.94 Ft.**
Drilling Method:	**Strataprobe**		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	BTEX (ppb)	*Solvent (ppb)
					Asphalt				
					Fill material.				
		100			Clay with silty sand, brown, dry.	0	0.1	ND	ND
5		100			Clay with silty sand, light brown, slightly moist.	0	2.0	ND	ND
		100			Clay with silty sand, light brown, slightly moist.	0	2.1	ND	ND
10					Boring Terminated at 10.0 ft.				

*Solvent is the Total of DCE, TCE and PCE
ND = Not Detected

Notes:
1. PID and ATHA Values Measured with Thermo Environmental Model 580B (10.2 evlamp).
2. BTEX and Solvent Totals Determined By Field GC.

15

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

O P T E C H

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST-04BH

Project No.:	1315-185	**Sampling Method:**	Split Spoon Sampler (CA Modified)
Logged By:	Kathleen Merino	**Depth Drilled:**	14.0 Ft.
Drilling Co.:	T.E.G.	**Depth To Water:**	Not Measured
Driller:	M. McMurry	**Date Measured:**	N/A
Date Drilled:	10/28/94	**Surface Elevation:**	4218.48 Ft.
Drilling Method:	Strataprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	BTEX (ppb)	*Solvent (ppb)
					Asphalt				
					Fill material.				
		100			Clay with silty sand, greenish-gray, slightly moist.	0	0	323	3
5		100			Clay with silty sand, greenish-gray, slightly moist.	0	0.1	-	-
10									
		90			Clay with silty sand, greenish-gray, wet.	0	0	41	11
15					Boring Terminated at 14.0 ft.				

*Solvent is the Total of DCE, TCE, and PCE

Notes:
1. PID and ATHA Values Measured with Thermo Environmental Model 580B (10.2 evlamp).
2. BTEX and Solvent Totals Determined By Field GC.

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST-05BH

Project No.:	1315-185	Sampling Method:	Split Spoon Sampler (CA Modified)
Logged By:	Kathleen Merino	Depth Drilled:	10.0 Ft.
Drilling Co.:	T.E.G.	Depth To Water:	Not Measured
Driller:	M. McMurry	Date Measured:	N/A
Date Drilled:	10/28/94	Surface Elevation:	4219.14 Ft.
Drilling Method:	Strataprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	BTEX (ppb)	*Solvent (ppb)
					Asphalt				
					Fill material.				
		100			Clay, some gravel, dark brown, slightly moist.	0	0.7	12	47
		100			Clay, gray, high plasticity, moist.	0	0.7	3	1
5		100			Clay, dark gray, high plasticity, moist.	0	5.1	ND	ND
		100			Clay, dark gray, high plasticity, wet.	0	0	15	195
10					Boring Terminated at 10.0 ft.				
					*Solvent is the Total of DCE, TCE and PCE				
					ND = Not Detected				
15									

Notes:
1. PID and ATHA Values Measured with Thermo Environmental Model 580B (10.2 evlamp).
2. BTEX and Solvent Totals Determined by Field GC.

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST-06BH

Project No.:	1315-185	Sampling Method:	Split Spoon Sampler (CA Modified)
Logged By:	Kathleen Merino	Depth Drilled:	10.0 Ft.
Drilling Co.:	T.E.G.	Depth To Water:	Not Measured
Driller:	M. McMurry	Date Measured:	N/A
Date Drilled:	10/28/94	Surface Elevation:	4219.17 Ft.
Drilling Method:	Strataprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	BTEX (ppb)	*Solvent (ppb)
					Asphalt				
		100			Fill, top soil and gravel, dry.	0	0.2	32	102
		100			Clay, dark brown, slightly moist.	0	0.5	25	8
5		100			Clay, greenish-gray, wet.	0.2	0.5	1,896	7
		100			Clay, greenish-gray, wet.	0	0.4	ND	ND
10					Boring Terminated at 10.0 ft.				
					*Solvent is the Total of DCE, TCE and PCE				
					ND = Not Detected				
15					Notes: 1. PID and ATHA Values Measured with Thermal Environmental Model 580B (10.2 evlamp). 2. BTEX and Solvent Totals Determined by Field GC.				

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST009GP

Project No.:	1315-185	Sampling Method:	Brass Sleeves
Logged By:	Kathleen Merino	Depth Drilled:	13.0 ft. BLS
Drilling Co.:	Operational Technologies Corp	Depth To Water:	5.5 ft. BLS
Driller:	Ray Castillo	Date Measured:	10/20/95
Date Drilled:	10/20/95	Surface Elevation:	4217.98 ft(MSL)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
5		100			Silty clay, trace to little very fine sand, moist; olive (5 YR 5/1)	0.0	3.5
		15			Same as above	0.0	*
10					Same as above	0.0	0.0
15					Boring Terminated at 13.0 ft. BLS * Not enough sample recovery for ATHA 6-8 sample advanced 1 ft. over from original borehole because of no recovery at 6-8 ft. at original location.		

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST010GP

Project No.:	1315-185	Sampling Method:	Brass Sleeves
Logged By:	Kathleen Merino	Depth Drilled:	16.0 ft. BLS
Drilling Co.:	Operational Technologies Corp.	Depth To Water:	5.5 ft. BLS
Driller:	Ray Castillo	Date Measured:	10/17/95
Date Drilled:	10/17/95	Surface Elevation:	4219.07 ft(MSL)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
		55			Silt, trace gravel, dry, very dark brown (10 YR 2/2)	0.0	*
5		100			Clay, trace silt, iron staining moist, yellowish brown (10 YR 5/1)	3	8.2
10		50			Clay, little silt, trace to little very fine sand, yellowish brown (10 YR 5/1)	0.0	4.8
15					Boring Terminated at 16 ft. BLS		

* Not enough sample recovery for ATHA.

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST011GP

Project No.:	1315-185	Sampling Method:	Brass Sleeves
Logged By:	Kathleen Merino	Depth Drilled:	16 ft. BLS
Drilling Co.:	Operational Technologies Corp.	Depth To Water:	5.5 ft. BLS
Driller:	Ray Castillo	Date Measured:	10/19/95
Date Drilled:	10/19/95	Surface Elevation:	4218.05 ft(MSL)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
		100			Silty clay, trace to little fine sand, subrounded, olive gray (5 YR 5/2)	99	8.2
5		10			Same as above.	*	*
		50			Silty clay, trace medium sand, wet, olive gray (5 YR 5/2)	0.0	73
10							
15					Boring Terminated at 16.0 ft. BLS		

* Not enough sample collected for PID or ATHA

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

O P T E C H

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST012GP

Project No.:	1315-185	**Sampling Method:**	Brass Sleeves
Logged By:	Kathleen Merino	**Depth Drilled:**	16.0 ft. BLS
Drilling Co.:	Operational Technologies Corp.	**Depth To Water:**	6.0 ft. BLS
Driller:	Ray Castillo	**Date Measured:**	10/18/95
Date Drilled:	10/18/95	**Surface Elevation:**	4217.81 ft(MSL)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
		100			Silty clay, trace to little sand, iron staining, moist, olive brown (2.5 YR 4/4)	45	0.0
5							
		100			Clay, trace silt, moist, greenish gray (10 YR 6/1)	152	186
10							
		45			Fine sand, subangular, wet, greenish gray (10 YR 6/1)	0.0	*
15							
					Boring Terminated at 16.0 ft. BLS		

* Not enough sample recovery for ATHA.

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST013GP

Project No.:	1315-185	Sampling Method:	Brass Sleeves
Logged By:	Kathleen Merino	Depth Drilled:	16.0 ft. BLS
Drilling Co.:	Operational Technologies Corp.	Depth To Water:	5.0 ft. BLS
Driller:	Ray Castillo	Date Measured:	10/19/95
Date Drilled:	10/19/95	Surface Elevation:	4127.27 ft(MSL)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
		100			Silty clay, trace fine sand, slightly moist, olive gray (5 YR 5/1)	0.0	3.8
5		100			Silty clay, trace coarse sand, subangular, wet, olive gray (5 YR 5/1)	0.0	0.0
10					No recovery		
		100			Silt, little clay, trace fine sand, wet, dark bluish gray (5 B 4/1)	0.0	0.0
15					Boring Terminated at 16.0 ft. BLS.		

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST014GP

Project No.:	1315-185	Sampling Method:	Brass Sleeves
Logged By:	Kathleen Merino	Depth Drilled:	16.0 ft. BLS
Drilling Co.:	Operational Technologies Corp.	Depth To Water:	5.0 ft. BLS
Driller:	Ray Castillo	Date Measured:	10/19/95
Date Drilled:	10/19/95	Surface Elevation:	NA (no access)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
		100			Clay, trace silt, iron staining, moist, olive gray (5 YR 5/1)	0.0	6.3
5							
		100			Silty clay, trace to little fine sand, moist, greenish gray (10 YR 6/1)	5.7	9.3
10							
		30			Silty clay, little to some fine sand, yellowish brown (10 YR 5/4)	0.0	*
15							
					Boring Terminated at 16.0 ft. BLS		

* Not enough sample recovery for ATHA.

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

O P T E C H

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST015GP

Project No.:	1315-185	Sampling Method:	Brass Sleeves
Logged By:	Kathleen Merino	Depth Drilled:	16.0 ft. BLS
Drilling Co.:	Operational Technologies Corp	Depth To Water:	6-7 ft. BLS
Driller:	Ray Castillo	Date Measured:	10/18/95
Date Drilled:	10/18/95	Surface Elevation:	4217.13 ft(MSL)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
		100			Clay, trace silt, iron staining, moist, light olive gray (5 YR 6/2)	0.0	0.0
5		60			Silty clay, little fine to medium sand, moist, light olive gray (5 YR 6/2)	0.0	0.0
10		100			Well sorted very coarse sand, trace pebble gravel, subangular, wet greenish gray (6/10 Y)	0.0	3.5
15					Boring Terminated at 16.0 ft. BLS		

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST016GP

Project No.:	1315-185	Sampling Method:	Brass Sleeves
Logged By:	Kathleen Merino	Depth Drilled:	16.0 ft. BLS
Drilling Co.:	Operational Technologies Corp	Depth To Water:	6.0 ft. BLS
Driller:	Ray Castillo	Date Measured:	10/18/95
Date Drilled:	10/18/95	Surface Elevation:	4216.78 ft(MSL)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
		100			Silty clay, trace fine sand, iron staining, moist, greenish gray (5/10 Y)	0.0	0.0
5		100			Silt, little to some fine to medium sand, wet, yellowish brown (10 YR 5/4)	0.0	0.0
10		40			Poorly sorted silt and medium to coarse sand, subangular, wet, dark gray (4/N).	0.0	*
15					Boring Terminated at 16.0 ft. BLS * Not enough sample recovery for ATHA		

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST017GP

Project No.:	1315-185	Sampling Method:	Brass Sleeves
Logged By:	Kathleen Merino	Depth Drilled:	16.0 ft. BLS
Drilling Co.:	Operational Technologies Corp.	Depth To Water:	6.0 ft. BLS
Driller:	Ray Castillo	Date Measured:	10/18/95
Date Drilled:	10/18/95	Surface Elevation:	4216.79 ft(MSL)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
		100			Silty clay, trace to little sand, moist, olive brown (2.5 YR 4/3)	0.0	0.0
5		100			Silt and well sorted fine sand, trace clay, wet, dark yellowish brown (10 YR 4/3)	0.0	0.0
10		60			Well sorted subangular medium to fine sand, trace silt, wet, dark greenish gray (10 YR 4/1)	0.0	
15					Boring Terminated at 16.0 ft. BLS Duplicate sample taken at 1445 labeled UST-1608-1-Dup at 8 ft. BLS.		

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST018GP

Project No.:	1315-185	Sampling Method:	Brass Sleeves
Logged By:	Kathleen Merino	Depth Drilled:	16.0 ft. BLS
Drilling Co.:	Operational Technologies Corp	Depth To Water:	5.0 ft. BLS
Driller:	Ray Castillo	Date Measured:	10/20/95
Date Drilled:	10/20/95	Surface Elevation:	4217.26 ft(MSL)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
		100			Clay, trace silt, trace fine to very fine sand, moist, olive (5 YR 5/4)	0.0	1.0
5		45			Sandy silt, trace clay very moist olive (5 YR 5/4)	0.0	0.5
10		0			No recovery		
		0			No recovery		
15					Boring Terminated at 16.0 ft. BLS		

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST019GP

Project No.:	1315-185	Sampling Method:	Brass Sleeves
Logged By:	Kathleen Merino	Depth Drilled:	16.0 ft. BLS
Drilling Co.:	Operational Technologies Corp	Depth To Water:	6.0 ft. BLS
Driller:	Ray Castillo	Date Measured:	10/17/95
Date Drilled:	10/17/95	Surface Elevation:	4218.98 ft(MSL)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
		100			Silty clay, trace of very fine sand, slightly moist, dark greenish gray (10 YR 4/1)	1.9	143
5		100			Same as above (wet).	502	492
10		100			Silty clay, little fine sand transitioning to medium sand, wet.	13.5	5.7
15					Boring Terminated at 16.0 ft. BLS.		

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST020GP

Project No.:	1315-185	Sampling Method:	Brass Sleeves
Logged By:	Kathleen Merino	Depth Drilled:	16.0 ft. BLS
Drilling Co.:	Operational Technologies Corp	Depth To Water:	6.0 ft. BLS
Driller:	Ray Castillo	Date Measured:	10/17/95
Date Drilled:	10/17/95	Surface Elevation:	4218.98 ft(MSL)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
		100			Silty clay, trace very fine sand, moist, yellowish brown (10 YR 5/1)	0.0	7.5
5		60			Silty clay, little very fine medium sand, moist, yellowish brown (10 YR 5/1)	0.0	4.5
10		100			Same as above (wet)	0.0	1.9
15					Boring Terminated at 16.0 ft. BLS		

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST021GP

Project No.:	1315-185	Sampling Method:	Brass Sleeves
Logged By:	Kathleen Merino	Depth Drilled:	16.0 ft. BLS
Drilling Co.:	Operational Technologies Corp	Depth To Water:	5.5 ft. BLS
Driller:	Ray Castillo	Date Measured:	10/20/95
Date Drilled:	10/20/95	Surface Elevation:	4217.04 ft(MSL)
Drilling Method:	Hydraulic Geoprobe		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
		100			Silty clay, little fine sand moist, olive (5 YR 5/1)	0.0	0.0
5		100			Same as above	0.3	0.0
10		0			No recovery		
15					Boring Terminated at 16.0 ft. BLS		

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST-07MW

Project No.:	1315-185	**Sampling Method:**	Split Spoon Sampler (CA Modified)
Logged By:	Kathleen Merino	**Depth Drilled:**	14.0 Ft.
Drilling Co.:	P.C. Exploration	**Depth To Water:**	6.01 Ft. BTOC
Driller:	D. Prill	**Date Measured:**	11/02/94
Date Drilled:	10/31/94	**Surface Elevation:**	4218.67 Ft.
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	BTEX (ppb)	*Solvent (ppb)
					Asphalt	0.0	0.0	-	-
	19 22 25	90			Fill, topsoil with gravel.				
	22 13 14	95			Clay, medium plastic, gray, slightly moist. - same as above.	55.7	60.7	-	-
	6 10 7	100			Clay, some gravel, brown, dry. Clay, some gravel, brown, dry, slightly wet.	48.7	53.9	-	-
5	7 6 6				Clay, greenish-gray, wet, strong hydrocarbon odor.				
	3 2 1	100			- same as above.	710	595	795,890	411,300
	2 3 3	100			Clay, some large gravel, dark brown, wet. Clay, with medium size sand and greenish-gray clay with black sand, wet, hydrocarbon odor.	54	61	-	-
	5 7				Clay, greenish-gray, wet.				
10	1 4 5	100			Clay, some medium size sand, brown, wet.	4.2	5.3	46	98
	5 3 6	100			Clay and sand, gray, wet.	1.0	2.4	ND	ND
	6 13				Clay, high plasticity, gray, wet.				
15					Boring Terminated at 14.0 ft.				

*Solvent is the Total of DCE, TCE and PCE
ND = Not Detected
- = Analysis Not Performed

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST-08MW

Project No.:	1315-185	**Sampling Method:**	Split Spoon Sampler (CA Modified)
Logged By:	Kathleen Merino	**Depth Drilled:**	15.0 Ft.
Drilling Co.:	P.C. Exploration	**Depth To Water:**	5.29 Ft. BTOC
Driller:	D. Prill	**Date Measured:**	11/02/94
Date Drilled:	11/01/94	**Surface Elevation:**	4218.62 Ft.
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	BTEX (ppb)	*Solvent (ppb)
					No Recovery.	-	-	-	-
5	17 10 7 12	40			Clay with sandy silt, greenish-gray, slightly moist to dry.	0	-	ND	ND
10	4 5 5 4	60			Clay with some medium sand, brown, wet.	0	-	ND	ND
					No Recovery.				
	3 5 7 4	100			Clay and sand, greenish-gray, wet.	0	-	ND	ND
15					Boring Terminated at 15.0 ft.				

*Solvent is the Total of DCE, TCE and PCE
ND = Not Detected
- = Analysis Not Performed

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST-09MW

Project No.:	1315-185	**Sampling Method:**	Split Spoon Sampler (CA Modified)
Logged By:	Kathleen Merino	**Depth Drilled:**	15.0 Ft.
Drilling Co.:	P.C. Exploration	**Depth To Water:**	6.18 Ft. BTOC
Driller:	D. Prill	**Date Measured:**	11/02/94
Date Drilled:	10/31/94	**Surface Elevation:**	4218.47 Ft.
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	BTEX (ppb)	*Solvent (ppb)
					No Recovery.	-	-	-	-
5	15 7 6 11	0	X			-	-	-	-
	2 1 2 2	100	X		Clay, with some sand, greenish-gray, wet, hydrocarbon odor.	0	-	89	ND
10									
	2 2 3 6	100	X		- same as above.	0	-	ND	ND
15					Boring Terminated at 15.0 ft.				

*Solvent is the Total of DCE, TCE and PCE
ND = Not Detected
- = Analysis Not Performed

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST010MW

Project No.:	1315-185	**Sampling Method:**	Split-Spoon Sampler
Logged By:	Kathleen Merino	**Depth Drilled:**	15.0 ft. BLS
Drilling Co.:	PC Exploration	**Depth To Water:**	NOT MEASURED
Driller:	S. Mott	**Date Measured:**	NA
Date Drilled:	10/23/95	**Surface Elevation:**	4219.07 ft(MSL)
Drilling Method:	Hollow Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
	3 3 5	70			Silt, organic, dry, very dark brown (10 YR 2/2)	1.2	1.0
5	4 10 18	70			Same as above	0.0	2.4
10	1 0 1	100			Clay, trace to little silt, iron staining, olive (5 YR 5/3)	0.0	3.4
	1 1 1	100			Silty sand, little clay, iron staining, olive (5 YR 5/3)	0.0	1.7
15					Boring Terminated at 15 ft. BLS		

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST011MW

Project No.:	1315-185	Sampling Method:	Split-Spoon Sampler
Logged By:	Kathleen Merino	Depth Drilled:	15.0 ft. BLS
Drilling Co.:	PC Exploration	Depth To Water:	5.5 ft. BLS
Driller:	S. Mott	Date Measured:	10/23/95
Date Drilled:	10/23/95	Surface Elevation:	4216.81 ft(MSL)
Drilling Method:	Hollow Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
	1 1 1	100			Silty clay, little sand, iron staining, moist, olive (5 YR 5/3)	0.0	0.8
5	0 0 1	100			Same as above	0.0	0.0
10	1 2 4	50			Silt with clay, fine to coarse sand, wet, olive (5 YR 5/3)	0.0	1.0
	0 0 1	100			Clay, little sand, trace silt	0.0	5.2
15					Boring Terminated at 15 ft. BLS		

UTAH ANG BASE

BUILDING 1608, SALT LAKE CITY, UTAH

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING UST012MW

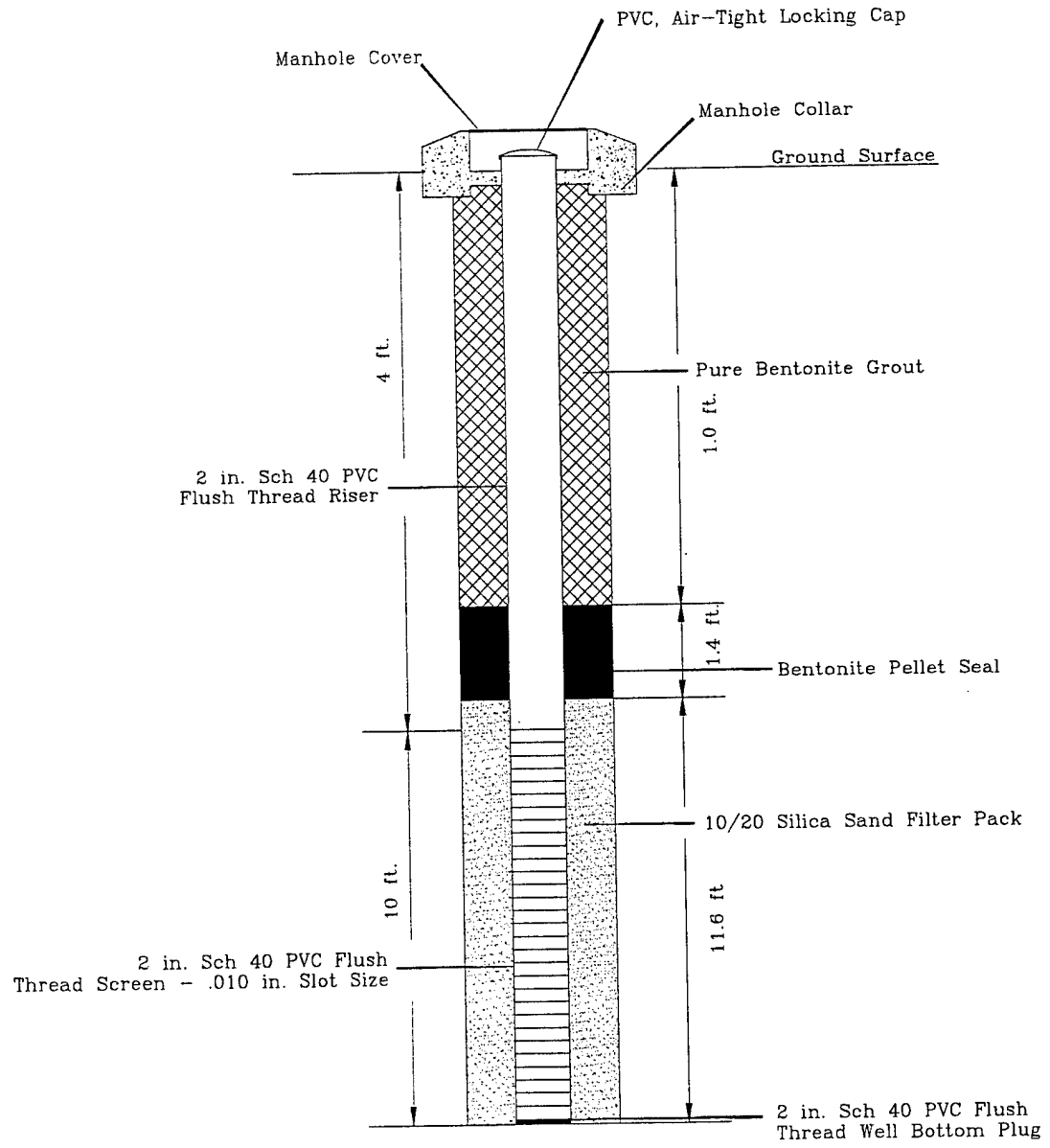
Project No.:	1315-185	Sampling Method:	Split-Spoon Sampler
Logged By:	Kathleen Merino	Depth Drilled:	15.0 ft. BLS
Drilling Co.:	PC Exploration	Depth To Water:	10.0 ft. BLS
Driller:	S. Mott	Date Measured:	10/23/95
Date Drilled:	10/23/95	Surface Elevation:	4217.64 ft(MSL)
Drilling Method:	Hollow Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	FIELD SCREENING ATHA (ppm)
	1 1 1	80			Silty clay, trace gravel, dry olive (5 YR 5/3)	0.0	2.6
5	2 2 2	70			Silty clay with sand, moist, olive (5 YR 5/3)	0.0	2.7
10	1 1 3	80			Silty clay, trace fine to medium sand, olive (5 YR 5/3) wet	0.0	3.6
	0 1 3	50			Clay, little silt, wet, gray (5 in)	0.0	2.3
15					Boring Terminated at 15.0 ft. BLS		

APPENDIX D

WELL CONSTRUCTION RESULTS

Project:	FORMER UST, BUILDING 1608	Date Installed:	10/29/94
Town/City:	SALT LAKE CITY	Drilling Contractor:	P.C. EXPLORATION
County:	SALT LAKE State: UTAH	Drilling Method:	HOLLOW-STEM AUGER
TOC Elev:	4218.67 Ft.	Borehole Diameter:	8 INCH
Ground Elev.:	4218.99 Ft.	Development Technique:	BAILED
Water Level:	5.55 Ft. BELOW TOC		
Total Well Depth:	14.0 Ft.		Not To Scale

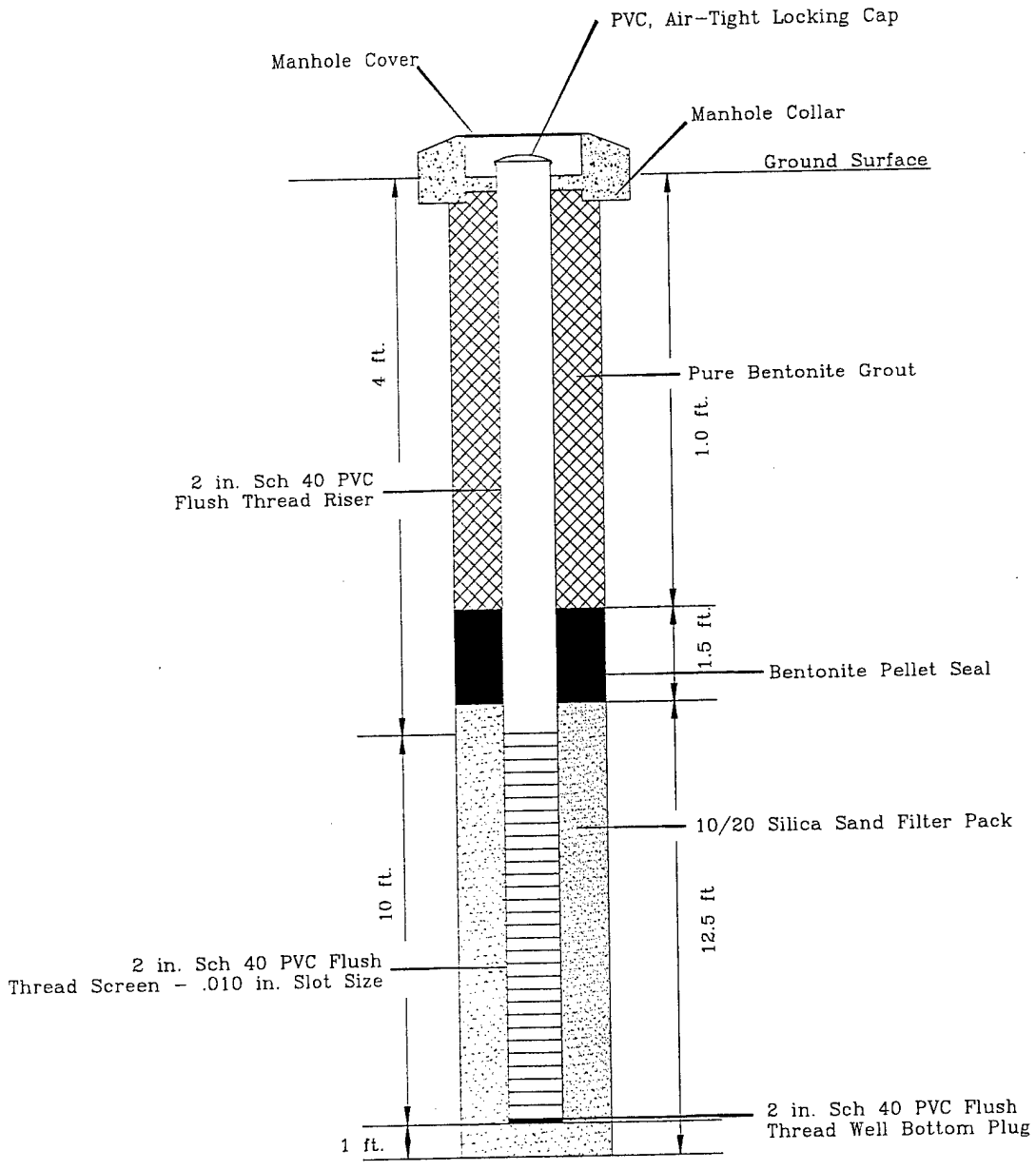


MONITORING WELL CONSTRUCTION LOG
WELL NO. UST-007MW

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

APRIL 1995 SALT\UST-07MW

Project:	FORMER UST, BUILDING 1608	Date Installed:	11/01/94
Town/City:	SALT LAKE CITY	Drilling Contractor:	P.C. EXPLORATION
County:	SALT LAKE State: UTAH	Drilling Method:	HOLLOW-STEM AUGER
TOC Elev:	4218.62 Ft.	Borehole Diameter:	8 INCH
Ground Elev.:	4219.12 Ft.	Development Technique:	BAILED
Water Level:	4.75 Ft. BELOW TOC		
Total Well Depth:	15.0 Ft.		Not To Scale

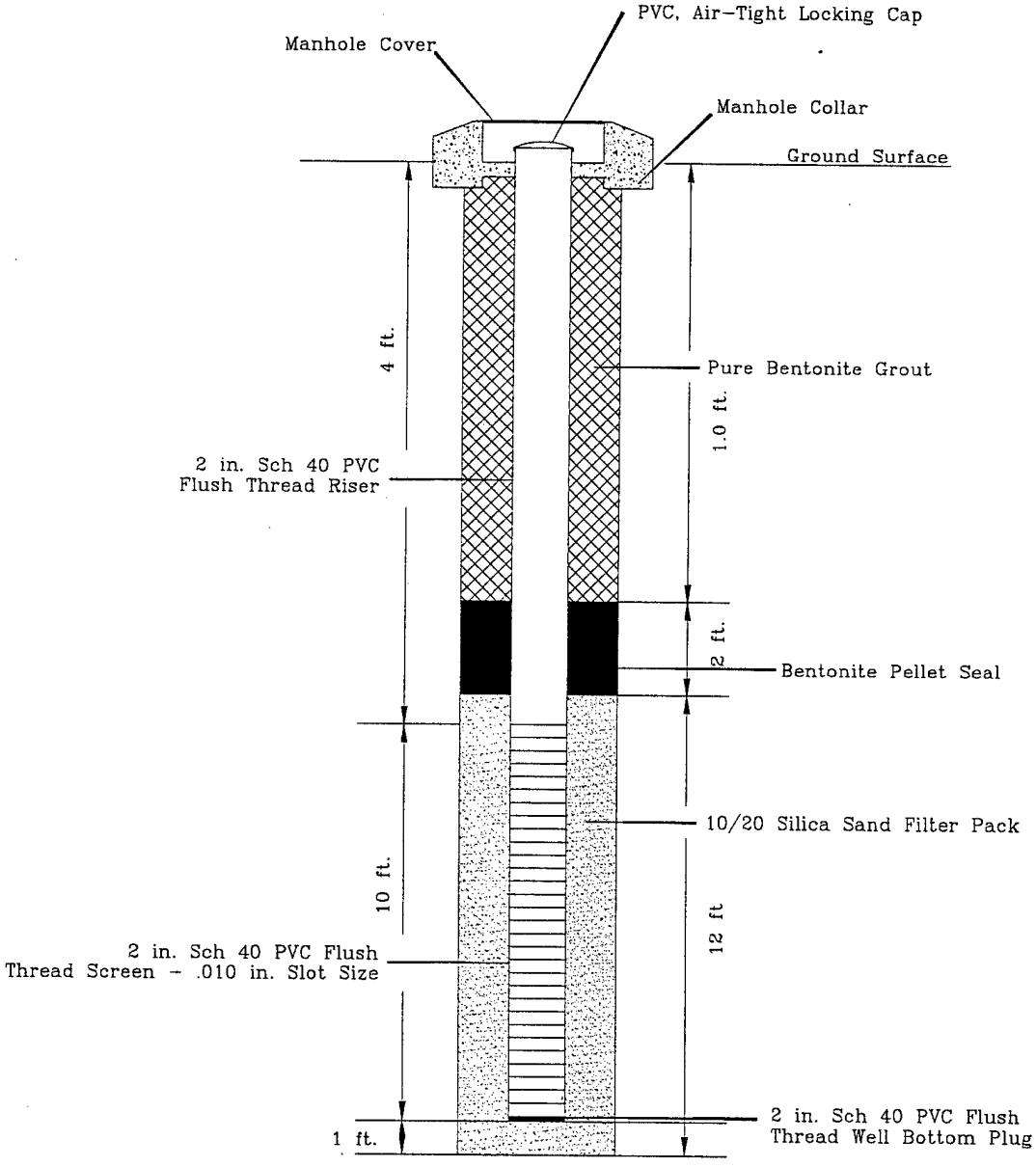


MONITORING WELL CONSTRUCTION LOG
WELL NO. UST-008MW

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

APRIL 1995 SALT\UST-08MW

Project:	FORMER UST, BUILDING 1608	Date Installed:	10/29/94
Town/City:	SALT LAKE CITY	Drilling Contractor:	P.C. EXPLORATION
County:	SALT LAKE State: UTAH	Drilling Method:	HOLLOW-STEM AUGER
TOC Elev:	4218.47 Ft.	Borehole Diameter:	8 INCH
Ground Elev.:	4218.99 Ft.	Development Technique:	BAILED
Water Level:	4.82 Ft. BELOW TOC		
Total Well Depth:	15.0 Ft.		Not To Scale

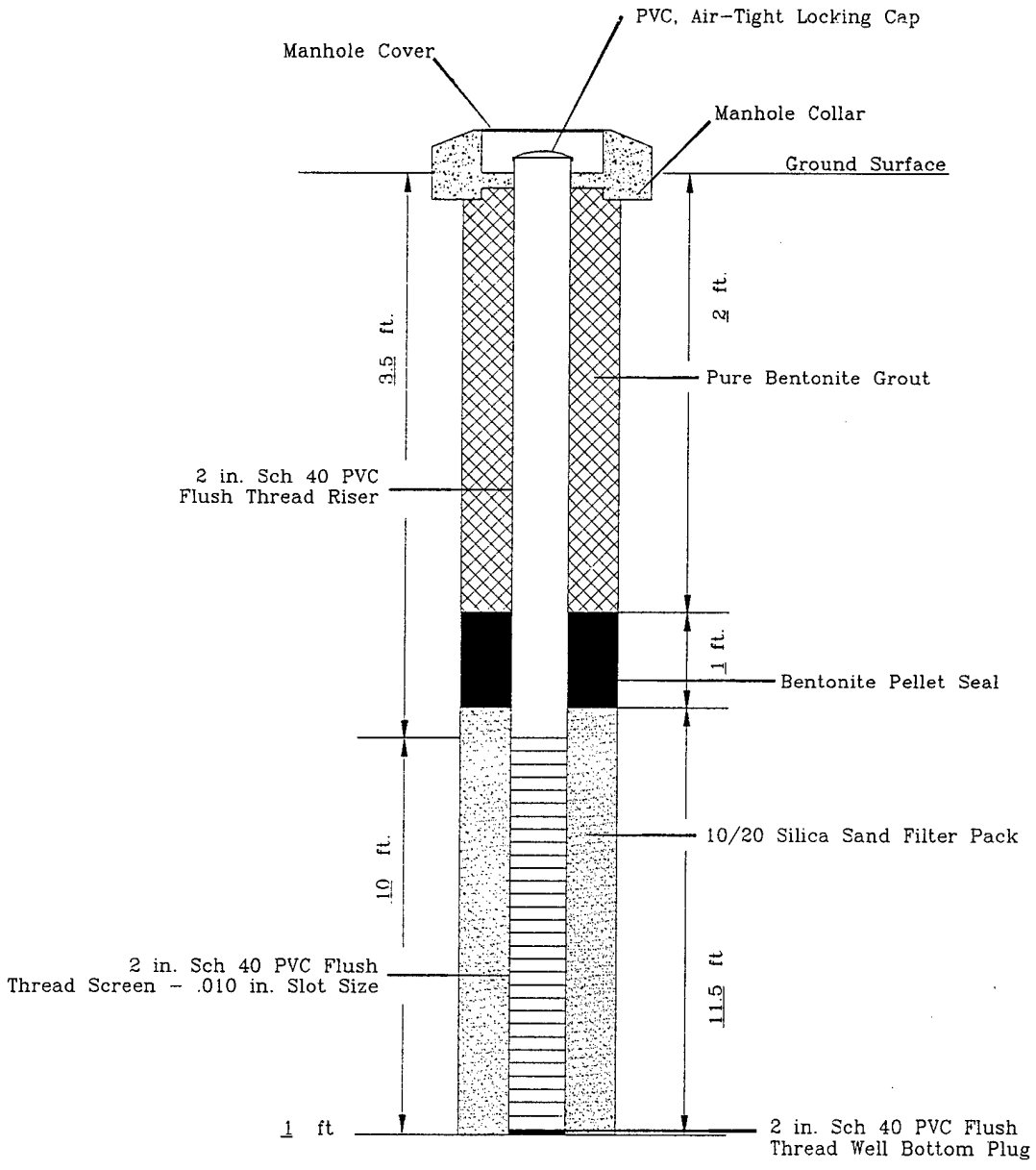


MONITORING WELL CONSTRUCTION LOG
WELL NO. UST-009MW

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

APRIL 1995 SALT\UST-09MW

Project:	Utah ANGB SSI/CAP 1315-185	Date Installed:	October 23, 1995
Town/City:	Salt Lake City	Drilling Contractor:	P.C. Exploration
County:	Salt Lake State: Utah	Drilling Method:	Hollow-Stem Auger
TOC Elev:	4218.84'	Borehole Diameter:	8"
Ground Elev.:	4219.07'	Development Technique:	Surge and Bail
Water Level:	5.91' TOC		
Total Well Depth:	14.5'		Not To Scale



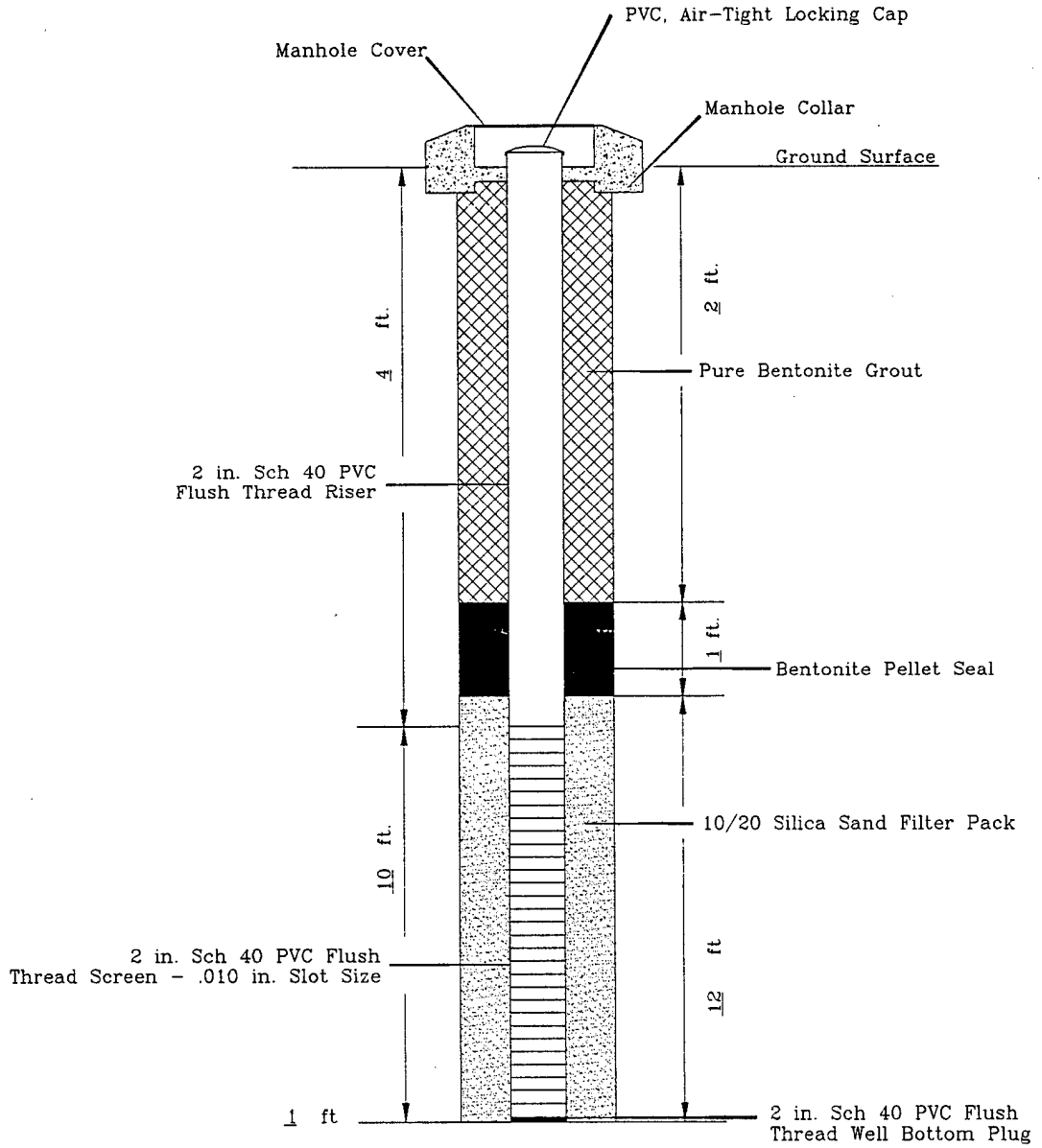
MONITORING WELL OR PIEZOMETER OR CONSTRUCTION LOG

Well No. UST-010MW

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

SALT\UST010MW DECEMBER 1995

Project:	Utah ANGB SSI/CAP 1315-185	Date Installed:	October 23, 1995
Town/City:	Salt Lake City	Drilling Contractor:	P.C. Exploration
County:	Salt Lake State: Utah	Drilling Method:	Hollow-Stem Auger
TOC Elev:	4216.54'	Borehole Diameter:	8"
Ground Elev.:	4216.81'	Development Technique:	Surge and Bail
Water Level:	5.04' TOC		
Total Well Depth:	15'		Not To Scale



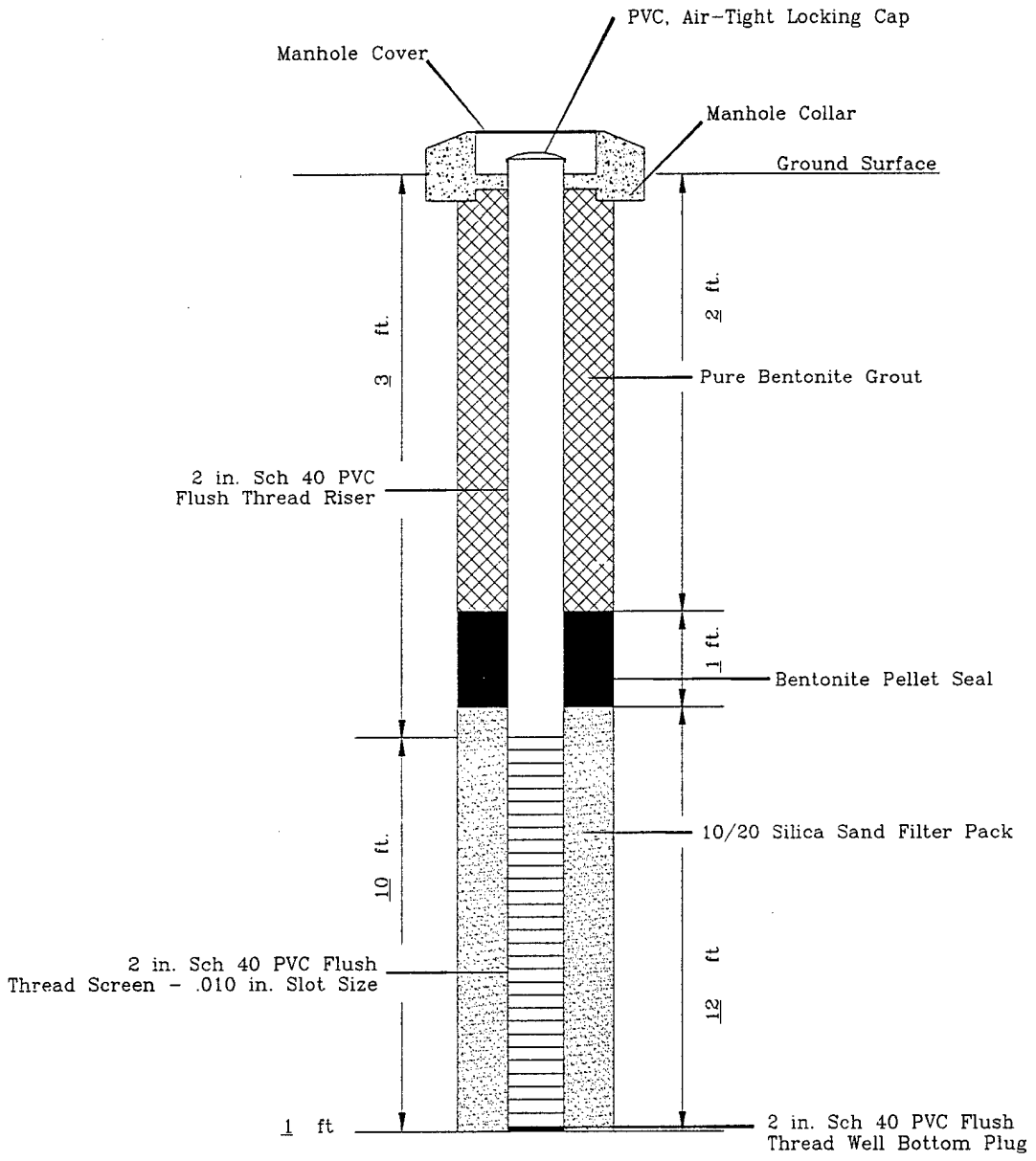
MONITORING WELL OR PIEZOMETER OR CONSTRUCTION LOG

Well No. UST-011MW

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

SALT\UST011MW DECEMBER 1995

Project:	Utah ANGB SSI/CAP 1315-185	Date Installed:	October 23, 1995
Town/City:	Salt Lake City	Drilling Contractor:	P.C. Exploration
County:	Salt Lake State: Utah	Drilling Method:	Hollow-Stem Auger
TOC Elev:	4217.37'	Borehole Diameter:	8"
Ground Elev.:	4217.64'	Development Technique:	Surge and Bail
Water Level:	5.45' TOC		
Total Well Depth:	15' (14' Screen)		Not To Scale



MONITORING WELL OR PIEZOMETER OR CONSTRUCTION LOG

Well No. UST-012MW

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

SALT\UST012MW DECEMBER 1995

APPENDIX E

SLUG TEST DATA

E.1 SLUG TEST ANALYSIS

Raw data from the slug tests was downloaded in the office to a computer file and analyzed by the Bouwer and Rice Method (Bouwer and Rice, 1976) for unconfined aquifers using the software program "AQTESOLV" Version 2.0 developed by Geraghty and Miller, Inc. The program implements automatic curve matching through nonlinear least-squares parameter estimation in addition to optional visual curve matching for the estimation of aquifer parameters.

The raw data for each slug test with the match curves generated by AQTESOLV are included herein.

SLUG TEST METHODOLOGY

REFERENCE: 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.

SOLUTION:

$$\ln So - \ln S_t = \frac{2KLt}{r_c^2 \ln(r_e/r_w)}$$

where:

S_o = initial drawdown in well due to instantaneous removal of water from well [L]

S_t = drawdown in well at time "t" [L]

L = length of saturated well screen interval [L]

r_c = radius of well casing [L]

r_w = radius of well (including filter pack) [L]

$\ln(r_e r_w)$ = empirical "shape factor" determined from reference tables (Bouwer and Rice, 1976)

r_e = equivalent radius over which hydraulic head loss occurs [L]

CRITICAL ASSUMPTIONS:

1) The water-bearing zone is representative of a homogenous, isotropic unconfined aquifer;

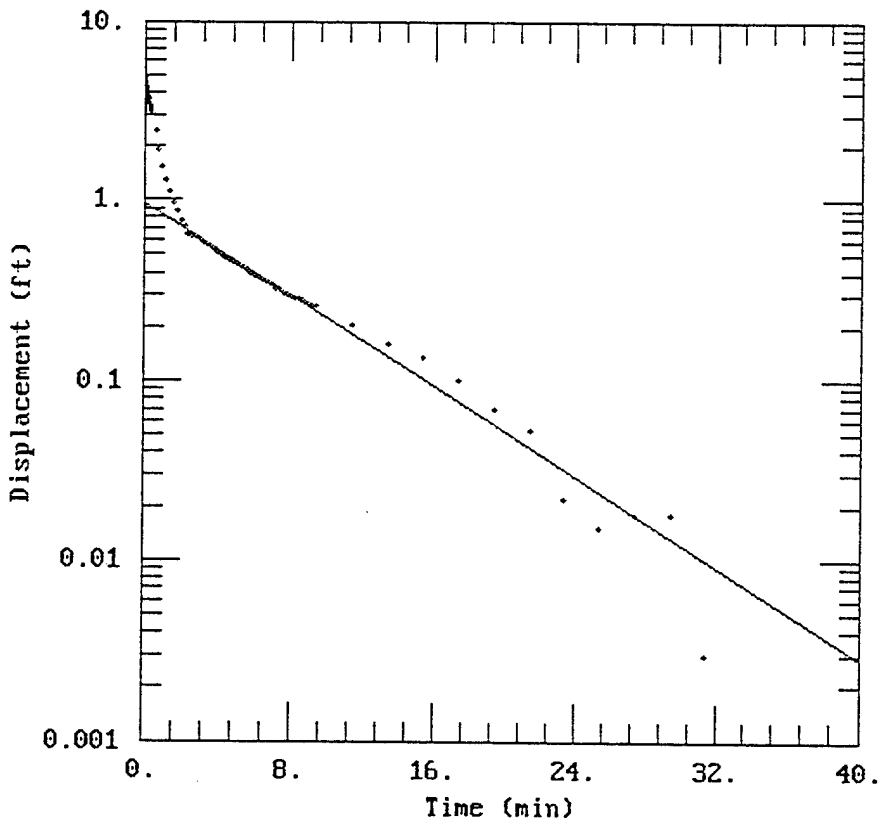
2) Drawdown of the water table around the well is negligible;

3) Groundwater flow above the water table (in the capillary fringe) is negligible; and,

4) Hydraulic head losses as water enters the well (well losses) are negligible.

CLIENT: UTAH AIR NATIONAL GUARD BASE	COMPANY: OPERATIONAL TECHNOLOGIES CORP
LOCATION: SALT LAKE CITY, UTAH	PROJECT: 1315-185

Slug Test UST007MW



DATA SET:
SLUG4.DAT
06/13/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 4.805 ft
r_c= 0.083 ft
r_w= 0.667 ft
L = 8.39 ft
b = 8.39 ft
H = 8.39 ft

PARAMETER ESTIMATES:
K = 0.002202 ft/min
y0 = 0.9614 ft

AQTESOLV

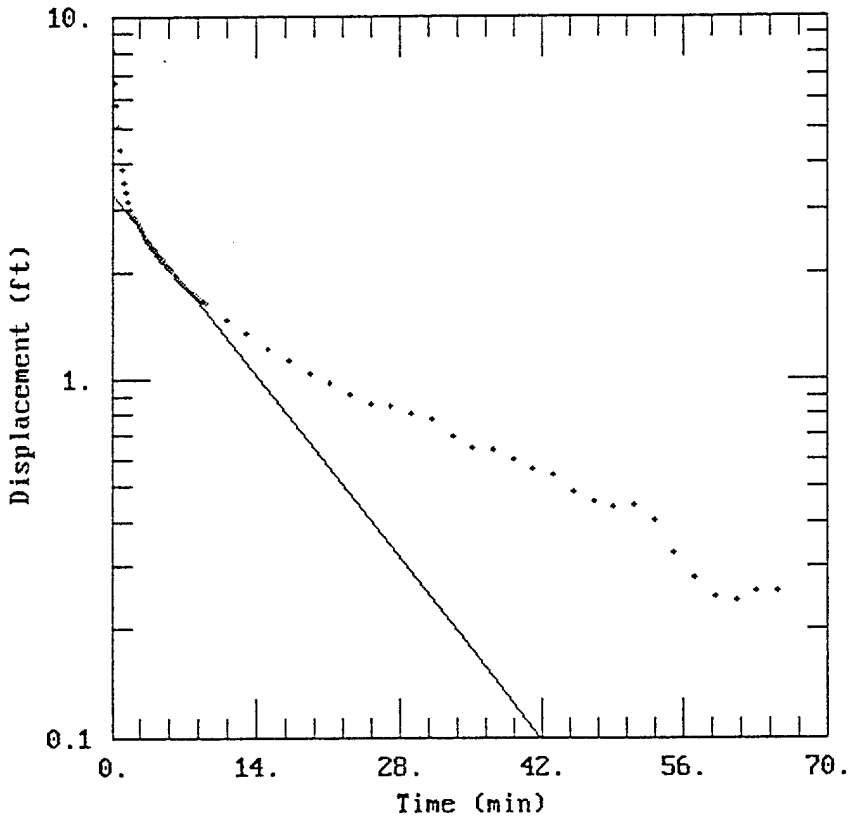
Slug Test UST007MW
compny
OPERATIONAL TECHNOLOGIES CORP
projno
1315-185
client
UTAH AIR NATIONAL GUARD BASE
locsit
SALT LAKE CITY, UTAH
tstdat
March 2, 1995
obswel
UST007MW
units
1
0
0
slugt5
4.805
0.167
0.667
8.39
8.39
8.39
0.3
0.1
83
0.0166 4.802 1
0.0333 4.802 1
0.05 4.716 1
0.0666 4.59 1
0.0833 4.473 1
0.1 4.362 1
0.1166 4.254 1
0.1333 4.153 1
0.15 4.055 1
0.1666 3.963 1
0.1833 3.897 1
0.2 3.83 1
0.2166 3.767 1
0.2333 3.704 1
0.25 3.647 1
0.2666 3.59 1
0.2833 3.53 1
0.3 3.473 1
0.3166 3.419 1
0.3333 3.368 1
0.35 3.312 1
0.3666 3.261 1
0.3833 3.21 1
0.4 3.163 1
0.4166 3.115 1
0.4333 3.068 1
0.45 3.02 1
0.65 2.416 1
0.85 1.925 1
1.05 1.542 1
1.25 1.276 1
1.45 1.102 1
1.65 0.969 1

1.85	0.861	1
2.05	0.772	1
.25	0.706	1
.45	0.652	1
2.65	0.633	1
.85	0.627	1
.05	0.611	1
3.25	0.592	1
3.45	0.57	1
.65	0.554	1
3.85	0.535	1
4.05	0.516	1
.25	0.503	1
.45	0.487	1
4.65	0.475	1
.85	0.462	1
.05	0.449	1
5.25	0.437	1
5.45	0.424	1
.65	0.411	1
5.85	0.399	1
6.05	0.389	1
.25	0.376	1
.45	0.367	1
6.65	0.357	1
.85	0.348	1
.05	0.338	1
7.25	0.329	1
7.45	0.323	1
.65	0.313	1
.85	0.304	1
8.05	0.297	1
.25	0.291	1
.45	0.288	1
8.65	0.281	1
8.85	0.272	1
9.05	0.269	1
9.25	0.262	1
9.45	0.259	1
11.45	0.205	1
13.45	0.158	1
15.45	0.133	1
17.45	0.101	1
19.45	0.069	1
21.45	0.053	1
23.45	0.022	1
25.45	0.015	1
27.45	0.018	1
29.45	0.018	1
31.45	0.003	1

<end>

CLIENT: UTAH AIR NATIONAL GUARD BASE	COMPANY: OPERATIONAL TECHNOLOGIES CORP
LOCATION: SALT LAKE CITY, UTAH	PROJECT: 1315-185

SLUG TEST UST008MW



DATA SET:
SLUG3.DAT
06/13/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 8.117 ft
r_c= 0.083 ft
r_w= 0.667 ft
L = 9.1 ft
b = 9.1 ft
H = 9.1 ft

PARAMETER ESTIMATES:
K = 0.001212 ft/min
y0 = 3.31 ft

AQTESOLV

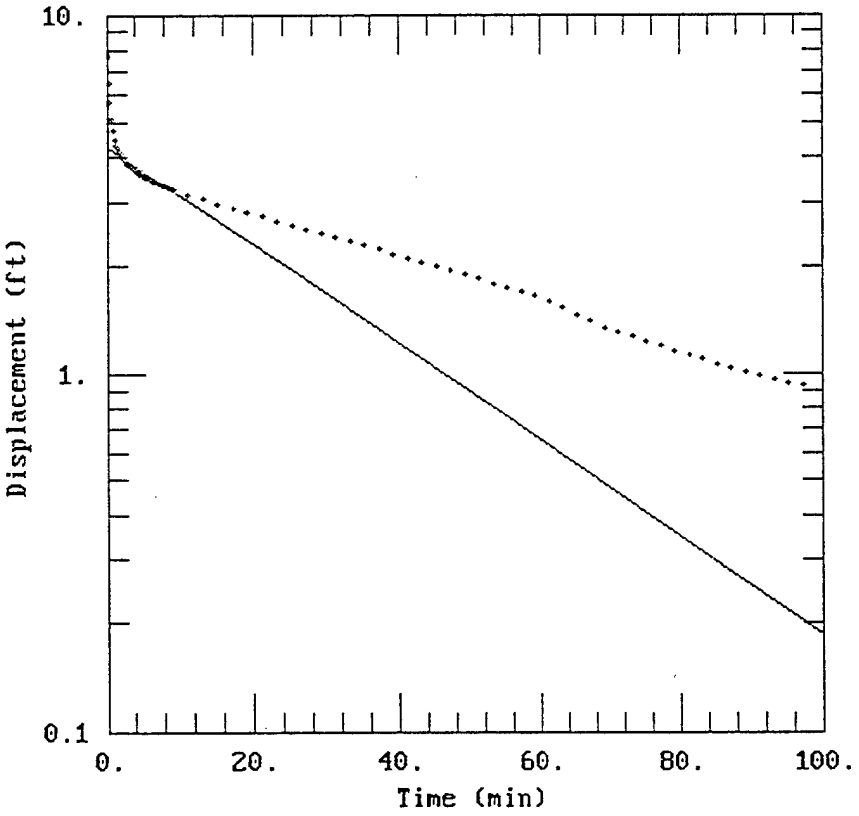
```
SLUG TEST  UST008MW
compny
OPERATIONAL TECHNOLOGIES CORP
projno
1315-185
client
UTAH AIR NATIONAL GUARD BASE
locsit
SALT LAKE CITY, UTAH
tstdat
March 2, 1995
obswel
UST008MW
units
1
0
)
slugt5
8.117
).167
).667
9.1
9.1
9.1
0.3
0.1
76
0.0166    8.117    1
0.0333    8.088    1
).05    7.984    1
).25    6.668    1
0.45    5.82    1
0.65    5.06    1
).85    4.379    1
1.05    3.879    1
1.25    3.562    1
1.45    3.334    1
1.65    3.138    1
1.85    2.989    1
2.05    2.891    1
2.25    2.805    1
2.45    2.726    1
2.65    2.659    1
2.85    2.596    1
3.05    2.539    1
3.25    2.485    1
3.45    2.434    1
3.65    2.387    1
3.85    2.346    1
4.05    2.301    1
4.25    2.263    1
4.45    2.225    1
4.65    2.184    1
4.85    2.146    1
5.05    2.111    1
5.25    2.076    1
5.45    2.044    1
5.65    2.016    1
5.85    1.984    1
6.05    1.956    1
```

6.25	1.927	1
6.45	1.899	1
6.65	1.876	1
6.85	1.848	1
7.05	1.826	1
7.25	1.8	1
7.45	1.778	1
7.65	1.759	1
7.85	1.74	1
8.05	1.721	1
8.25	1.699	1
8.45	1.68	1
8.65	1.661	1
8.85	1.645	1
9.05	1.626	1
11.05	1.471	1
13.05	1.341	1
15.05	1.223	1
17.05	1.135	1
19.05	1.036	1
21.05	0.97	1
23.05	0.91	1
25.05	0.856	1
27.05	0.84	1
29.05	0.799	1
31.05	0.773	1
33.05	0.691	1
35.05	0.643	1
37.05	0.631	1
39.05	0.596	1
41.05	0.561	1
43.05	0.539	1
45.05	0.482	1
47.05	0.453	1
49.05	0.437	1
51.05	0.443	1
53.05	0.402	1
55.05	0.329	1
57.05	0.279	1
59.05	0.247	1
61.05	0.241	1
63.05	0.256	1
65.05	0.256	1

<end>

CLIENT: UTAH AIR NATIONAL GUARD BASE	COMPANY: OPERATIONAL TECHNOLOGIES CORP
LOCATION: SALT LAKE CITY, UTAH	PROJECT: 1315-185

SLUG TEST UST009MW



DATA SET:
SLUG2.DAT
06/13/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 7.801 ft
r_c= 0.083 ft
r_w= 0.667 ft
L = 9.25 ft
b = 9.25 ft
H = 9.25 ft

PARAMETER ESTIMATES:
K = 0.0004475 ft/min
y0 = 4.251 ft

AQTESOLV

SLUG TEST UST009MW
compny
OPERATIONAL TECHNOLOGIES CORP
projno
1315-185
client
UTAH AIR NATIONAL GUARD BASE
locsit
SALT LAKE CITY, UTAH
tstdat
March 2, 1995
obswel
UST009MW
units
1
0
0
slugt5
7.801
0.167
0.667
9.25
9.25
9.25
0.3
0.1
95
0.0166 7.801 1
0.0333 7.797 1
0.05 7.801 1
0.0666 7.804 1
0.0833 7.687 1
0.1 7.573 1
0.3 6.434 1
0.5 5.731 1
0.7 5.149 1
0.9 4.747 1
1.1 4.477 1
1.3 4.335 1
1.5 4.237 1
1.7 4.151 1
1.9 4.082 1
2.1 4.018 1
2.3 3.961 1
2.5 3.914 1
2.7 3.873 1
2.9 3.831 1
3.1 3.797 1
3.3 3.765 1
3.5 3.73 1
3.7 3.702 1
3.9 3.673 1
4.1 3.651 1
4.3 3.625 1
4.5 3.603 1
4.7 3.581 1
4.9 3.559 1
5.1 3.54 1
5.3 3.521 1
5.5 3.502 1

USTO

5.7	3.483	1
5.9	3.464	1
.1	3.448	1
.3	3.435	1
6.5	3.423	1
.7	3.41	1
.9	3.394	1
7.1	3.378	1
7.3	3.366	1
.5	3.35	1
.7	3.337	1
7.9	3.325	1
.1	3.312	1
.3	3.299	1
8.5	3.29	1
3.7	3.277	1
3.9	3.268	1
9.1	3.252	1
11.1	3.144	1
.3.1	3.049	1
15.1	2.96	1
17.1	2.881	1
.9.1	2.799	1
21.1	2.723	1
23.1	2.653	1
25.1	2.586	1
27.1	2.523	1
29.1	2.463	1
31.1	2.403	1
33.1	2.342	1
35.1	2.273	1
37.1	2.209	1
39.1	2.143	1
41.1	2.089	1
43.1	2.041	1
45.1	1.987	1
47.1	1.93	1
49.1	1.883	1
51.1	1.838	1
53.1	1.785	1
55.1	1.74	1
57.1	1.699	1
59.1	1.648	1
61.1	1.594	1
63.1	1.537	1
65.1	1.471	1
67.1	1.404	1
69.1	1.35	1
71.1	1.312	1
73.1	1.271	1
75.1	1.23	1
77.1	1.195	1
79.1	1.163	1
81.1	1.128	1
83.1	1.097	1
85.1	1.062	1
87.1	1.04	1
89.1	1.014	1
91.1	0.989	1
93.1	0.964	1

```
95.1    0.944    1
97.1    0.929    1
<end>
```

APPENDIX F

CHAIN-OF-CUSTODY FORMS

teg

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY, INC.

CHAIN-OF-CUSTODY RECORD

CLIENT: OPERATIONAL TECHNOLOGIES

ADDRESS: 4100 NW LOOP 410, SUITE 230 SAN ANTONIO, TX 78229

PHONE: (210) 731-0000 FAX: (210) 731-0008

CLIENT PROJECT #: 1315-185 PROJECT MANAGER: Kathleen Merino

DATE: 27 OCT 94 PAGE 1 OF 1

TEG-PROJECT #:

LOCATION: HTMH ANG

COLLECTOR: K. Merino DATE OF COLLECTION: 27 OCT

Sample Number	Depth	Time	Sample Type	Container Type	VOA 601/8010	VOA 602/8020	WQA-624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH 8015 (diesel)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	Ca, V, Ni 6010	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
HST-001BH	1-2'	1550	SOIL	STAINLESS STEEL			X											X			2	
HST-001BH	5-6'	1640	SOIL	"			X											X			2	
HST-001BH	10-11½	1720	SOIL	"			X											X			2	
Trip Blank							X															

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME

1900 27OCT94 1900 27OCT94

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SEALS Y/N/NA

SEALS INTACT? Y/N/NA

RECEIVED GOOD COND./COLD

NOTES:

LABORATORY NOTES:

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive, Suite E
San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
1315-185	Utah ANG

Send Report Attention of:	Report Due	Verbal Due
Kathleen Merino	/ /	/ /

Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: 8240	Ca Mod 8015 Gas	Ca Mod 8015 Diesel	Condition of Samples	Initial
UST-002BH	28OCT94	0915		Soil	11-12'	1	Sleeves	X				
UST-002BH		0915		Soil	11-12'	1	Sleeves		X	X		
UST-003BH		1030			1-2'	1		X				
UST-003BH		1030			~~5-6~~ 1-2	1			X	X		
UST-003BH		1045			~~9-10~~ 5-6'	1		X				
UST-003BH		1045			5-6'	1			X	X		
UST-003BH		1055			9-10'	1		X				
UST-003BH		1055			9-10'	1			X	X		
UST-004BH		1130			1-2'	1		X				
UST-004BH		1130			1-2'	1			X	X		
UST-004BH		1140			5-6'	1		X				
UST-004BH		1140			5-6'	1			X	X		

Sampled by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	28 OCT		28 OCT 1820
Relinquished by:(Signature)	**Date/Time**	**Received by: (Signature)**	**Date/Time**
Relinquished by:(Signature)	**Date/Time**	**Received by Lab:**	**Date/Time**
	10/29/94 0935		10/29/94 0935

Remarks:

COMPANY: UPTECH
ADDRESS: 4100 NW Loop 410 Ste.230 SAT 78229
PHONE: (210) 731-0000 FAX: (210) 731-0008

Inchcape Testing Services
Anametrix Laboratories
1961 Concourse Drive, Suite E
San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER: 1315-185 | PROJECT NAME: Utah ANG

Send Report Attention of: Kathleen Merino | Report Due: / / | Verbal Due: / /

Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: 8240	Ca Mod 8015 (Gasoline)	Ca Mod 8015 Diesel	Condition of Samples	Initial
UST-006BH	28OCT	1455		Soil	2-3'	1	Sleeves	X				
UST-006BH		1455			2-3'	1			X	X		
UST-006BH		1505			5-6'	1		X				
UST-006BH		1505			5-6'	1			X	X		
UST-006BH		1515			9-10'	1		X				
UST-006BH		1515			9-10'	1			X	X		
Field Blank		1550		Wat		1	VOA		X			
Equip Blank		1550		Wat		1	VOA		X			
Equip Blank		0830		Wat		1	VOA		X			

Sampled by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	28OCT	[signature]	28OCT 1620
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received by Lab:	Date/Time
FedEx #818509334 3	10/29/94 0935	[signature]	10/29/94 0935

Remarks:

COMPANY: OPTECH
ADDRESS: 4100 NW Loop 410 Ste 230 SATX 78229
PHONE: (210) 731-0000 FAX: (210) 731-0008

200000

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive, Suite E
San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

9410258 (16) (1445) (2)

CHAIN-OF-CUSTODY RECORD

1215 MB

PROJECT NUMBER	PROJECT NAME
1315-185	Utah ANG

Send Report Attention of:	Report Due	Verbal Due
Kathleen Merino	/ /	/ /

Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: 8240	Ca Mod 8015 Gas	Ca Mod 8015 Diesel	Condition of Samples	Initial
Trip	28Oct94			Water		1	VOA	X				
Trip				Water		1	VOA	X				
Feild Blank		1550		Wat		1	1L amber		X	X		
Equip ~~Feild~~ Blank		1550		Wat	(5)	1	1L amber		X	X		
Equip Blank		0830		Wat		1	1L amber		X	X		
Field Blank		1550		Water		1	VOA	X				
Equip Blank		1550		Water	(5)	1	VOA	X				
Equip Blank		0830		Wat		1	VOA	X				
UST002BH		0830		Soil	1-2'	1	Sleeves	X				
UST002BH		0830		Soil	1-2'	1	Sleeves		X	X		
UST-002BH		0845		Soil	5-6'	1	Sleeves	X				
UST-002BH	↓	0845		Soil	5-6'	1	Sleeves		X	X		

Sampled by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	28OCT94	Diane Hoare	28 OCT 1820
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received by Lab:	Date/Time
[redacted]	10/31/94	[redacted]	10/31/94

Remarks: Ca Mod 8015 for Gasoline is only for soil for this page

COMPANY: OPTECH
ADDRESS: 4100 NW Loop 410 Ste 230 SAT 78229
PHONE: (210) 731-[redacted] FAX: (210) 731-[redacted]

000003

Inchcape Testing Services
Anametrix Laboratories
1961 Concourse Drive, Suite E
San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
1315-185	Utah ANG

Send Report Attention of:	Report Due	Verbal Due
Kathleen Merino	/ /	/ /

Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: 8240	Ca Mod 8015 Gas	Ca Mod 8015 Diesel	Condition of Samples	Initial
UST-004BH	28 Oct	1215		Soil	13-14'	1	Sleeves	X				
UST-004 BH		1215			13-14'	1			X	X		
UST-005BH		1355			1-2'	1		X				
UST-005 BH		1355			1-2'	1			X	X		
UST-005 BH		1405			2-3'	1		X				
UST-005 BH		1405			2-3'	1			X	X		
UST-005BH		1415			5-6'	1		X				
UST-005BH		1415			5-6'	1			X	X		
UST-005BH		1428			9-10'	1		X				
UST-005 BH		1428			9-10'	1			X	X		
UST-006BH		1445			1-2'	1		X				
UST-006BH	V	1445		V	1-2'	1	V		X	X		

Sampled by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
M. Katz Merino	28 Oct	Diane H. Dean	28 Oct 1820
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received by Lab:	Date/Time
Fed Ex # 318509334 3	10/29/94 0935		10/29/94 0935

Remarks:

COMPANY: OPTECH
ADDRESS: 4100 NW Loop 410, Ste 230 SA TX 78229
PHONE: (210) 731-0000 FAX: (210) 731-0008

1 (1)

100000

Inchcape Testing Services
Anametrix Laboratories
1961 Concourse Drive, Suite E
San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
1315-185	Utah ANG

Send Report Attention of:	Report Due	Verbal Due
Kathleen Merino	/ /	/ /

Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: 8010	8020	8015 Gas	8015 Diesal	Condition of Samples	Initial
UST-007MW	3NOV94			Water	Bldg 1608	6	VOA	X	X	X		OK	CA
UST-007MW						2	1l Amber				X		
UST-009MW						6	VOA	X	X	X			
"	SW 11/4/94					3	1l Amber				X		
UST-009MW					SW 11/4/94	6	VOA	X	X	X			
"						2	1l Amber				X		
UST-009MW	SW 11/4/94					6	VOA	X	X	X			
"						2	1l Amb				X		
UST-008MW						6	VOA	X	X	X			
"						2	1l Amb				X		

Sampled by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	3NOV/1700	[signature]	3NOV/1700
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]		[signature]	3 1852
Relinquished by: (Signature)	Date/Time	Received by Lab:	Date/Time
		[signature]	11/4/94 9:00

Remarks:
MS/MSD on second set of UST-007MW samples
Field Dup on second set of UST-009MW samples

COMPANY: UPTECH
ADDRESS: 4100 NW Loop 410 SAT 78229
PHONE (210) 731-[illegible]00 FAX (210) 731-[illegible]08

000004

Inchcape Testing Services
Anametrix Laboratories
196 [redacted] Ave, St [redacted]
San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
1315-185	Utah ANG

Send Report Attention of:	Report Due	Verbal Due
Kathleen Merino	/ /	/ /

	Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: 8010	8020	8015 Gas	8015 Diesel	Condition of Samples	Initial
9	Equip Blank						6	VOA	X	X	X		OK.	CL
	"						2	L Amber				X		
10	Decon Water						6	VOA	X	X	X			
	"						2	L Amb				X		
11	Field Blank						6	VOA	X	X	X			
	"						2	L Amb				X		
12	Trip Blank						6	VOA	X		X		per K Merino SW 11/7/94	

11/4/94

Sampled by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	31Nov/1700	[signature]	3 NOV 1700
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]		[signature]	1852
Relinquished by: (Signature)	Date/Time	Received by Lab:	Date/Time
		Carin Nelson	11-4-94 0900

Remarks:

COMPANY: OPTECH
ADDRESS: 4100 NW LOOP 410 SAT 78229
PHONE: (210) 731-0000 FAX: (210) 731-0008

000005

Inchcape Testing Services
Anametrix Laboratories
1961 Concourse Drive, Suite E
San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
1315-185	UTAH ANG-13 SSI

Send Report Attention of: Russ Cason @ OpTech

Report Due: 3/21/95

Verbal Due: 3/21/95

	Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: 8010/8020 N.C.	Type of Analysis: CA. Mod. 8015-D	Type of Analysis: Cal. Mod. 8015-G	Condition of Samples	Initial
1	FIELD BLANK	3-1-95 ~~1455~~ R.C.	1455		WATER	BLDG-1608	8		✓	✓	✓		R.C.
2	UST-007MW	3-1-95	1740		WATER	BLDG 1608	8		✓	✓	✓		R.C.
2	(MS/MSD) UST-007MW	3-1-95	1740		WATER	BLDG 1608	R.C. 8 9		✓	✓	✓		R.C.
3	DUP UST-007MW-	3-1-95	1740		WATER	BLDG 1608	8		✓	✓	✓		R.C.
4	TRIP BLANK	2-27-95	—		WATER	BLDG-1608	2		✓				R.C.

	Date/Time		Date/Time
Sampled by: (Signature)	1 Mar 1815	Received by: (Signature)	1 Mar 1855
Relinquished by: (Signature)	1 Mar 1855	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received by Lab:	Date/Time 3/1/95

Remarks: 5°C

COMPANY: OPERATIONAL TECHNOLOGIES CORP
ADDRESS: 4100 N.W. LOOP 410, STE 230
SAN ANTONIO, TX. 78229
PHONE (210) [redacted] FAX (210) [redacted]

000001

[redacted] Inchcape Testing Services [redacted] 190 [redacted] Court [redacted], Suite [redacted]
Anametrix Laboratories
San José, CA 95131
(408) 432-8192 • Fax (408) 432-8198

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
1315-185	Utah ANG - Bldg 1608 UST

Send Report Attention of:	Report Due	Verbal Due
Russ Cason Optech	1/21/95	/ /

	Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: 8010/8020	Ca Mod 8015 - G	Ca Mod 8015 - D	TCLP	Hold (VOA) per client request 3/13/95 (VOA)	Condition of Samples	Initial
1)	UST009MW	2 Mar 95	1140		Water		6	VOCs	X	X					AKM
	UST009MW		1140				2	1L			X				AKM
2)	UST008MW		1430				6	VOCs	X	X			1x VOA w/ bubbles		AKM
	UST008MW		1430				2	1L			X				AKM
3)	Equip Blank		1515				6	VOCs	X	X					AKM
	Equip Blank		1515				2	1L			X				AKM
4)	UST-IDW		0900		Soil		6	0.5L Plastic				X			AKM
5)	TRIP Blank								X				X		

Sampled by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	2/3 1720	M. Espinoza	2/3 1700
Relinquished by: (Signature) FedEx # 4119616969972	Date/Time	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received by Lab: [signature]	Date/Time 3/3/95 0915

Remarks: TCLP: FOR VOCs & SEMI VOLATILES

COMPANY: OPERATIONAL TECHNOLOGIES
ADDRESS: 4100 NW LOOP 410 SUITE 230 SAN ANTONIO TEXAS 78229
PHONE: (210) 731-0000 FAX: (210) 731-0008

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive, Suite E
San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
1315-185 MW 3-9-95	SL WANG

Send Report Attention of:	Report Due	Verbal Due
Russ Cason @ OPTECH 3-9-95 MW	/ /	/ /

Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: TCLP VOCs	TCLP SVOCs	TCLP Vols	TCLP Toluene, ethylbenzene	TCLP Xylenes, cyclohexane	TCLP MTBE	BOD/FEZO	Condition of Samples	Initial
(4) Drum 1,3,9,10 Composite	3/8/95	1245-2:15PM		Soil		2	8OZ Jar	X	X	X	X	X	NA		Fine	AEW
(6) Trip Blank MD	3/2/95	—		water		3	40 ML VOA							1	Hold NA	

(MW) Per Client request 3-9-95

1520 MB

Sampled by: (Signature) Mary Worden — Date/Time 3/8/95 — Received by: (Signature) FedEx — Date/Time

Relinquished by: (Signature) — Date/Time — Received by: (Signature) — Date/Time

Relinquished by: (Signature) Fed Ex 3/9/95 8:30 — Date/Time — Received by Lab: — Date/Time 3/9/95 9:30

Remarks: Replacement samples for UST-IDW on 9503048 (MW) 3-9-95
CLIENT: OPERATIONAL TECHNOLOGIES
4100 NW LOOP 410 SUITE 230 FAX: 210-731-0008
SAN ANTONIO, TX 78229 PH: 210-731-0000

COMPANY: WEI
ADDRESS: 2251 B. Westcalf Ave
Salt Lake City, Utah 84140
PHONE 801-972-6400 FAX 801-972-8459

Sampler for OPTECH (MW) 3/10/95

7174

Mountain States Analytical

Sample Chain of Custody

Client Name: Op Tech P.O. #

Phone #: (210) 731-0000 Fax #: (210) 731-0008

Project Name/#: 1315-185 UNG-13 SSI/CAI

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: VOC 8010	BTEX 8021	TPH-G (8015 m)	TPH-D (8015 m)					Rush?	Remarks	Temp. of Samples Upon Receipt
UST-0206-P 4-6'	10-17-95	1330	✓		✓			2	✓	✓	✓	✓						HOLD	
UST-0206-P 6-8'		1341	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-0206-P 11-13'		1444	✓		✓			2	✓	✓	✓	✓						HOLD	
UST-0196-P 4-6'		1543	✓		✓			2	✓	✓	✓	✓						HOLD	
UST-0196-P 6-8'		1554	✓		✓			2	✓	✓	✓	✓						HOLD	
UST-0196-P 11-13'		1625	✓		✓			2	✓	✓	✓	✓						HOLD	

Name of Shipper	Airbill No.	Date	Time

Received By (Lab)	Date	Time	Seals Intact?

Sample relinquished by:	Date	Time
[signature]	10-17-95	1739
Russ Cason	10-17-95	1815

Sample received by:	Date	Time
Russ Cason	10-17-95	1739
[illegible]	10-17-95	1815

Turnaround Time Requested (please circle): (Normal) Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date)

Rush results requested by (please circle): Phone Fax

Report Results to: Russ Cason (210) 731-0000

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

White Copy - Original Retain by Lab Yellow Copy - Return to Customer Pink Copy - Retain by Sampler

Mountain States Analytical

7170

Sample Chain of Custody

Client Name: OP Tech P.O. #

Phone #: (210) 731-0000 Fax #: (210) 731-0008

Project Name/#: 1315-185 UTAH ANG-13 SSI/CAI

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	VOCs 8010	R.C. 8020-BTEX	TPH-G 8015m	TPH-D 8015m					Rush?	Remarks	Temp. of Samples Upon Receipt
UST-012GPW 16'	10-18-95	1802	✓			✓			✓	✓	✓	✓						VOID	
TRIP BLANK	10-15-95	1430				✓	✓		✓	✓								RUN	

Analysis Required

Name of Shipper	Airbill No.	Date	Time
OP Tech	—	10-18-95	

Sample relinquished by:	Date	Time
Russ Cason	10-18-95	1915

Sample received by:	Date	Time
J. MORGAN	10/18/95	1915

Received By (Lab)	Date	Time	Seals Intact?

Turnaround Time Requested (please circle): Normal Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date)

Rush results requested by (please circle): Phone Fax

Report Results to: Russell Cason OPTech

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

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Mountain States Analytical

7172

Sample Chain of Custody

Client Name: OpTech P.O. #

Phone #: (210) 731-0000 Fax #: (210) 731-0008

Project Name/#: ~~130~~ R.C. 1315-195 UTAH ANG-13 SSI/CAP

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: VOCs 8010	BTEX 8020	TPH-G 8015m	TPH-D 8015m					Rush?	Remarks	Temp. of Samples Upon Receipt
R.C.	10-18-95																		
UST-012GP 4-6'	1605	1605	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-012GP 6-8'		1621	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-012GP 11-13'		1746	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-015GPW 8'		0825	✓			✓		4	✓	✓	✓	✓						Run	
UST-016GPW 8'		1110	✓			✓		4	✓	✓	✓	✓						HOLD	
UST-016GPW 16'		1252	✓			✓		4	✓	✓	✓	✓						HOLD	
UST-017GPW 8'		1410	✓			✓		4	✓	✓	✓	✓						Run	
UST-017GPW 16'		1520	✓			✓		4	✓	✓	✓	✓						Run	
UST-012GPW 8'		1722	✓			✓		4	✓	✓	✓	✓						HOLD	
UST-1608-1-DUP	↓	—	✓			✓		4	✓	✓	✓	✓						Run	

Name of Shipper	Airbill No.	Date	Time	Sample relinquished by:	Date	Time	Sample received by:	Date	Time
OPTECH	—	10-18-95		Russ Cason	10-18-95	1915	J. MORGAN	10-18-95	1915

Received By (Lab)	Date	Time	Seals Intact?

Turnaround Time Requested (please circle): (Normal) Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date) _____

Rush results requested by (please circle): Phone Fax

Report Results to: Russell Cason OPTECH

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

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Mountain States Analytical

7171

Sample Chain of Custody

Client Name: OpTech P.O. # —

Phone #: (210) 731-0000 Fax #: (210) 731-0008

Project Name/#: 1315-185 UTAH ANGB SSI/CAP

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	VOC, 8010	BTEX 8020	TPH-G 8015m	TPH-D 8015m					Rush?	Remarks	Temp. of Samples Upon Receipt
UST-015GP 4-6'	10-18-95	0800	✓		✓			1	✓	✓	✓	✓						Hold	
UST-015GP 6-8'		0810	✓		✓			1	✓	✓	✓	✓						Hold	
UST-015GP 11-13'		0900	✓		✓			1	✓	✓	✓	✓						Hold	
UST-016GP 4-6'		1030	✓		✓			1	✓	✓	✓	✓						Hold	
UST-016GP 6-8'		1044	✓		✓			1	✓	✓	✓	✓						Hold	
UST-016GP 11-13'		1230	✓		✓			1	✓	✓	✓	✓						Hold	
UST-017GP 4-6'		1357	✓		✓			1	✓	✓	✓	✓						Hold	
UST-017GP 6-8'		1403	✓		✓			1	✓	✓	✓	✓						Hold	
UST-017GP 11-13'	↓	1453	✓		✓			1	✓	✓	✓	✓						Hold	
TRIP BLANK	10-15-95	—				✓	✓	2	✓	✓								Run	

Analysis Required

Name of Shipper	Airbill No.	Date	Time
OPTECH			

Received By (Lab)	Date	Time	Seals Intact?

Sample relinquished by:	Date	Time
Russ Cason	10-18-95	1915

Sample received by:	Date	Time
J. MORGAN	10-18-95	1915

Turnaround Time Requested (please circle): (Normal) Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date) _____

Rush results requested by (please circle): Phone Fax

Report Results to: Russell Cason (OPTECH)

Type of Disposal: —

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

[redacted] lite C[redacted] Origin[redacted] ain by[redacted] Yel[redacted] py - [redacted] to C[redacted] r [redacted] opy - [redacted] n by S[redacted] r [redacted]

7170

Mountain States Analytical

Sample Chain of Custody

Client Name: OP Team P.O. #

Phone #: (210) 731-0000 Fax #: (210) 731-0008

Project Name/#: 115-185 WIMA ANG-13 SSI/CAI

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: VOCs 8010	R.C. Like 8020 +BTEX	TPH-G 8015m	TPH-D 8015m					Rush?	Remarks	Temp. of Samples Upon Receipt
UST-0126-PW 16'	10-14-15	1802	✓			✓			✓	✓	✓	✓						HOLD	
TRIP Blank	10-15-15	1430				✓	✓		✓	✓								Run	

Name of Shipper	Airbill No.	Date	Time
OP Team	—	10-14-15	

Received By (Lab)	Date	Time	Seals Intact?

Sample relinquished by:	Date	Time
Russ Cason	10-15-15	1915

Sample received by:	Date	Time
L Mckeehan	10/16/15	1915

Turnaround Time Requested (please circle): Normal Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date)

Rush results requested by (please circle): Phone Fax

Report Results to: Russell Cason OPTeam

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

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7172

Mountain States Analytical

Sample Chain of Custody

Client Name: Op Tech P.O. #

Phone #: (210) 731-0000 Fax #: (210) 731-0008

Project Name/#: ~~136~~ R.C. 1315-1605 UTAH ANG 13 SOIL/GAS

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: VOCs 8010	BTEX 8020	TPH-G 8015m	TPH-D 8015m					Rush?	Remarks	Temp. of Samples Upon Receipt
R.C.																			
UST-0126-P 4-6'	10-15-95 1605	1605	✓		✓			1	✓	✓	✓	✓						Hold	
UST-0126-P 6-8'		1621	✓		✓			1	✓	✓	✓	✓						Hold	
UST-0126-P 11-13'		1746	✓		✓			1	✓	✓	✓	✓						Hold	
UST-0156-PW 8'		0825	✓			✓		4	✓	✓	✓	✓						Run	
UST-0166-PW 8'		1110	✓			✓		4	✓	✓	✓	✓						Hold	
UST-0166-PW 16'		1252	✓			✓		4	✓	✓	✓	✓						Hold	
UST-0176-PW 8'		1410	✓			✓		4	✓	✓	✓	✓						Run	
UST-0176-PW 16'		1520	✓			✓		4	✓	✓	✓	✓						Run	
UST-0126-PW 8'		1722	✓			✓		4	✓	✓	✓	✓						Hold	
UST-1608-1-DUP	↓	—	✓			✓		4	✓	✓	✓	✓						Run	

Name of Shipper	Airbill No.	Date	Time
OP Tech	—	10-18-95	

Sample relinquished by:	Date	Time
Russ Cason	10-18-95	1915

Sample received by:	Date	Time
J. Mortenson	10-18-95	1915

Received By (Lab)	Date	Time	Seals Intact?

Turnaround Time Requested (please circle): (Normal) Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date)

Rush results requested by (please circle): Phone Fax

Report Results to: Russell Cason Op Tech

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

White Copy - Original to Yellow Copy - Return to Customer Pink Copy - Retain by Sampler

Mountain States Analytical

7171

Sample Chain of Custody

Client Name: OP Tech P.O. # —

Phone #: (210) 731-0000 Fax #: (210) 731-0008

Project Name/#: 1315-185 UTAH JAN6-13 SSI/CAP

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: VOCs 8010	BTEX 8020	TPH-G 8015m	TPH-D 8015m					Rush?	Remarks	Temp. of Samples Upon Receipt
UST-015C-1' 4-6'	10-16-15	0800	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-015C-1' 6-8'		0810	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-015C-1' 11-13'		0900	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-016C-1' 4-6'		1030	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-016C-1' 6-8'		1044	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-016C-1' 11-13'		1230	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-017C-1' 4-6'		1357	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-017C-1' 6-8'		1403	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-017C-1' 11-13'		1453	✓		✓			1	✓	✓	✓	✓						HOLD	
TRIP BLANK	10-15-15	—				✓	✓	2	✓	✓								Run	

Name of Shipper	Airbill No.	Date	Time
OP Tech			

Received By (Lab)	Date	Time	Seals Intact?

Sample relinquished by:	Date	Time	Sample received by:	Date	Time
Russ Cason	10-16-15	1915	J. MORGAN	10-18-15	1415

Turnaround Time Requested (please circle): (Normal) Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date) _____

Rush results requested by (please circle): Phone Fax

Report Results to: Russell Cason (OP Tech)

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

White Copy - Original Retain by Lab Yellow Copy - Return to Customer Pink Copy - Retain by Sampler

Mountain States Analytical

7167

Sample Chain of Custody

Client Name: OPTECH P.O. #

Phone #: (210) 731-0000 Fax #: (210) 731-0008

Project Name/#: 1315-185 UTAH ANGB SSI/CAP

Sampler: KATHLEEN MERINO

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: VOCs 8010	BTEX 8020	TPH-G 8015m	TPH-D 8015m	Rush?	Remarks	Temp. of Samples Upon Receipt
UST-011GP 4-6'	10-14-95	0813	✓		✓			1	✓	✓	✓	✓		HOLD	
UST-011 GP 11-13'		0951	✓		✓			1	✓	✓	✓	✓		HOLD	
UST-013GP 4-6'		1131	✓		✓			2	✓	✓	✓	✓		HOLD run	
UST-013GP 6-8'		1140	✓		✓			1	✓	✓	✓	✓		HOLD	
UST-013GP 13-15'		1345	✓		✓			1	✓	✓	✓	✓		HOLD	
UST-011GPW 8'		0924	✓			✓		4	✓	✓	✓	✓		HOLD run	
UST-011 GPW 16'		1000	✓			✓		4	✓	✓	✓	✓		HOLD run	
UST-013 GPW ~~8~~ R.C. 11'		1314	✓			✓		4	✓	✓	✓	✓		R.C. Run HOLD	
UST-013 GPW 16'		1405	✓			✓		4	✓	✓	✓	✓		R.C. Run HOLD	
TRIP BLANK	10-15-95	1430				✓	✓	2	✓	✓				R.C. Run HOLD	

Name of Shipper	Airbill No.	Date	Time
OPTECH	—		

Received By (Lab)	Date	Time	Seals Intact?

Sample relinquished by:	Date	Time
	19 OCT 95	1715
	10-19-95	1825

Sample received by:	Date	Time
	10-19-95	1715
	10-19-95	1825

Turnaround Time Requested (please circle): (Normal) Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date)

Rush results requested by (please circle): Phone Fax

Report Results to: RUSS CASON (210) 731-0000

Type of Disposal:

Authorized for Disposal by:

Date/Time of Disposal:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

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Mountain States Analytical

7168

Sample Chain of Custody

Client Name: OPTech P.O. #

Phone #: (210) 731-0000 Fax #: (210) 731-0008

Project Name/#: 1315-185 UTAH RNG-B SSI/CAP

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	VOC 8010	BTEX 8020	TPH-G 8015m	TPH-D 8015m					Rush?	Remarks	Temp. of Samples Upon Receipt
UST-1608-1-FB	10-14-95	1205	✓			✓	✓	4	✓	✓	✓	✓						Run	
UST-0146-PW 8'		1540	✓			✓		4	✓	✓	✓	✓						HOLD	
UST-0146-PW 16'		1615	✓			✓		4	✓	✓	✓	✓						HOLD	
UST-1608-1-EB		1700				✓	✓	4	✓	✓	✓	✓						Run	
UST-0146-P 4-6'	10-19-95	1448			X			1										added to COC at MSAI by P.K Olsen 10/20/95	
UST-0146-P 11-13'		1555			X			1											
UST-0146-P 16-8'		1500			X			1											
TRIP BLANK	10-15-95	1430				✓	✓	2	✓	✓								Run	

Name of Shipper	Airbill No.	Date	Time
OPTech			

Received By (Lab)	Date	Time	Seals Intact?

Sample relinquished by:	Date	Time	Sample received by:	Date	Time
	19OCT95	1715		10-19-95	1715
	10-19-95	1825	Pam Olsen	10/19/95	1825

Turnaround Time Requested (please circle): (Normal) Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date)

Rush results requested by (please circle): Phone Fax

Report Results to: Russ Citson OPTech

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

White Copy - Original Retain by Lab Yellow Copy - Return to Customer Pink Copy - Retain by Sampler

Mountain States Analytical

7167

Sample Chain of Custody

Client Name: OPTECH P.O. #

Phone #: (210) 731-0000 Fax #: (210) 731-0008

Project Name/#: 1315-185 UTAH ANG B SSI/CAP

Sampler: KATHLEEN MERINO

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: VOCs 8010	BTEX 8020	TPH-G 8015m	TPH-D 8015m	Rush?	Remarks	Temp. of Samples Upon Receipt
UST-011GP 4-6'	10-14-95	0813	✓		✓			1	✓	✓	✓	✓		HOLD	
UST-011GP 11-13'		0951	✓		✓			1	✓	✓	✓	✓		HOLD	
UST-013GP 4-6'		1131	✓		✓			2	✓	✓	✓	✓		HOLD run	
UST-013GP 6-8'		1140	✓		✓			1	✓	✓	✓	✓		HOLD	
UST-013GP 13-15'		1345	✓		✓			1	✓	✓	✓	✓		HOLD	
UST-011GPW 8'		0924	✓			✓		4	✓	✓	✓	✓		HOLD run	
UST-011GPW 16'		1000	✓			✓		4	✓	✓	✓	✓		HOLD run	
UST-013GPW ~~8'~~ R.C. 11'		1314	✓			✓		4	✓	✓	✓	✓		R.C. ~~Run~~ HOLD	
UST-013GPW 16'		1405	✓			✓		4	✓	✓	✓	✓		R.C. ~~Run~~ HOLD	
TRIP BLANK	10-15-95	1430				✓	✓	2	✓	✓				R.C. ~~Run~~ HOLD & Run	

Name of Shipper	Airbill No.	Date	Time
OPTECH	—		

Received By (Lab)	Date	Time	Seals Intact?

Sample relinquished by:	Date	Time	Sample received by:	Date	Time
[signature]	10 OCT 95	1715	[signature]	10-19-95	1715
[signature]	10-19-95	1825	[signature]	10-19-95	1825

Turnaround Time Requested (please circle): (Normal) Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date)

Rush results requested by (please circle): Phone Fax

Report Results to: RUSS CASON (210) 731-0000

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

White Copy - Original Retain by Lab Yellow Copy - Return to Customer Pink Copy - Retain by Sampler

7168

Mountain States Analytical

Sample Chain of Custody

Client Name: OPTech P.O. #

Phone #: (210) 731-[illegible] Fax #: (210) 731-0008

Project Name/#: 1315-185 UTAH JAN-13 SSI/CAP

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: VOC 8010	BTEX 8020	TPH-G 8015M	TPH-D 8015M				Rush?	Remarks	Temp. of Samples Upon Receipt
UST-1608-1-E13	10-19-95	1205	✓			✓	✓	4	✓	✓	✓	✓					Run	
UST-0146-PW 8'	↓	1540	✓			✓		4	✓	✓	✓	✓					H+V	
UST-0146-PW 16'	↓	1615	✓			✓		4	✓	✓	✓	✓					H+D	
UST-1608-1-E13	↓	1700				✓	✓	4	✓	✓	✓	✓					Run	
UST-0146P 4-6'	10-19-95	1448			X			1									added to COC at MSAI by P.K. Olsen 10/20/95	
UST-0146P 11-13'	↓	1555			X			1										
UST-0146P 6-8'	↓	1500			X			1										
TRIP BLANK	10-12-95	1430				✓	✓	2	✓	✓							Run	

Name of Shipper	Airbill No.	Date	Time
OPTech			

Received By (Lab)	Date	Time	Seals Intact?

Sample relinquished by:	Date	Time
[signature]	19OCT95	1715
Russ Cason	10-19-95	1825

Sample received by:	Date	Time
[signature]	10-19-95	1715
Pam Olsen	10-19-95	1825

Turnaround Time Requested (please circle): (Normal) Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date)

Rush results requested by (please circle): Phone Fax

Report Results to: Russ Cason OPTech

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

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Mountain States Analytical

7167

Sample Chain of Custody

Client Name: OPTech P.O. #

Phone #: (210) 731-0000 Fax #: (210) 731-0008

Project Name/#: 1315-185 UTAH INC-B SS I/CAP

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: VOCs 8010	BTEX 8020	TPH-G 8015m	TPH-D 8015m					Rush?	Remarks	Temp. of Samples Upon Receipt
UST-011G-P 5-6'	10-19-95	0813	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-011G-P 11-13'		0951	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-013G-P 4-6'		1131	✓		✓			2	✓	✓	✓	✓						HOLD	
UST-013G-P 6-8'		1140	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-013G-P 13-15'		1345	✓		✓			1	✓	✓	✓	✓						HOLD	
UST-011G-PW 8'		0924	✓			✓		4	✓	✓	✓	✓						HOLD	
UST-011G-PW 16'		1000	✓			✓		4	✓	✓	✓	✓						HOLD	
UST-013G-PW 8 ± R.C 11'		1314	✓			✓		4	✓	✓	✓	✓						R.C Run HOLD	
UST-013G-PW 16'		1405	✓			✓		4	✓	✓	✓	✓						R.C Run HOLD	
TRIP BLANK	10-15-95	1430				✓	✓	2	✓	✓								R.C Run & HOLD	

Name of Shipper	Airbill No.	Date	Time
OPTech	—		

Received By (Lab)	Date	Time	Seals Intact?

Sample relinquished by:	Date	Time
[signature]	10-19-95	1715
[signature]	10-19-95	1825

Sample received by:	Date	Time
[signature]	10-19-95	1715
[signature]	10-19-95	1825

Turnaround Time Requested (please circle): (Normal) Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date)

Rush results requested by (please circle): Phone Fax

Report Results to: Russ Cason (210) 731-0000

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

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10-D3 V-21C

7220

Mountain States Analytical

Sample Chain of Custody

Client Name: Operational Technologies P.O. # —

Phone #: (210) 731-0000 Fax #: (210) 731-0008

Project Name/#: UTAH ANG-B 1315-185 P.O. 30

Sampler: K. Merino

	Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: VOCs 8010	BTEX 8020	TPH-G 8015m	TPH-D 8015m					Rush?	Remarks	Temp. of Samples Upon Receipt
✓	UST-010mw	10-25-95	0955	✓			✓			✓	✓	✓	✓							
✓	UST-011mw		1200	✓						✓	✓	✓	✓							
✓	UST-012mw		1320	✓						✓	✓	✓	✓							
✓	UST-10mw MS/MSD		1005	✓						✓	✓	✓	✓							
✓	UST-1608-3-FB		1055				✓	✓		✓	✓	✓	✓							
✓	UST-1608-3 EB		1040				✓	✓		✓	✓	✓	✓							
✓	UST-1608-3 Dup		—	✓			✓			✓	✓	✓	✓							
✓	Trip Blank	10-15-95	1430				✓	✓		✓	✓									

Name of Shipper	Airbill No.	Date	Time
OPTech	—	10-25-95	

Received By (Lab)	Date	Time	Seals Intact?

Sample relinquished by:	Date	Time
Russell Cason	10-25-95	1910

Sample received by:	Date	Time
[illegible]	10.25.95	1910

Turnaround Time Requested (please circle): (Normal) Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date) _____

Rush results requested by (please circle): Phone Fax

Report Results to: Russ Cason OPTech

(210) 731-0000

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

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11-12
V-110

Mountain States Analytical

7378

Sample Chain of Custody

Client Name: Olsen P.O. #

Phone #: 210-731-0000 Fax #: 210-731-0008

Project Name/#: Utah ANG B, Bldg 1608

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: 8010/8020	8015 GRO	8015 DRO	Rush?	Remarks	Temp. of Samples Upon Receipt
UST 1608 - TB	15 NOV	NA				X			✓					4°C
UST 010 MW		1146	X			X		2	✓					
UST 010 MW		1146	X			X		1		✓				
UST 010 MW		1146	X			X		1			✓			
UST 011 MW		1230	X			X		2	✓					
UST 011 MW		1230	X			X		1		✓				
UST 36 011 MW		1230	X			X		1			✓			
UST 012 MW		1340	X			X		2	✓					
UST 012 MW		1340	X			X		1		✓				
UST 012 MW	↓	134	X			X		1			✓			

Name of Shipper	Airbill No.	Date	Time

Received By (Lab)	Date	Time	Seals Intact?

Sample relinquished by:	Date	Time
[signature]	15 NOV	1420

Sample received by:	Date	Time
Tom Olsen	11-15-95	1420

Turnaround Time Requested (please circle): Normal Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date)

Rush results requested by (please circle): Phone Fax

Report Results to: Russ Olsen

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

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Mountain States Analytical

7379

Sample Chain of Custody

Client Name: Ojeda P.O. #

Phone #: (210) 731-0000 Fax #: 210-731-0008

Project Name/#: CHANG B, Bldg 1608

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: 8010/8020	8015 Gas	8015 Diesel							Rush?	Remarks	Temp. of Samples Upon Receipt
US 1608 - DUP	1SNOV		X			X		2	✓											8°C
US 1608 DUP			X			X		1		✓										
US 1608 - DUP			X			X		1			✓									
US 1608 - KB		1345	X			X		2	✓											
US 1608 - KB		1345	X			X		1		✓										
US 1608 - KB		1345	X			X		1			✓									
US 1608 - FB		1348	X			X		2	✓											
US 1608 - FB		1348	X			X		1		✓										
US 1608 - FB	↓	1348	X			X		1			✓									

Name of Shipper	Airbill No.	Date	Time

Received By (Lab)	Date	Time	Seals Intact?

Sample relinquished by:	Date	Time
[signature]	1SNOV	1420

Sample received by:	Date	Time
[signature]	11-15-95	1420

Turnaround Time Requested (please circle): Normal Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date)

Rush results requested by (please circle): Phone Fax

Report Results to: Kris Carson

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

White Copy - Original Retain by Lab Yellow Copy - Return to Customer Pink Copy - Retain by Sampler

Mountain States Analytical

The Quality Solution

4631

Sample Chain of Custody

Client Name: Operational Technologies P.O. #

Phone #: (210) 731-0000 Fax #: (210) 731-0034

Project Name/#: Utah ANG-B, Former UST at 1608

Sampler: Kathleen Merino

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: BTEX 8020	Rush?	Remarks	Temp. of Samples Upon Receipt
IDW-W-D2	6/15/95	1140	X			X		2	✓	YES	2 DAY	2.1°C
IDW-W-D4	6/15/95	1150	X			X		2	✓		RUSH ON	
IDW-W-D5	6/15/95	1158	X			X		2	✓		ALL	
IDW-W-D13	6/15/95	1255	X			X		2	✓		SAMPLES	
IDW-S-D1	6/15/95	0940		X	X			1	✓			
IDW-S-D9	6/15/95	1025		X	X			1	✓			
IDW-S-D10	6/15/95	1100		X	X			1	✓			
TRIP BLANK						X		1	✓			

Name of Shipper	Airbill No.	Date	Time
		6/15/95	1440

Received By (Lab)	Date	Time	Seals Intact?
Mark Bertin	06/15/95	14:40	ok!

Turnaround Time Requested (please circle): Normal (Rush)

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date) 06/19/95

Rush results requested by (please circle): Phone (Fax)

Report Results to: Russell Cason

Sample relinquished by:	Date	Time	Sample received by:	Date	Time
A. Kathleen					

Type of Disposal:

Date/Time of Disposal:

Authorized for Disposal by:

Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

White Copy - Original Retain by Lab Yellow Copy Return to Customer Pink Copy Retain by Sampler

APPENDIX G

ANALYTICAL DATA

SECTION G.1 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL RESULTS

Every laboratory analysis was validated by measuring the recovery of specific compounds which were spiked into all samples. Such compounds are known as surrogates. The recovery of surrogate compounds for an analytical procedure must fall within range of the control limit values for each analysis to be considered valid or compliant with the procedures.

Field duplicate samples, field blanks, equipment blanks, and trip blanks were submitted to the analytical laboratory for assessment of the quality of data resulting from the field sampling program. Field, equipment, and trip blanks are analyzed to check for procedural contamination and ambient conditions at the site that may have caused sample contamination. Duplicate samples were submitted to provide a quality assurance check on analytical procedures and results.

The level of quality control effort included one field duplicate, equipment, and field blank for every 10 or fewer investigative samples. One VOC analysis trip blank, consisting of distilled, deionized, ultra pure water, as included along with each shipment of samples. One matrix spike/matrix spike duplicate was collected for every 20 or fewer investigative samples. Matrix samples provide information about the effect of the sample matrix on the analytical methodology.

Volatile organic analyses (SW846-8240) displayed surrogate recoveries all within quality control limits and all samples met the 14 day analysis holding times. All blanks were clean and no compounds were detected above the assigned detection limits.

Halogenated and aromatic organic volatile analyses (SW846-8010/8020) displayed surrogate recoveries all within quality control limits and all samples met the 14 day analysis holding times except for samples: UST-017GP 4'-6', UST-014GP 6'-8', UST-010MW MS, UST-010MW MSD, UST-1608-3 FB, UST-1608-3 EB, UST-1608-3 DUP, UST-018GP 4'-6', and UST-009GP 4'-6'. These samples were exceeded from one to two days past the set holding times and out of our area of control due to instrumentation malfunctions within the laboratory. All blanks did not show any kind of contamination that exceeded the assigned detection limits.

Gasoline and diesel total petroleum hydrocarbon analyses (SW846-8015) displayed all surrogate recoveries within quality control limits and the holding times for all samples met the 14-day analysis holding times except for samples: UST-010MW MSD, UST-1608-3 FB, UST-1608-3 EB, UST-1608-3 DUP, UST-019GP 6'-8', UST-012MW 2-3.5 MSD, UST-020GPW 8', and UST-020GPW 16'. These samples were exceeded from one to two days past the set holding times and out of our area of control due to instrumentation malfunction

within the laboratory. All blanks did not show any kind of contamination that exceeded the assigned detection limits.

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

MS. KATHLEEN MERINO
OPERATIONAL TECHNOLOGIES CORP.
4100 N.W. LOOP 410, SUITE 230
SAN ANTONIO, TX 78229-4253

Workorder # : 9410238
Date Received : 10/28/94
Project ID : UTAH ANG
Purchase Order: N/A

The following samples were received at Anametrix for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9410238- 1	1BH-1-2
9410238- 2	1BH-5-6
9410238- 3	1BH-1011
9410238- 4	T. BLANK
9410238- 5	T. BLANK
9410238- 6	FIELDBLK
9410238- 7	EQUIPBLK
9410238- 8	2BH-1-2
9410238- 9	2BH-5-6
9410238-10	2BH-1112
9410238-11	3BH-1-2
9410238-12	3BH-5-6
9410238-13	3BH-9-10
9410238-14	4BH-1-2
9410238-15	4BH-5-6
9410238-16	4BH-1314
9410238-17	5BH-1-2
9410238-18	5BH-2-3
9410238-19	5BH-5-6
9410238-20	5BH-9-10

This report is organized in sections according to the specific Anametrix laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

If you have any further questions or comments on this report, please call your project manager as soon as possible. Thank you for using Incape Testing Services.

Corinne Chan for
Susan Kraska Yeager
Laboratory Director

11/16/94
Date

Project Manager

This report consists of ____ pages.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. KATHLEEN MERINO
OPERATIONAL TECHNOLOGIES CORP.
4100 N.W. LOOP 410, SUITE 230
SAN ANTONIO, TX 78229-4253

Workorder # : 9410238
Date Received : 10/28/94
Project ID : UTAH ANG
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9410238- 1	1BH-1-2	SOIL	10/27/94	TPHd
9410238- 2	1BH-5-6	SOIL	10/27/94	TPHd
9410238- 3	1BH-1011	SOIL	10/27/94	TPHd
9410238- 6	FIELDBLK	WATER	10/28/94	TPHd
9410238- 7	EQUIPBLK	WATER	10/28/94	TPHd
9410238- 8	2BH-1-2	SOIL	10/28/94	TPHd
9410238- 9	2BH-5-6	SOIL	10/28/94	TPHd
9410238-10	2BH-1112	SOIL	10/28/94	TPHd
9410238-11	3BH-1-2	SOIL	10/28/94	TPHd
9410238-12	3BH-5-6	SOIL	10/28/94	TPHd
9410238-13	3BH-9-10	SOIL	10/28/94	TPHd
9410238-14	4BH-1-2	SOIL	10/28/94	TPHd
9410238-15	4BH-5-6	SOIL	10/28/94	TPHd
9410238-16	4BH-1314	SOIL	10/28/94	TPHd
9410238-17	5BH-1-2	SOIL	10/28/94	TPHd
9410238-18	5BH-2-3	SOIL	10/28/94	TPHd
9410238-19	5BH-5-6	SOIL	10/28/94	TPHd
9410238-20	5BH-9-10	SOIL	10/28/94	TPHd
9410238- 1	1BH-1-2	SOIL	10/27/94	TPHg
9410238- 2	1BH-5-6	SOIL	10/27/94	TPHg
9410238- 3	1BH-1011	SOIL	10/27/94	TPHg
9410238- 6	FIELDBLK	WATER	10/28/94	TPHg
9410238- 7	EQUIPBLK	WATER	10/28/94	TPHg
9410238- 8	2BH-1-2	SOIL	10/28/94	TPHg

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. KATHLEEN MERINO
OPERATIONAL TECHNOLOGIES CORP.
4100 N.W. LOOP 410, SUITE 230
SAN ANTONIO, TX 78229-4253

Workorder # : 9410238
Date Received : 10/28/94
Project ID : UTAH ANG
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9410238- 9	2BH-5-6	SOIL	10/28/94	TPHg
9410238-10	2BH-1112	SOIL	10/28/94	TPHg
9410238-11	3BH-1-2	SOIL	10/28/94	TPHg
9410238-12	3BH-5-6	SOIL	10/28/94	TPHg
9410238-13	3BH-9-10	SOIL	10/28/94	TPHg
9410238-14	4BH-1-2	SOIL	10/28/94	TPHg
9410238-15	4BH-5-6	SOIL	10/28/94	TPHg
9410238-16	4BH-1314	SOIL	10/28/94	TPHg
9410238-17	5BH-1-2	SOIL	10/28/94	TPHg
9410238-18	5BH-2-3	SOIL	10/28/94	TPHg
9410238-19	5BH-5-6	SOIL	10/28/94	TPHg
9410238-20	5BH-9-10	SOIL	10/28/94	TPHg

0000 3

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9410238
Matrix : SOIL
Date Sampled : 10/27/94
Date Extracted: 10/31/94

Project Number : UTAH ANG
Date Released : 11/08/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9410238-01	1BH-1-2	11/02/94	10	ND	86%
9410238-02	1BH-5-6	11/02/94	10	ND	89%
9410238-03	1BH-1011	11/02/94	10	ND	83%
B031H1F9	METHOD BLANK	11/02/94	10	ND	83%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for o-terphenyl are 55-129%.

ND - Not detected at or above the practical quantitation limit for the method.

TPHd - Total Petroleum Hydrocarbons as C10-C28 is determined by GCFID following sample extraction by EPA Method 3550.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 11/16/94 Date

Supervisor 11/16/94 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9410238
Matrix : SOIL
Date Sampled : 10/28/94
Date Extracted: 11/01/94

Project Number : UTAH ANG
Date Released : 11/08/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9410238-08	2BH-1-2	11/04/94	10	ND	81%
9410238-09	2BH-5-6	11/05/94	20	100	72%
9410238-10	2BH-1112	11/03/94	10	ND	85%
9410238-11	3BH-1-2	11/05/94	10	ND	72%
9410238-12	3BH-5-6	11/03/94	10	ND	84%
9410238-13	3BH-9-10	11/05/94	10	ND	100%
9410238-14	4BH-1-2	11/03/94	10	ND	83%
9410238-15	4BH-5-6	11/03/94	10	ND	85%
9410238-16	4BH-1314	11/05/94	10	ND	79%
9410238-17	5BH-1-2	11/03/94	10	ND	81%
9410238-18	5BH-2-3	11/03/94	10	ND	82%
9410238-19	5BH-5-6	11/05/94	10	ND	75%
9410238-20	5BH-9-10	11/03/94	10	ND	78%
BN01H1F1	METHOD BLANK	11/03/94	10	ND	87%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for o-terphenyl are 55-129%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C10-C28 is determined by GCFID following sample extraction by EPA Method 3550.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

RPatel 11/11/94
Analyst Date

Cheryl Balman 11/10/94
Supervisor Date

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ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9410238
Matrix : WATER
Date Sampled : 10/28/94
Date Extracted: 11/01/94

Project Number : UTAH ANG
Date Released : 11/08/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)	Surrogate %Rec
9410238-06	FIELDBLK	11/02/94	50	ND	89%
9410238-07	EQUIPBLK	11/02/94	50	ND	88%
BN0111F1	METHOD BLANK	11/01/94	50	ND	84%

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
The surrogate recovery limits for o-terphenyl are 44-117%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C10-C28 is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 11/16/94 Date

Supervisor 11/16/94 Date

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ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID	: UTAH ANG	Anametrix ID	: 9410238-01
Sample ID	: 1BH-1-2	Analyst	:
Matrix	: SOIL	Supervisor	:
Date Sampled	:10/27/94		
Date Analyzed	:11/ 7/94	Dilution Factor	: 1.0
Instrument ID	: MSD1	Conc. Units	: ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	7.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	6.	
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 1BH-5-6
Matrix : SOIL
Date Sampled :10/27/94
Date Analyzed :11/ 7/94
Instrument ID : MSD1

Anametrix ID : 9410238-02
Analyst :
Supervisor :

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	46.	
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	8.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	23.	
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	12.	
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 1BH-1011
Matrix : SOIL
Date Sampled :10/27/94
Date Analyzed :11/ 8/94
Instrument ID : MSD1

Anametrix ID : 9410238-03
Analyst : SC
Supervisor : MF

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	39.	
1330-20-7	Xylene (Total)	5.	13.	
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 2BH-1-2
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 7/94
Instrument ID : MSD1

Anametrix ID : 9410238-0
Analyst : SY
Supervisor : HP

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	66.	
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	13.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	7.	
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 2BH-5-6
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD1

Anametrix ID : 9410238-0.
Analyst :
Supervisor :

Dilution Factor : 1000.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10000.	ND	U
75-01-4	Vinyl chloride	10000.	ND	U
74-83-9	Bromomethane	10000.	ND	U
75-00-3	Chloroethane	10000.	ND	U
75-69-4	Trichlorofluoromethane	5000.	ND	U
75-35-4	1,1-Dichloroethene	5000.	ND	U
76-13-1	Trichlorotrifluoroethane	5000.	ND	U
67-64-1	Acetone	20000.	ND	U
75-15-0	Carbon disulfide	5000.	ND	U
75-09-2	Methylene chloride	5000.	ND	U
156-60-5	Trans-1,2-dichloroethene	5000.	ND	U
75-34-3	1,1-Dichloroethane	5000.	ND	U
156-59-2	Cis-1,2-dichloroethene	5000.	ND	U
78-93-3	2-Butanone	20000.	ND	U
67-66-3	Chloroform	5000.	ND	U
71-55-6	1,1,1-Trichloroethane	5000.	ND	U
56-23-5	Carbon tetrachloride	5000.	ND	U
108-05-4	Vinyl acetate	10000.	ND	U
71-43-2	Benzene	5000.	ND	U
107-06-2	1,2-Dichloroethane	5000.	ND	U
79-01-6	Trichloroethene	5000.	ND	U
78-87-5	1,2-Dichloropropane	5000.	ND	U
75-27-4	Bromodichloromethane	5000.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5000.	ND	U
108-10-1	4-Methyl-2-pentanone	10000.	ND	U
108-88-3	Toluene	5000.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5000.	ND	U
79-00-5	1,1,2-Trichloroethane	5000.	ND	U
127-18-4	Tetrachloroethene	5000.	ND	U
591-78-6	2-Hexanone	10000.	ND	U
124-48-1	Dibromochloromethane	5000.	ND	U
108-90-7	Chlorobenzene	5000.	ND	U
100-41-4	Ethylbenzene	5000.	ND	U
1330-20-7	Xylene (Total)	5000.	25000.	
100-42-5	Styrene	5000.	ND	U
75-25-2	Bromoform	5000.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5000.	ND	U
541-73-1	1,3-Dichlorobenzene	5000.	ND	U
106-46-7	1,4-Dichlorobenzene	5000.	ND	U
95-50-1	1,2-Dichlorobenzene	5000.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 2BH-1112
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD1

Anametrix ID : 9510238-10
Analyst :
Supervisor :

Dilution Factor : 10.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	100.	ND	U
75-01-4	Vinyl chloride	100.	ND	U
74-83-9	Bromomethane	100.	ND	U
75-00-3	Chloroethane	100.	ND	U
75-69-4	Trichlorofluoromethane	50.	ND	U
75-35-4	1,1-Dichloroethene	50.	ND	U
76-13-1	Trichlorotrifluoroethane	50.	ND	U
67-64-1	Acetone	200.	ND	U
75-15-0	Carbon disulfide	50.	ND	U
75-09-2	Methylene chloride	50.	ND	U
156-60-5	Trans-1,2-dichloroethene	50.	ND	U
75-34-3	1,1-Dichloroethane	50.	ND	U
156-59-2	Cis-1,2-dichloroethene	50.	ND	U
78-93-3	2-Butanone	200.	ND	U
67-66-3	Chloroform	50.	ND	U
71-55-6	1,1,1-Trichloroethane	50.	ND	U
56-23-5	Carbon tetrachloride	50.	ND	U
108-05-4	Vinyl acetate	100.	ND	U
71-43-2	Benzene	50.	1300.	
107-06-2	1,2-Dichloroethane	50.	ND	U
79-01-6	Trichloroethene	50.	ND	U
78-87-5	1,2-Dichloropropane	50.	ND	U
75-27-4	Bromodichloromethane	50.	ND	U
10061-01-5	Cis-1,3-dichloropropene	50.	ND	U
108-10-1	4-Methyl-2-pentanone	100.	ND	U
108-88-3	Toluene	50.	690.	
10061-02-6	Trans-1,3-dichloropropene	50.	ND	U
79-00-5	1,1,2-Trichloroethane	50.	ND	U
127-18-4	Tetrachloroethene	50.	ND	U
591-78-6	2-Hexanone	100.	ND	U
124-48-1	Dibromochloromethane	50.	ND	U
108-90-7	Chlorobenzene	50.	ND	U
100-41-4	Ethylbenzene	50.	69.	
1330-20-7	Xylene (Total)	50.	340.	
100-42-5	Styrene	50.	ND	U
75-25-2	Bromoform	50.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	50.	ND	U
541-73-1	1,3-Dichlorobenzene	50.	ND	U
106-46-7	1,4-Dichlorobenzene	50.	ND	U
95-50-1	1,2-Dichlorobenzene	50.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 3BH-1-2
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 7/94
Instrument ID : MSD1

Anametrix ID : 9410238-11
Analyst : SY
Supervisor : MP

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	9.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 3BH-5-6
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 7/94
Instrument ID : MSD1

Anametrix ID : 9410238-[illegible]
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	26.	
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	11.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 3BH-9-10
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD1

Anametrix ID : 9410238-13
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	20.	B
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	7.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 4BH-1-2
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD1

Anametrix ID : 9410238-14
Analyst : [illegible]
Supervisor : [illegible]
Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	35.	B
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	7.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 4BH-5-6
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD1

Anametrix ID : 9410238-15
Analyst : EC
Supervisor : DP

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	43.	B
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	8.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 4BH-1314
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD1

Anametrix ID : 9410238-1
Analyst :
Supervisor :
Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	27.	B
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	7.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 5BH-1-2
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD1

Anametrix ID : 9410238-17
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	6.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 5BH-2-3
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD1

Anametrix ID : 9410238-18
Analyst : SK
Supervisor : DP

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	70.	B
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	10.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	5.	
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 5BH-5-6
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD1

Anametrix ID : 9410238-19
Analyst : SC
Supervisor : MP

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	170.	B
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	14.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 5BH-9-10
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD1

Anametrix ID : 9410238-20
Analyst : SL
Supervisor : BF

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	150.	B
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	15.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID	: UTAH ANG	Anametrix ID	: 9410248-01
Sample ID	: 6BH-1-2	Analyst	:
Matrix	: SOIL	Supervisor	:
Date Sampled	:10/28/94		
Date Analyzed	:11/ 8/94	Dilution Factor	: 1.0
Instrument ID	: MSD2	Conc. Units	: ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	9.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 6BH-2-3
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD2

Anametrix ID : 9410248-0
Analyst : [illegible]
Supervisor : [illegible]
Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	6.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 6BH-5-6
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD2

Anametrix ID : 9410248-03
Analyst :
Supervisor :

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	8.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 6BH-9-10
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD2

Anametrix ID : 9410248-04
Analyst : [illegible]
Supervisor : [illegible]
Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	10.	
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

MATRIX SPIKE RECOVERY FORM -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : 4BH-1-2
Matrix : SOIL
Date Sampled :10/28/94
Date Analyzed :11/ 8/94
Instrument ID : MSD2

Anametrix ID : 9410238-14
Analyst : SC
Supervisor : MF

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC	%REC LIMITS
1,1-Dichloroethene	50.	0.	51.	101	62-131
Benzene	50.	0.	51.	102	65-117
Trichloroethene	50.	0.	44.	89	57-131
Toluene	50.	0.	50.	101	62-114
Chlorobenzene	50.	0.	50.	101	62-122

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC	% RPD	RPD LIMITS	%REC LIMITS
1,1-Dichloroethene	50.	47.	94	7	30	62-131
Benzene	50.	49.	99	3	30	65-117
Trichloroethene	50.	43.	86	3	30	57-131
Toluene	50.	49.	99	2	30	62-114
Chlorobenzene	50.	49.	99	2	30	62-122

* Value is outside of Anametrix QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9410238 Client Project ID : UTAH ANG

Matrix : WATER Units : ug/L

Compound Name	Method Reporting Limit*	Client ID FIELDBLK Lab ID 9410238-06	Client ID EQUIPBLK Lab ID 9410238-07	Client ID Lab ID METHOD BLANK	Client ID Lab ID METHOD BLANK	Client ID Lab ID
Benzene	0.50	-	-	-	-	
Toluene	0.50	-	-	-	-	
Ethylbenzene	0.50	-	-	-	-	
Total Xylenes	0.50	-	-	-	-	
TPH as Gasoline	50	ND	ND	ND	ND	
Surrogate Recovery		108%	97%	102%	108%	
Instrument ID		HP12	HP12	HP12	HP12	
Date Sampled		10/28/94	10/28/94	N/A	N/A	
Date Analyzed		11/01/94	11/01/94	11/01/94	11/04/94	
RLMF		1	1	1	1	
Filename Reference		FPO23806.D	FPO23807.D	BN0101E1.D	BN0401E1.D	

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

00023

Reggie Davison 11/11/94
Analyst Date

Supervisor Date

Issued on 11/08/94 @ 42 AM

Organic Analysis Data Sheet

Total Petroleum Hydrocarbons as Gasoline with BTEX

ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9410238 | Client Project ID : UTAH ANG

Matrix : SOIL | Units : mg/Kg

Compound Name	Method Reporting Limit*	Client ID 5BH-9-10 Lab ID 9410238-20	Client ID Lab ID METHOD BLANK	Client ID Lab ID METHOD BLANK	Client ID Lab ID METHOD BLANK	Client ID Lab ID METHOD BLANK
Benzene	0.0050	-	-	-	-	-
Toluene	0.0050	-	-	-	-	-
Ethylbenzene	0.0050	-	-	-	-	-
Total Xylenes	0.0050	-	-	-	-	-
TPH as Gasoline	0.50	ND	ND	ND	ND	ND
Surrogate Recovery		111%	102%	104%	108%	103%
Instrument ID		HP12	HP12	HP12	HP12	HP12
Date Sampled		10/28/94	N/A	N/A	N/A	N/A
Date Analyzed		11/03/94	11/01/94	11/01/94	11/02/94	11/03/94
RLMF		1	1	1	1	1
Filename Reference		FRO23820.D	BN0101E1.D	BN0102E1.D	BN0201E1.D	BN0301E1.D

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.

TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.

BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

020000

Reggie Dawson 11/11/94
Analyst Date

Cheryl Bowman 11/10/94
Supervisor Date

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9410238 | Client Project ID : UTAH ANG

Matrix : SOIL | Units : mg/Kg

Compound Name	Method Reporting Limit*	Client ID 4BH-5-6 Lab ID 9410238-15	Client ID 4BH-1314 Lab ID 9410238-16	Client ID 5BH-1-2 Lab ID 9410238-17	Client ID 5BH-2-3 Lab ID 9410238-18	Client ID 5BH-5-6 Lab ID 9410238-19
Benzene	0.0050	-	-	-	-	-
Toluene	0.0050	-	-	-	-	-
Ethylbenzene	0.0050	-	-	-	-	-
Total Xylenes	0.0050	-	-	-	-	-
TPH as Gasoline	0.50	130	ND	ND	ND	ND
Surrogate Recovery		122%	113%	101%	110%	107%
Instrument ID		HP12	HP12	HP12	HP12	HP12
Date Sampled		10/28/94	10/28/94	10/28/94	10/28/94	10/28/94
Date Analyzed		11/03/94	11/02/94	11/02/94	11/03/94	11/02/94
RLMF		25	1	1	1	1
Filename Reference		FTO23815.D	FPO23816.D	FPO23817.D	FRO23818.D	FPO23819.D

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

000231

Reggie Dawson 11/11/94
Analyst Date

Cheryl Eskmon 11/12/94
Supervisor Date

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9410238
Matrix : SOIL

Client Project ID : UTAH AHG
Units : mg/Kg

Compound Name	Method Reporting Limit*	Client ID 2BH-1112 Lab ID 9410238-10	Client ID 3BH-1-2 Lab ID 9410238-11	Client ID 3BH-5-6 Lab ID 9410238-12	Client ID 3BH-9-10 Lab ID 9410238-13	Client ID 4BH-1-2 Lab ID 9410238-14
Benzene	0.0050	-	-	-	-	-
Toluene	0.0050	-	-	-	-	-
Ethylbenzene	0.0050	-	-	-	-	-
Total Xylenes	0.0050	-	-	-	-	-
TPH as Gasoline	0.50	23	ND	ND	ND	ND
Surrogate Recovery		127%	105%	105%	109%	110%
Instrument ID		HP12	HP12	HP12	HP12	HP12
Date Sampled		10/28/94	10/28/94	10/28/94	10/28/94	10/28/94
Date Analyzed		11/02/94	11/01/94	11/01/94	11/01/94	11/01/94
RLMF		5	1	1	1	1
Filename Reference		FRO23810.D	FPO23811.D	FPO23812.D	FPO23813.D	FPO23814.D

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

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Reggie Dawson 11/11/94
Analyst Date

Cheryl Balmer 11/11/94
Supervisor Date

Issued on 11/11/94 @ 11:26 AM

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9410238
Matrix : SOIL

Client Project ID : UTAH ANG
Units : mg/Kg

Compound Name	Method Reporting Limit*	Client ID 1BH-1-2 Lab ID 9410238-01	Client ID 1BH-5-6 Lab ID 9410238-02	Client ID 1BH-1011 Lab ID 9410238-03	Client ID 2BH-1-2 Lab ID 9410238-08	Client ID 2BH-5-6 Lab ID 9410238-09
Benzene	0.0050	-	-	-	-	-
Toluene	0.0050	-	-	-	-	-
Ethylbenzene	0.0050	-	-	-	-	-
Total Xylenes	0.0050	-	-	-	-	-
TPH as Gasoline	0.50	ND	56	3.3	0.7	3500
Surrogate Recovery		108%	116%	100%	119%	105%
Instrument ID		HP12	HP12	HP12	HP12	HP12
Date Sampled		10/27/94	10/27/94	10/27/94	10/28/94	10/28/94
Date Analyzed		11/01/94	11/03/94	11/02/94	11/01/94	11/04/94
RLMF		1	10	1	1	1000
Filename Reference		FPO23801.D	FTO23802.D	FRO23803.D	FPO23808.D	FQO23809.D

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Dawson 11/11/94
Analyst Date

Cheryl Balmer 11/11/94
Supervisor Date

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ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : F.BLANK
Matrix : WATER
Date Sampled :11/ 3/94
Date Analyzed :11/16/94
Instrument ID : AD14

Anametrix ID : 9410248-11
Analyst :
Supervisor : KK

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	1.9	
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
67-66-3	Chloroform	.50	2.3	
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	ND	U
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U
74-95-3	Dibromomethane	.50	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	.50	ND	U
96-18-4	1,2,3-Trichlropropane	.50	ND	U
108-86-1	Bromobenzene	.50	ND	U
100-44-7	Benzyl chloride	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : F.BLANK
Matrix : WATER
Date Sampled :11/ 3/94
Date Analyzed :11/16/94
Instrument ID : HP14

Anametrix ID : 9410248-1
Analyst : KK
Supervisor :

Dilution Factor : 1.
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	.50	ND	U
108-88-3	Toluene	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
100-41-4	Ethylbenzene	.50	ND	U
1330-20-7	Total xylenes	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : UST007MW
Matrix : WATER
Date Sampled :11/ 3/94
Date Analyzed :11/16/94
Instrument ID : AD14

Anametrix ID : 9410248-06
Analyst : KL
Supervisor : NL
Dilution Factor : 200.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	200.	ND	U
74-87-3	Chloromethane	200.	ND	U
75-01-4	Vinyl chloride	100.	ND	U
74-83-9	Bromomethane	100.	ND	U
75-00-3	Chloroethane	100.	ND	U
75-69-4	Trichlorofluoromethane	100.	ND	U
75-35-4	1,1-Dichloroethene	100.	ND	U
75-09-2	Methylene chloride	200.	ND	U
156-60-5	trans-1,2-Dichloroethene	100.	ND	U
75-34-3	1,1-Dichloroethane	100.	ND	U
67-66-3	Chloroform	100.	ND	U
71-55-6	1,1,1-Trichloroethane	100.	ND	U
56-23-5	Carbon tetrachloride	100.	ND	U
107-06-2	1,2-Dichloroethane	100.	ND	U
79-01-6	Trichloroethene	100.	ND	U
78-87-5	1,2-Dichloropropane	100.	ND	U
75-27-4	Bromodichloromethane	100.	ND	U
110-75-8	2-Chloroethylvinylether	200.	ND	U
10061-01-5	cis-1,3-Dichloropropene	100.	ND	U
10061-02-6	trans-1,3-Dichloropropene	100.	ND	U
79-00-5	1,1,2-Trichloroethane	100.	ND	U
127-18-4	Tetrachloroethene	100.	ND	U
124-48-1	Dibromochloromethane	100.	ND	U
108-90-7	Chlorobenzene	100.	ND	U
75-25-2	Bromoform	100.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	100.	ND	U
541-73-1	1,3-Dichlorobenzene	100.	ND	U
106-46-7	1,4-Dichlorobenzene	100.	ND	U
95-50-1	1,2-Dichlorobenzene	100.	ND	U
74-95-3	Dibromomethane	100.	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	100.	ND	U
96-18-4	1,2,3-Trichlropropane	100.	ND	U
108-86-1	Bromobenzene	100.	ND	U
100-44-7	Benzyl chloride	100.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : UST007MW
Matrix : WATER
Date Sampled :11/ 3/94
Date Analyzed :11/16/94
Instrument ID : HP14

Anametrix ID : 9410248-06
Analyst : LL
Supervisor : [illegible]

Dilution Factor : 200.
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	100.	4600.	
108-88-3	Toluene	100.	2300.	
108-90-7	Chlorobenzene	100.	ND	U
100-41-4	Ethylbenzene	100.	240.	
1330-20-7	Total xylenes	100.	1300.	
541-73-1	1,3-Dichlorobenzene	100.	ND	U
106-46-7	1,4-Dichlorobenzene	100.	ND	U
95-50-1	1,2-Dichlorobenzene	100.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : UST008MW
Matrix : WATER
Date Sampled :11/ 3/94
Date Analyzed :11/10/94
Instrument ID : AD14

Anametrix ID : 9410248-08
Analyst : kk
Supervisor :

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	ND	U
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	ND	U
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U
74-95-3	Dibromomethane	.50	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	.50	ND	U
96-18-4	1,2,3-Trichlropropane	.50	ND	U
108-86-1	Bromobenzene	.50	ND	U
100-44-7	Benzyl chloride	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : UST008MW
Matrix : WATER
Date Sampled :11/ 3/94
Date Analyzed :11/10/94
Instrument ID : HP14

Anametrix ID : 9410248-08
Analyst : KK
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	.50	ND	U
108-88-3	Toluene	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
100-41-4	Ethylbenzene	.50	ND	U
1330-20-7	Total xylenes	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : UST009MW
Matrix : WATER
Date Sampled :11/ 3/94
Date Analyzed :11/10/94
Instrument ID : AD14

Anametrix ID : 9410248-07
Analyst :
Supervisor : LH KL

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	ND	U
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	ND	U
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U
74-95-3	Dibromomethane	.50	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	.50	ND	U
96-18-4	1,2,3-Trichlropropane	.50	ND	U
108-86-1	Bromobenzene	.50	ND	U
100-44-7	Benzyl chloride	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

Project ID : UTAH ANG
Sample ID : UST009MW
Matrix : WATER
Date Sampled :11/ 3/94
Date Analyzed :11/10/94
Instrument ID : HP14

Anametrix ID : 9410248-07
Analyst : tt
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	.50	ND	U
108-88-3	Toluene	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
100-41-4	Ethylbenzene	.50	ND	U
1330-20-7	Total xylenes	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : T.BLANK
Matrix : WATER
Date Sampled : 3/ 1/95
Date Analyzed : 3/10/95
Instrument ID : HP14

Anametrix ID : 9503015-04
Analyst :
Supervisor :

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	.50	ND	U
108-88-3	Toluene	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
100-41-4	Ethylbenzene	.50	ND	U
1330-20-7	Total xylenes	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : T.BLANK
Matrix : WATER
Date Sampled : 3/ 1/95
Date Analyzed : 3/10/95
Instrument ID : AD14

Anametrix ID : 9503015-04
Analyst : VT
Supervisor : DL

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	ND	U
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	ND	U
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U
74-95-3	Dibromomethane	.50	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	.50	ND	U
96-18-4	1,2,3-Trichloropropane	.50	ND	U
108-86-1	Bromobenzene	.50	ND	U
100-44-7	Benzyl chloride	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : F.BLANK
Matrix : WATER
Date Sampled : 3/ 1/95
Date Analyzed : 3/10/95
Instrument ID : AD14

Anametrix ID : 9503015-01
Analyst :
Supervisor :

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	16.	
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
67-66-3	Chloroform	.50	4.1	
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	ND	U
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U
74-95-3	Dibromomethane	.50	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	.50	ND	U
96-18-4	1,2,3-Trichloropropane	.50	ND	U
108-86-1	Bromobenzene	.50	ND	U
100-44-7	Benzyl chloride	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : F.BLANK
Matrix : WATER
Date Sampled : 3/ 1/95
Date Analyzed : 3/10/95
Instrument ID : HP14

Anametrix ID : 9503015-01
Analyst :
Supervisor :

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	.50	ND	U
108-88-3	Toluene	.50	2.1	
108-90-7	Chlorobenzene	.50	ND	U
100-41-4	Ethylbenzene	.50	ND	U
1330-20-7	Total xylenes	.50	1.4	
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : UST007MW
Matrix : WATER
Date Sampled : 3/ 1/95
Date Analyzed : 3/10/95
Instrument ID : AD14

Anametrix ID : 9503015-02
Analyst :
Supervisor :

Dilution Factor : 500.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	500.	ND	U
74-87-3	Chloromethane	500.	ND	U
75-01-4	Vinyl chloride	250.	ND	U
74-83-9	Bromomethane	250.	ND	U
75-00-3	Chloroethane	250.	ND	U
75-69-4	Trichlorofluoromethane	250.	ND	U
75-35-4	1,1-Dichloroethene	250.	ND	U
75-09-2	Methylene chloride	500.	ND	U
156-60-5	trans-1,2-Dichloroethene	250.	ND	U
75-34-3	1,1-Dichloroethane	250.	ND	U
67-66-3	Chloroform	250.	ND	U
71-55-6	1,1,1-Trichloroethane	250.	ND	U
56-23-5	Carbon tetrachloride	250.	ND	U
107-06-2	1,2-Dichloroethane	250.	ND	U
79-01-6	Trichloroethene	250.	ND	U
78-87-5	1,2-Dichloropropane	250.	ND	U
75-27-4	Bromodichloromethane	250.	ND	U
110-75-8	2-Chloroethylvinylether	500.	ND	U
10061-01-5	cis-1,3-Dichloropropene	250.	ND	U
10061-02-6	trans-1,3-Dichloropropene	250.	ND	U
79-00-5	1,1,2-Trichloroethane	250.	ND	U
127-18-4	Tetrachloroethene	250.	ND	U
124-48-1	Dibromochloromethane	250.	ND	U
108-90-7	Chlorobenzene	250.	ND	U
75-25-2	Bromoform	250.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	250.	ND	U
541-73-1	1,3-Dichlorobenzene	250.	ND	U
106-46-7	1,4-Dichlorobenzene	250.	ND	U
95-50-1	1,2-Dichlorobenzene	250.	ND	U
74-95-3	Dibromomethane	250.	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	250.	ND	U
96-18-4	1,2,3-Trichloropropane	250.	ND	U
108-86-1	Bromobenzene	250.	ND	U
100-44-7	Benzyl chloride	250.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : UST007MW
Matrix : WATER
Date Sampled : 3/ 1/95
Date Analyzed : 3/10/95
Instrument ID : HP14

Anametrix ID : 9503015-02
Analyst :
Supervisor :

Dilution Factor : 500.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	250.	11000.	
108-88-3	Toluene	250.	8300.	
108-90-7	Chlorobenzene	250.	ND	U
100-41-4	Ethylbenzene	250.	960.	
1330-20-7	Total xylenes	250.	5600.	
541-73-1	1,3-Dichlorobenzene	250.	ND	U
106-46-7	1,4-Dichlorobenzene	250.	ND	U
95-50-1	1,2-Dichlorobenzene	250.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : 007MWDUP
Matrix : WATER
Date Sampled : 3/ 1/95
Date Analyzed : 3/15/95
Instrument ID : AD14

Anametrix ID : 99503015-03
Analyst : KC
Supervisor : DL

Dilution Factor : 500.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	500.	ND	U
74-87-3	Chloromethane	500.	ND	U
75-01-4	Vinyl chloride	250.	ND	U
74-83-9	Bromomethane	250.	ND	U
75-00-3	Chloroethane	250.	ND	U
75-69-4	Trichlorofluoromethane	250.	ND	U
75-35-4	1,1-Dichloroethene	250.	ND	U
75-09-2	Methylene chloride	500.	ND	U
156-60-5	trans-1,2-Dichloroethene	250.	ND	U
75-34-3	1,1-Dichloroethane	250.	ND	U
67-66-3	Chloroform	250.	ND	U
71-55-6	1,1,1-Trichloroethane	250.	ND	U
56-23-5	Carbon tetrachloride	250.	ND	U
107-06-2	1,2-Dichloroethane	250.	ND	U
79-01-6	Trichloroethene	250.	ND	U
78-87-5	1,2-Dichloropropane	250.	ND	U
75-27-4	Bromodichloromethane	250.	ND	U
110-75-8	2-Chloroethylvinylether	500.	ND	U
10061-01-5	cis-1,3-Dichloropropene	250.	ND	U
10061-02-6	trans-1,3-Dichloropropene	250.	ND	U
79-00-5	1,1,2-Trichloroethane	250.	ND	U
127-18-4	Tetrachloroethene	250.	ND	U
124-48-1	Dibromochloromethane	250.	ND	U
108-90-7	Chlorobenzene	250.	ND	U
75-25-2	Bromoform	250.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	250.	ND	U
541-73-1	1,3-Dichlorobenzene	250.	ND	U
106-46-7	1,4-Dichlorobenzene	250.	ND	U
95-50-1	1,2-Dichlorobenzene	250.	ND	U
74-95-3	Dibromomethane	250.	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	250.	ND	U
96-18-4	1,2,3-Trichloropropane	250.	ND	U
108-86-1	Bromobenzene	250.	ND	U
100-44-7	Benzyl chloride	250.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : 007MWDUP
Matrix : WATER
Date Sampled : 3/ 1/95
Date Analyzed : 3/15/95
Instrument ID : HP14

Anametrix ID : 9503015-0
Analyst :
Supervisor :

Dilution Factor : 500.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	250.	13000.	
108-88-3	Toluene	250.	12000.	
108-90-7	Chlorobenzene	250.	ND	U
100-41-4	Ethylbenzene	250.	1200.	
1330-20-7	Total xylenes	250.	6900.	
541-73-1	1,3-Dichlorobenzene	250.	ND	U
106-46-7	1,4-Dichlorobenzene	250.	ND	U
95-50-1	1,2-Dichlorobenzene	250.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-1
Sample ID : VBLKB1
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Analyzed : 3/10/95
Instrument ID : AD14

Anametrix ID : BM1002I1
Analyst :
Supervisor :

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	ND	U
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	ND	U
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U
74-95-3	Dibromomethane	.50	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	.50	ND	U
96-18-4	1,2,3-Trichloropropane	.50	ND	U
108-86-1	Bromobenzene	.50	ND	U
100-44-7	Benzyl chloride	.50	ND	U

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

INCHCAPE TESTING SERVICES - ANAMETRIX

(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503015	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/17/95
Instrument ID:	HP4	Concentration Units:	ug/L

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503015-02	UST007MW	3/1/95	3/7/95	1000	50000	77000	109%

ND: Not detected at the reporting limit for the method.

TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030

Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

Reggie Dawson 3/22/95

Analyst Date

Supervisor Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : UST008MW
Matrix : WATER
Date Sampled : 3/ 2/95
Date Analyzed : 3/10/95
Instrument ID : AD14

Anametrix ID : 9503048-02
Analyst : tE
Supervisor : DH

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	ND	U
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	ND	U
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U
74-95-3	Dibromomethane	.50	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	.50	ND	U
96-18-4	1,2,3-Trichloropropane	.50	ND	U
108-86-1	Bromobenzene	.50	ND	U
100-44-7	Benzyl chloride	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

Project ID	: 1315-185	Anametrix ID	: 9503048-02
Sample ID	: UST008MW	Analyst	: KK
Matrix	: WATER	Supervisor	:
Date Sampled	: 3/ 2/95		
Date Analyzed	: 3/10/95	Dilution Factor	: 1.0
Instrument ID	: HP14	Conc. Units	: ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	.50	2.7	
108-88-3	Toluene	.50	6.9	
108-90-7	Chlorobenzene	.50	ND	U
100-41-4	Ethylbenzene	.50	.81	
1330-20-7	Total xylenes	.50	4.6	
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U

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ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : UST009MW
Matrix : WATER
Date Sampled : 3/ 2/95
Date Analyzed : 3/10/95
Instrument ID : AD14

Anametrix ID : 9503048-01
Analyst : KK
Supervisor : DL

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	ND	U
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	ND	U
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U
74-95-3	Dibromomethane	.50	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	.50	ND	U
96-18-4	1,2,3-Trichloropropane	.50	ND	U
108-86-1	Bromobenzene	.50	ND	U
100-44-7	Benzyl chloride	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : UST009MW
Matrix : WATER
Date Sampled : 3/ 2/95
Date Analyzed : 3/10/95
Instrument ID : HP14

Anametrix ID : 9503048-01
Analyst : KE
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	.50	8.4	
108-88-3	Toluene	.50	20.	
108-90-7	Chlorobenzene	.50	ND	U
100-41-4	Ethylbenzene	.50	2.2	
1330-20-7	Total xylenes	.50	12.	
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : TBLANK
Matrix : WATER
Date Sampled : 3/ 2/95
Date Analyzed : 3/11/95
Instrument ID : AD14

Anametrix ID : 9503048-05
Analyst : RE
Supervisor : JL

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	ND	U
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	ND	U
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U
74-95-3	Dibromomethane	.50	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	.50	ND	U
96-18-4	1,2,3-Trichloropropane	.50	ND	U
108-86-1	Bromobenzene	.50	ND	U
100-44-7	Benzyl chloride	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : TBLANK
Matrix : WATER
Date Sampled : 3/ 2/95
Date Analyzed : 3/11/95
Instrument ID : HP14

Anametrix ID : 9503048-05
Analyst : JL tc
Supervisor : JL

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	.50	ND	U
108-88-3	Toluene	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
100-41-4	Ethylbenzene	.50	ND	U
1330-20-7	Total xylenes	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : T.BLANK
Matrix : WATER
Date Sampled : 3/ 8/95
Date Analyzed : 3/15/95
Instrument ID : AD14

Anametrix ID : 9503048-06
Analyst : LE
Supervisor : DL

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	ND	U
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	ND	U
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U
74-95-3	Dibromomethane	.50	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	.50	ND	U
96-18-4	1,2,3-Trichloropropane	.50	ND	U
108-86-1	Bromobenzene	.50	ND	U
100-44-7	Benzyl chloride	.50	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : T.BLANK
Matrix : WATER
Date Sampled : 3/ 8/95
Date Analyzed : 3/15/95
Instrument ID : HP14

Anametrix ID : 9503048-0
Analyst : KK
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	.50	ND	U
108-88-3	Toluene	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
100-41-4	Ethylbenzene	.50	ND	U
1330-20-7	Total xylenes	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

INCHCAPE TESTING SERVICES - ANAMETRIX

(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503048	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/20/95
Instrument ID:	HP4	Concentration Units:	ug/L

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503048-02	UST008MW	3/2/95	3/7/95	1	50	80	109%

ND: Not detected at the reporting limit for the method.

TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030

Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

Analyst 3/22/95 Date

Supervisor 3/[illegible] Date

TOTAL PETROLEUM HYDROCARBONS AS DIESEL

INCHCAPE TESTING SERVICES - ANAMETRIX

(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503048	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/17/95
Date Extracted:	3/7/95	Concentration Units:	ug/L
Instrument ID:	HP19		

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503048-02	UST008MW	3/2/95	3/8/95	1	50	180	90%

ND: Not detected at the reporting limit for the method.

TPHd: Total Petroleum Hydrocarbons as C10-C28 is determined by GC/FID (modified EPA Method 8015) following sample extraction by EPA Method 3510.

Surrogate recovery quality control limits for o-terphenyl are 67-103%.

All testing procedures follow California Department of Health Services approved methods.

Doshi 3/20/95

Analyst Date

Cheryl Balmes 3/16/95

Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503048	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/20/95
Instrument ID:	HP4	Concentration Units:	ug/L

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503048-01	UST009MW	3/2/95	3/7/95	1	50	130	99%

ND: Not detected at the reporting limit for the method.
TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030
Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

Lucia Shen 3/22/95
Analyst Date

Cheryl Beimer 3/24/95
Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS DIESEL
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503048	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/17/95
Date Extracted:	3/7/95	Concentration Units:	ug/L
Instrument ID:	HP19		

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503048-01	UST009MW	3/2/95	3/8/95	1	50	170	93%

ND: Not detected at the reporting limit for the method.
TPHd: Total Petroleum Hydrocarbons as C10-C28 is determined by GC/FID (modified EPA Method 8015) following sample extraction by EPA Method 3510.
Surrogate recovery quality control limits for o-terphenyl are 67-103%.

All testing procedures follow California Department of Health Services approved methods.

Joshi 3/10/95
Analyst Date

Chuck Palmer 3/17/95
Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS DIESEL

INCHCAPE TESTING SERVICES - ANAMETRIX

(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503048	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/17/95
Date Extracted:	3/7/95	Concentration Units:	ug/L
Instrument ID:	HP19		

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
BM0711F9	Method Blank	-----	3/8/95	1	50	ND	93%

ND: Not detected at the reporting limit for the method.

TPHd: Total Petroleum Hydrocarbons as C10-C28 is determined by GC/FID (modified EPA Method 8015) following sample extraction by EPA Method 3510.

Surrogate recovery quality control limits for o-terphenyl are 67-103%.

All testing procedures follow California Department of Health Services approved methods.

Doshi 3/20/95

Analyst Date

Cheryl Balma 3/17/95

Supervisor Date

000030

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503048	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/20/95
Instrument ID:	HP4	Concentration Units:	ug/L

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503048-03	EQPBLANK	3/2/95	3/8/95	1	50	ND	118%

ND: Not detected at the reporting limit for the method.
TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030
Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

Lucia Shen 3/22/95
Analyst Date

Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS DIESEL

INCHCAPE TESTING SERVICES - ANAMETRIX

(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503048	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/17/95
Date Extracted:	3/7/95	Concentration Units:	ug/L
Instrument ID:	HP19		

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503048-03	EQPBLANK	3/2/95	3/8/95	1	50	ND	94%

ND: Not detected at the reporting limit for the method.

TPHd: Total Petroleum Hydrocarbons as C10-C28 is determined by GC/FID (modified EPA Method 8015) following sample extraction by EPA Method 3510.

Surrogate recovery quality control limits for o-terphenyl are 67-103%.

All testing procedures follow California Department of Health Services approved methods.

Doshi 3/20/95

Analyst Date

Cheryl Beckner 3/17/95

Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503048	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/20/95
Instrument ID:	HP4	Concentration Units:	ug/L

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503048-02 MS	UST008MW MS	3/2/95	3/7/95	1	50	500	117%

ND: Not detected at the reporting limit for the method.
TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030.
Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

Rebecca Stuck 3/22/95
Analyst Date

Cheryl Brenner 3/22/95
Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

INCHCAPE TESTING SERVICES - ANAMETRIX

(408) 432-8192

DATA SUMMARY FORM

Anametrix Workorder	9503048	Client Project ID:	1315-185
Matrix:	WATER	Date Released:	3/20/95
Instrument ID:	HP4	Concentration Units:	ug/L

Anametrix ID	Client ID	Date Sampled	Date Analyzed	Dilution Factor	Reporting Limit	Amount Found	Surrogate Recovery
9503048-02 MD	UST008MW MD	3/2/95	3/7/95	1	50	470	102%

ND: Not detected at the reporting limit for the method.
TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030.
Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

Analyst — Date

Supervisor — Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. RUSS CASON
OPERATIONAL TECHNOLOGIES CORP.
4100 N.W. LOOP 410, SUITE 230
SAN ANTONIO, TX 78229-4253

Workorder # : 9503048
Date Received : 03/03/95
Project ID : 1315-185
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9503048- 4	DRUMCOMP	SOIL	03/08/95	T8240
9503048- 4	DRUMCOMP	SOIL	03/08/95	T8270

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. RUSS CASON
OPERATIONAL TECHNOLOGIES CORP.
4100 N.W. LOOP 410, SUITE 230
SAN ANTONIO, TX 78229-4253

Workorder # : 9503048
Date Received : 03/03/95
Project ID : 1315-185
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

QA/QC SUMMARY :

- All holding times have been met for the analyses reported in this section.
- The sample matrix is reported as liquid and results are in ug/L to relect the nature of the extraction fluid that was analyzed by Method TCLP/8240, even though the true sample matrix is soil.
- Cyclohexane quantitiation in Method TCLP/8240 is based on a single-point calibration.

Denise Powell 3-23-95
Department Supervisor Date

Taghi Memarzadeh 3/23/95
Chemist Date

MATRIX SPIKE RECOVERY FORM --- EPA METHOD TCLP/8240
ANAMETRIX, INC. (408)432-8192

Project/Case	: 1513-185	Anametrix ID	: 9503048-04
Sample ID	: DRUMCOMP		
Matrix	: LIQUID	Analyst	: TM
Date Sampled	: 03/08/95	Supervisor	: BP
Date Analyzed	: 03/15/95	SDG/Batch	:
Instrument ID	: MSD6		

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	%REC LIMITS
Vinyl chloride	50	0	65	130	70-130
1,1-Dichloroethene	50	0	55	110	70-130
2-Butanone	50	0	52	104	70-130
Chloroform	50	0	53	105	70-130
Carbon tetrachloride	50	0	53	107	70-130
Benzene	50	0	51	101	70-130
1,2-Dichloroethane	50	0	52	104	70-130
Trichloroethene	50	0	51	102	70-130
Tetrachloroethene	50	0	50	101	70-130
Chlorobenzene	50	0	51	102	70-130
1,4-Dichlorobenzene	50	0	49	98	70-130

LABORATORY CONTROL SPIKE RECOVERY FORM --- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project/Case	:	Anametrix ID	: MM1501A2.D
Matrix	: WATER	Analyst	: TM
Date Sampled	:	Supervisor	: BP
Date Analyzed	: 15 Mar 95 5:07 pm	SDG/Batch	:
Instrument ID	: MSD6		
		Sample ID	: VLCSUA @ 50ug/L

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	%REC LIMITS
1,1-Dichloroethene	50	0	48	96	72-145
Benzene	50	0	50	100	83-125
Trichloroethene	50	0	49	97	61-140
Toluene	50	0	49	98	82-123
Chlorobenzene	50	0	49	98	82-125

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD TCLP/8240
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : DRUMCOMP
Matrix : LIQUID
Date Sampled : 3/ 8/95
Date Analyzed : 3/15/95
Instrument ID : MSD6

Anametrix ID : 9503048-04
Analyst : LY
Supervisor : BP

Dilution Factor : 5.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-01-4	Vinyl chloride	50.	ND	U
75-35-4	1,1-Dichloroethene	25.	ND	U
78-93-3	2-Butanone	100.	ND	U
67-66-3	Chloroform	25.	ND	U
56-23-5	Carbon tetrachloride	25.	ND	U
71-43-2	Benzene	25.	ND	U
107-06-2	1,2-Dichloroethane	25.	ND	U
79-01-6	Trichloroethene	25.	ND	U
108-88-3	Toluene	25.	33.	
127-18-4	Tetrachloroethene	25.	ND	U
108-90-7	Chlorobenzene	25.	ND	U
100-41-4	Ethylbenzene	25.	ND	U
1330-20-7	Xylene (Total)	25.	140.	
106-46-7	1,4-Dichlorobenzene	25.	ND	U

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. RUSS CASON
OPERATIONAL TECHNOLOGIES CORP.
4100 N.W. LOOP 410, SUITE 230
SAN ANTONIO, TX 78229-4253

Workorder # : 9503048
Date Received : 03/03/95
Project ID : 1315-185
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9503048- 4	DRUMCOMP	SOIL	03/08/95	T8240
9503048- 4	DRUMCOMP	SOIL	03/08/95	T8270

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. RUSS CASON
OPERATIONAL TECHNOLOGIES CORP.
4100 N.W. LOOP 410, SUITE 230
SAN ANTONIO, TX 78229-4253

Workorder # : 9503048
Date Received : 03/03/95
Project ID : 1315-185
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

QA/QC SUMMARY :

- All holding times have been met for the analyses reported in this section.
- In the spiked sample DRUMCOMPMS, the percent recoveries of spiking compounds 2,4,5-Trichlorophenol and 2,4,6-Trichlorophenol are outside established QC limits in the EPA Method 8270. The associated LCS has acceptable recoveries for all spiked compounds, so corrective action was not required.
- Sample DRUMCOMP has low recovery for surrogates 2-Fluorophenol, Phenol-d5 and 2,4,6-Tribromophenol. Sample DRUMCOMPMS has low recovery for surrogates 2-Fluorophenol and 2,4,6-Tribromophenol, but acceptable recovery for Phenol-d5 indicating a possible matrix effect.

Department Supervisor 3/21/95 Date

Chemist 3/21/95 Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD TCLP/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : DRUMCOMP
Matrix : LIQUID
Date Sampled : 3/ 8/95
Date Extracted : 3/14/95
Amount Extracted : 500.0 mL
Date Analyzed : 3/17/95
Instrument ID : MSD3

Anametrix ID : 9503048-04
Analyst : CA
Supervisor : DCS

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
106-46-7	1,4-Dichlorobenzene	20.	ND	U
95-48-7	2-Methylphenol	20.	ND	U
106-44-5	3+4-Methylphenol	20.	ND	U
67-72-1	Hexachloroethane	20.	ND	U
98-95-3	Nitrobenzene	20.	ND	U
87-68-3	Hexachlorobutadiene	20.	ND	U
88-06-2	2,4,6-Trichlorophenol	20.	ND	U
95-95-4	2,4,5-Trichlorophenol	100.	ND	U
121-14-2	2,4-Dinitrotoluene	20.	ND	U
118-74-1	Hexachlorobenzene	20.	ND	U
87-86-5	Pentachlorophenol	100.	ND	U
110-86-1	Pyridine	20.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD TCLP/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : DRUMCOMS
Matrix : LIQUID
Date Sampled : 3/ 8/95
Date Extracted : 3/14/95
Amount Extracted : 500.0 mL
Date Analyzed : 3/17/95
Instrument ID : MSD3

Anametrix ID : 9503048-04
Analyst : cd
Supervisor : PC

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
106-46-7	1,4-Dichlorobenzene	20.	75.	
95-48-7	2-Methylphenol	20.	86.	
106-44-5	3+4-Methylphenol	20.	130.	
67-72-1	Hexachloroethane	20.	78.	
98-95-3	Nitrobenzene	20.	84.	
87-68-3	Hexachlorobutadiene	20.	77.	
88-06-2	2,4,6-Trichlorophenol	20.	8.	J
95-95-4	2,4,5-Trichlorophenol	100.	20.	J
121-14-2	2,4-Dinitrotoluene	20.	98.	
118-74-1	Hexachlorobenzene	20.	80.	
87-86-5	Pentachlorophenol	100.	61.	J
110-86-1	Pyridine	20.	63.	

GC/MS - PAGE

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9410248
Matrix : SOIL
Date Sampled : 10/28/94
Date Extracted: 11/02/94

Project Number : UTAH ANG
Date Released : 11/14/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9410248-01	6BH-1-2	11/05/94	10	ND	86%
9410248-02	6BH-2-3	11/05/94	10	ND	81%
9410248-03	6BH-5-6	11/05/94	10	ND	79%
9410248-04	6BH-9-10	11/05/94	10	ND	81%
BN02H1F1	METHOD BLANK	11/05/94	10	ND	83%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for o-terphenyl are 55-129%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C10-C28 is determined by GCFID following sample extraction by EPA Method 3550.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

CR Patel 11/18/94
Analyst Date

Cheryl Brenner 11/18/94
Supervisor Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

oject ID : 1315-185
mple ID : EQPBLANK
trix : WATER
te Sampled : 3/ 2/95
te Analyzed : 3/10/95
strument ID : AD14

Anametrix ID : 9503048-03
Analyst : KK
Supervisor : DL

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Dichlorodifluoromethane	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Trichlorofluoromethane	.50	ND	U
75-35-4	1,1-Dichloroethene	.50	ND	U
75-09-2	Methylene chloride	1.0	15.	
156-60-5	trans-1,2-Dichloroethene	.50	ND	U
75-34-3	1,1-Dichloroethane	.50	ND	U
67-66-3	Chloroform	.50	3.4	
71-55-6	1,1,1-Trichloroethane	.50	ND	U
56-23-5	Carbon tetrachloride	.50	ND	U
107-06-2	1,2-Dichloroethane	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-Dichloropropane	.50	ND	U
75-27-4	Bromodichloromethane	.50	ND	U
110-75-8	2-Chloroethylvinylether	1.0	ND	U
10061-01-5	cis-1,3-Dichloropropene	.50	ND	U
10061-02-6	trans-1,3-Dichloropropene	.50	ND	U
79-00-5	1,1,2-Trichloroethane	.50	ND	U
127-18-4	Tetrachloroethene	.50	ND	U
124-48-1	Dibromochloromethane	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	.50	ND	U
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U
74-95-3	Dibromomethane	.50	ND	U
630-20-6	1,1,1,2-Tetrachloroethane	.50	ND	U
96-18-4	1,2,3-Trichloropropane	.50	ND	U
108-86-1	Bromobenzene	.50	ND	U
100-44-7	Benzyl chloride			

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8020
ANAMETRIX, INC. (408)432-8192

oject ID : 1315-185
mple ID : EQPBLANK
trix : WATER
te Sampled : 3/ 2/95
te Analyzed : 3/10/95
strument ID : HP14

Anametrix ID : 9503048-03
Analyst : KC
Supervisor : DL

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
71-43-2	Benzene	.50	ND	U
108-88-3	Toluene	.50	1.8	
108-90-7	Chlorobenzene	.50	ND	U
100-41-4	Ethylbenzene	.50	ND	U
1330-20-7	Total xylenes	.50	1.3	
541-73-1	1,3-Dichlorobenzene	.50	ND	U
106-46-7	1,4-Dichlorobenzene	.50	ND	U
95-50-1	1,2-Dichlorobenzene	.50	ND	U

GC/VOA - PAGE 17

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9410248
Matrix : WATER
Date Sampled : 11/03/94
Date Extracted: 11/07/94

Project Number : UTAH ANG
Date Released : 11/15/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)	Surrogate %Rec
9410248-06	UST007MW	11/08/94	50	1400	86%
9410248-07	UST009MW	11/08/94	50	190	84%
9410248-08	UST008MW	11/08/94	50	55	88%
9410248-09	E.BLANK2	11/08/94	50	ND	89%
9410248-10	DECWATER	11/08/94	50	ND	82%
9410248-11	F.BLANK	11/08/94	50	ND	92%
BN0711F9	METHOD BLANK	11/07/94	50	ND	83%

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
The surrogate recovery limits for o-terphenyl are 47-114%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C10-C28 is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

C Patel 11/15/94
Analyst Date

Cheryl Balmer 11/18/94
Supervisor Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD TCLP/8240
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : DRUMCOMP
Matrix : LIQUID
Date Sampled : 3/ 8/95
Date Analyzed : 3/15/95
Instrument ID : MSD6

Anametrix ID : 9503048-04
Analyst : M
Supervisor : BP

Dilution Factor : 5.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-01-4	Vinyl chloride	50.	ND	U
75-35-4	1,1-Dichloroethene	25.	ND	U
78-93-3	2-Butanone	100.	ND	U
67-66-3	Chloroform	25.	ND	U
56-23-5	Carbon tetrachloride	25.	ND	U
71-43-2	Benzene	25.	ND	U
107-06-2	1,2-Dichloroethane	25.	ND	U
79-01-6	Trichloroethene	25.	ND	U
108-88-3	Toluene	25.	33.	
127-18-4	Tetrachloroethene	25.	ND	U
108-90-7	Chlorobenzene	25.	ND	U
100-41-4	Ethylbenzene	25.	ND	U
1330-20-7	Xylene (Total)	25.	140.	
106-46-7	1,4-Dichlorobenzene	25.	ND	U

Soil TCLP Sampling
3-8-95

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD TCLP/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 1315-185
Sample ID : DRUMCOMP
Matrix : LIQUID
Date Sampled : 3/ 8/95
Date Extracted : 3/14/95
Amount Extracted : 500.0 mL
Date Analyzed : 3/17/95
Instrument ID : MSD3

Anametrix ID : 9503048-04
Analyst : CA
Supervisor : DCS

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
106-46-7	1,4-Dichlorobenzene	20.	ND	U
95-48-7	2-Methylphenol	20.	ND	U
106-44-5	3+4-Methylphenol	20.	ND	U
67-72-1	Hexachloroethane	20.	ND	U
98-95-3	Nitrobenzene	20.	ND	U
87-68-3	Hexachlorobutadiene	20.	ND	U
88-06-2	2,4,6-Trichlorophenol	20.	ND	U
95-95-4	2,4,5-Trichlorophenol	100.	ND	U
121-14-2	2,4-Dinitrotoluene	20.	ND	U
118-74-1	Hexachlorobenzene	20.	ND	U
87-86-5	Pentachlorophenol	100.	ND	U
110-86-1	Pyridine	20.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD TCLP/8240
ANAMETRIX, INC. (408)432-8192

TENTATIVELY IDENTIFIED COMPOUNDS

Project ID : 1315-185
Sample ID : DRUMCOMP
Matrix : LIQUID
Date Sampled : 3/ 8/95
Date Analyzed : 3/15/95
Instrument ID : MSD6

Anametrix ID : 9503048-04
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 5.0
Conc. Units : ug/L

	CAS NUMBER	COMPOUND NAME	REPORTING LIMIT	ESTIMATED CONC.	Q
1.	110-82-7	Cyclohexane	0.	40.	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

APPENDIX G.2

This section of Appendix G contains the soil, groundwater, and drum sampling confirmation analytical results for Phase 2 SSI activities. Complete data packages are available upon request.

Mountain States Analytical

The Quality Solution

November 8, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: UNAB SSI/CAP
Project No.: 1315-185
MSAI Group: 10121

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

UST-011GP 4-6' (HOLD)	UST-011GP 11-13' (HOLD)
UST-013GP 6-8' (HOLD)	UST-013GP 13-15' (HOLD)
UST-013GPW 11'	UST-013GPW 16'
UST-014GPW 8'	UST-014GPW 16'
UST-014GP 4-6' (HOLD)	UST-014GP 11-13' (HOLD)
UST-014GP 6-8'	

All holding times were met for the tests performed on these samples except:

Sample - (Sample Date) Test Description	Expiration Date	Date Analyzed	Days Past Holding Time
UST-014GP 6-8' - (10/19/95) Purgeable Aromatics/Halocarbons	11/02/95	11/04/95	2

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino
Project Manager

Analytical Report

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

Sample ID: UST-013GPW 11'
Matrix: Waste Water

MSAI Sample: 40916
MSAI Group: 10121
Date Reported: 11/08/95

Discard Date: 12/08/95
Date Submitted: 10/19/95
Date Sampled: 10/19/95
Collected by:
Purchase Order:
Project No.: 1315-185

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	2.0	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	1.5	ug/l	1.0
	trans-1,2-Dichloroethene	1.5	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	6.4	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	17.1	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40916
MSAI Group: 10121

Sample ID: UST-013GPW 11'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40918
MSAI Group: 10121
Date Reported: 11/08/95

Discard Date: 12/08/95
Date Submitted: 10/19/95
Date Sampled: 10/19/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: **UST-014GPW 8'**
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	43.5	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	1.1	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

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Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40918
MSAI Group: 10121

Sample ID: UST-014GPW 8'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	4.1	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	6.0	mg/l	(1) 1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

(1) Calibration Standard: Gasoline.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMB ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40931
MSAI Group: 10121
Date Reported: 11/08/95

Discard Date: 12/08/95
Date Submitted: 10/19/95
Date Sampled: 10/19/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: UST-014GP 6-8'
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	782	mg/kg	(1) 400
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	ND	ug/kg	20
	Bromoform	ND	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	ND	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	ND	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	109	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	40
	1,1,2,2-Tetrachloroethane	ND	ug/kg	20
	Tetrachloroethene	ND	ug/kg	20
	Toluene	41	ug/kg	20
	1,1,1-Trichloroethane	ND	ug/kg	20

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

Sample ID: UST-014GP 6-8'

MSAI Sample: 40931
MSAI Group: 10121

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	ND	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	303	ug/kg	20
		ND	ug/kg	1.0
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete	mg/kg	
3330	Purgeable Aromatics/Halocarbons Method: SW-846 5030	Complete	ug/kg	

(1) Calibration Standard: 10W-40.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Kyle Gregory Covino
Project Manager

MEMBER ACIL

Analytical Report

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

Sample ID: UST-014GPW 16'
Matrix: Waste Water

MSAI Sample: 40919
MSAI Group: 10121
Date Reported: 11/08/95

Discard Date: 12/08/95
Date Submitted: 10/19/95
Date Sampled: 10/19/95
Collected by:
Purchase Order:
Project No.: 1315-185

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	1.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	3.0
	1,1-Dichloroethene	3.4	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	1.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	2.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	2.9	ug/l	1.0

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Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40919
MSAI Group: 10121

Sample ID: UST-014GPW 16'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40917
MSAI Group: 10121
Date Reported: 11/08/95

Discard Date: 12/08/95
Date Submitted: 10/19/95
Date Sampled: 10/19/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: UST-013GPW 16'
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	1.5	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	1.3	ug/l	1.0
	trans-1,2-Dichloroethene	1.9	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	23.2	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	10.4	ug/l	1.0

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40917
MSAI Group: 10121

Sample ID: UST-013GPW 16'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical

The Quality Solution

November 9, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: UNAB SSI/CAP
Project No.: 1315-185
MSAI Group: 10142

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

UST-018GP 4-6'		UST-018GP 6-8'	(HOLD)
UST-021GP 4-6'	(HOLD)	UST-021GP 6-8'	(HOLD)
UST-009GP 4-6'		UST-009GP 6-8'	(HOLD)
UST-009GP 11-13'	(HOLD)	UST-018GPW 8'	
UST-018GPW 16'	(HOLD)		

All holding times were met for the tests performed on these samples except:

Sample - (Sample Date) Test Description	Expiration Date	Date Analyzed	Days Past Holding Time
UST-018GP 4-6' - (10/20/95) Purgeable Aromatics/Halocarbons	11/03/95	11/04/95	1
UST-009GP 4-6' - (10/20/95) Purgeable Aromatics/Halocarbons	11/03/95	11/04/95	1

If the report is acceptable, please approve the enclosed invoice

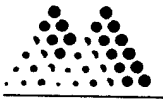
and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino
Project Manager



Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

Sample ID: UST-018GP 4-6'
Matrix: Soil

MSAI Sample: 40989
MSAI Group: 10142
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/20/95
Date Sampled: 10/20/95
Collected by:
Purchase Order:
Project No.: 1315-185

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/kg	10
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	ND	ug/kg	20
	Bromoform	ND	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	ND	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	ND	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	20
	1,1,2,2-Tetrachloroethane	ND	ug/kg	40
	Tetrachloroethene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	1,1,1-Trichloroethane	ND	ug/kg	20

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40989
MSAI Group: 10142

Sample ID: UST-018GP 4-6'

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	ND	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	ND	ug/kg	20
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete	mg/kg	
3330	Purgeable Aromatics/Halocarbons Method: SW-846 5030	Complete	ug/kg	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40993
MSAI Group: 10142
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/20/95
Date Sampled: 10/20/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: UST-009GP 4-6'
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total	ND	mg/kg	10
	Method: SW-846 8015 MOD			
6722	Purgeable Aromatics/Halocarbons			
	Method: SW-846 8010/8020			
	Benzene	ND	ug/kg	20
	Bromoform	ND	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	ND	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	ND	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	40
	1,1,2,2-Tetrachloroethane	ND	ug/kg	20
	Tetrachloroethene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	1,1,1-Trichloroethane	ND	ug/kg	20

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40993
MSAI Group: 10142

Sample ID: UST-009GP 4-6'

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	ND	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	ND	ug/kg	20
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete	mg/kg	
3330	Purgeable Aromatics/Halocarbons Method: SW-846 5030	Complete	ug/kg	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40996
MSAI Group: 10142
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/20/95
Date Sampled: 10/20/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: UST-018GPW 8'
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	1.1	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40996
MSAI Group: 10142

Sample ID: UST-018GPW 8'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical

The Quality Solution

November 8, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: UNAB SSI/CAP
Project No.: 1315-185
MSAI Group: 10120

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following sample is included in the report.

UST-013GP 4-6' ✓

All holding times were met for the tests performed on these samples.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40909
MSAI Group: 10120
Date Reported: 11/08/95

Discard Date: 12/08/95
Date Submitted: 10/19/95
Date Sampled: 10/19/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: UST-013GP 4-6'
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/kg	10
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	ND	ug/kg	20
	Bromoform	ND	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	ND	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	ND	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	40
	1,1,2,2-Tetrachloroethane	ND	ug/kg	20
	Tetrachloroethene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	1,1,1-Trichloroethane	ND	ug/kg	20

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40909
MSAI Group: 10120

Sample ID: UST-013GP 4-6'

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	ND	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	ND	ug/kg	20
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete	mg/kg	
3330	Purgeable Aromatics/Halocarbons Method: SW-846 5030	Complete	ug/kg	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

1645 West 2200 South, Salt Lake City, Utah 84119-1456 (801) 973-0050 1-800-973-MSAI FAX (801) 972-6278

MEMBER ACIL

Mountain States Analytical

The Quality Solution

November 8, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: UANB SSI/CAP
Project No.: 1315-185
MSAI Group: 10063

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

UST-010GPW 8' (HOLD)	UST-010GPW 16' (HOLD)
UST-019GPW 16' (HOLD)	UST-010GP 4-6' (HOLD)
UST-010GP 6-8' (HOLD)	UST-010GP 11-13' (HOLD)
UST-020GP 4-6' ✓	UST-020GP 6-8' (HOLD)
UST-020GP 11-13' (HOLD)	UST-019GP 4-6' (HOLD)
UST-019GP 6-8' ✓	UST-019GP 11-13' (HOLD)

All holding times were met for the tests performed on these samples except:

Sample - (Sample Date) Test Description	Expiration Date	Date Analyzed	Days Past Holding Time
UST-019GP 6-8' - (10/17/95) Petroleum Hydrocarbons, Total	10/31/95	11/01/95	1

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UANB SSI/CAP

MSAI Sample: 40670
MSAI Group: 10063
Date Reported: 11/02/95

Discard Date: 12/02/95
Date Submitted: 10/17/95
Date Sampled: 10/17/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-020GP 4-6'
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	U	mg/kg	10
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	U	mg/kg	10
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	U	ug/kg	20
	Bromoform	U	ug/kg	20
	Bromomethane	U	ug/kg	20
	Carbon tetrachloride	U	ug/kg	20
	Chlorobenzene	U	ug/kg	20
	Chloroethane	U	ug/kg	20
	2-Chloroethyl Vinyl Ether	U	ug/kg	20
	Chloroform	U	ug/kg	20
	Chloromethane	U	ug/kg	20
	Dibromochloromethane	U	ug/kg	20
	1,2-Dichlorobenzene	U	ug/kg	20
	1,3-Dichlorobenzene	U	ug/kg	20
	1,4-Dichlorobenzene	U	ug/kg	20
	Bromodichloromethane	U	ug/kg	20
	1,1-Dichloroethene	U	ug/kg	20
	1,2-Dichloroethene (total)	U	ug/kg	20
	1,1-Dichloroethane	U	ug/kg	20
	trans-1,2-Dichloroethene	U	ug/kg	20
	1,2-Dichloropropane	U	ug/kg	20
	cis-1,3-Dichloropropene	U	ug/kg	20
	trans-1,3-Dichloropropene	U	ug/kg	20
	Ethylbenzene	U	ug/kg	20
	Methylene chloride (Dichloromethane	U	ug/kg	40
	1,1,2,2-Tetrachloroethane	U	ug/kg	20

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

Sample ID: UST-020GP 4-6'

MSAI Sample: 40670
MSAI Group: 10063

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Tetrachloroethene	U	ug/kg	20
	Toluene	U	ug/kg	20
	1,1,1-Trichloroethane	U	ug/kg	20
	1,1,2-Trichloroethane	U	ug/kg	20
	Trichloroethene	U	ug/kg	20
	Trichlorofluoromethane	U	ug/kg	20
	Vinyl chloride	U	ug/kg	20
	p-Xylene	U	ug/kg	20
	m-Xylene	U	ug/kg	20
	o-Xylene	U	ug/kg	20
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete	mg/kg	
3330	Purgeable Aromatics/Halocarbons Method: SW-846 5030	Complete	ug/kg	

U - Not detected at the limit of detection
J - Detected, but below limit of quantitation.

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UANB SSI/CAP

MSAI Sample: 40674
MSAI Group: 10063
Date Reported: 11/02/95

Discard Date: 12/02/95
Date Submitted: 10/17/95
Date Sampled: 10/17/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-019GP 6-8'
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation	
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	268	mg/kg	(1)	10
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	103	mg/kg	(2)	10
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020				
	Benzene	3,120	ug/kg		500
	Bromoform	U	ug/kg		1.0
	Bromomethane	U	ug/kg		1.0
	Carbon tetrachloride	U	ug/kg		1.0
	Chlorobenzene	U	ug/kg		1.0
	Chloroethane	U	ug/kg		1.0
	2-Chloroethyl Vinyl Ether	U	ug/kg		1.0
	Chloroform	U	ug/kg		1.0
	Chloromethane	U	ug/kg		1.0
	Dibromochloromethane	U	ug/kg		1.0
	1,2-Dichlorobenzene	U	ug/kg		1.0
	1,3-Dichlorobenzene	U	ug/kg		1.0
	1,4-Dichlorobenzene	1,500	ug/kg		500
	Bromodichloromethane	U	ug/kg		1.0
	1,1-Dichloroethene	U	ug/kg		1.0
	1,2-Dichloroethene (total)	U	ug/kg		1.0
	1,1-Dichloroethane	U	ug/kg		1.0
	trans-1,2-Dichloroethene	U	ug/kg		1.0
	1,2-Dichloropropane	U	ug/kg		1.0
	cis-1,3-Dichloropropene	U	ug/kg		1.0
	trans-1,3-Dichloropropene	U	ug/kg		1.0
	Ethylbenzene	3,020	ug/kg		500
	Methylene chloride (Dichloromethane	U	ug/kg		2.0
	1,1,2,2-Tetrachloroethane	U	ug/kg		1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

Sample ID: UST-019GP 6-8'

MSAI Sample: 40674
MSAI Group: 10063

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Tetrachloroethene	U	ug/kg	1.0
	Toluene	9,440	ug/kg	500
	1,1,1-Trichloroethane	U	ug/kg	1.0
	1,1,2-Trichloroethane	U	ug/kg	1.0
	Trichloroethene	U	ug/kg	1.0
	Trichlorofluoromethane	U	ug/kg	1.0
	Vinyl chloride	U	ug/kg	1.0
	p-Xylene	6,210	ug/kg	500
	m-Xylene	6,210	ug/kg	500
	o-Xylene	4,850	ug/kg	500
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete	mg/kg	
3330	Purgeable Aromatics/Halocarbons Method: SW-846 5030	Complete	ug/kg	

(1) Calibration Standard: Gasoline.
(2) Calibration Standard: Gasoline.

U - Not detected at the limit of detection
J - Detected, but below limit of quantitation.

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical

The Quality Solution

November 8, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: UANB SSI/CAP
Project No.: 1315-185
MSAI Group: 10085

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

UST-015GP 4-6' (HOLD)	UST-015GP 6-8' (HOLD)
UST-015GP 11-13' (HOLD)	UST-016GP 4-6' (HOLD)
UST-016GP 6-8' (HOLD)	UST-016GP 11-13' (HOLD)
UST-017GP 4-6' ✓	UST-017GP 6-8' (HOLD)
UST-017GP 11-13' (HOLD)	UST-012GP 4-6' (HOLD)
UST-012GP 6-8' (HOLD)	UST-012GP 11-13' (HOLD)
UST-016GPW 8' (HOLD)	UST-016GPW 16' (HOLD)
UST-012GPW 8' (HOLD)	UST-012GPW 16' (HOLD)

All holding times were met for the tests performed on these samples except:

Sample - (Sample Date) Test Description	Expiration Date	Date Analyzed	Days Past Holding Time
UST-017GP 4-6' - (10/18/95)			
Purgeable Aromatics/Halocarbons	10/30/95	10/31/95	1
Purgeable Aromatics/Halocarbons	11/01/95	11/04/95	3

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UANB SSI/CAP

MSAI Sample: 40812
MSAI Group: 10085
Date Reported: 11/08/95

Discard Date: 12/08/95
Date Submitted: 10/18/95
Date Sampled: 10/18/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-017GP 4-6'
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/kg	10
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	ND	ug/kg	1.0
	Bromoform	ND	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	ND	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	ND	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	40
	1,1,2,2-Tetrachloroethane	ND	ug/kg	20
	Tetrachloroethene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	1,1,1-Trichloroethane	ND	ug/kg	20

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The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40812
MSAI Group: 10085

Sample ID: UST-017GP 4-6'

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	ND	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	ND	ug/kg	1.0
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete	mg/kg	
3330	Purgeable Aromatics/Halocarbons Method: SW-846 5030	Complete	ug/kg	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical

The Quality Solution

November 8, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: UNAB SSI/CAP
Project No.: 1315-185
MSAI Group: 10119

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

Trip Blank	UST-1608-1-FB	UST-1608-1-EB
UST-011GPW 8'	UST-011GPW 16'	Trip Blank

All holding times were met for the tests performed on these samples.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40906
MSAI Group: 10119
Date Reported: 11/08/95

Discard Date: 12/08/95
Date Submitted: 10/19/95
Date Sampled: 10/19/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: Trip Blank
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	1.0
	1,1-Dichloroethane	ND	ug/l	3.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	1.0
	1,2-Dichloropropane	ND	ug/l	2.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40906
MSAI Group: 10119

Sample ID: Trip Blank

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40907
MSAI Group: 10119
Date Reported: 11/08/95

Discard Date: 12/08/95
Date Submitted: 10/19/95
Date Sampled: 10/19/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: UST-1608-1-FB
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
8078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40907
MSAI Group: 10119

Sample ID: UST-1608-1-FB

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40908
MSAI Group: 10119
Date Reported: 11/08/95

Discard Date: 12/08/95
Date Submitted: 10/19/95
Date Sampled: 10/19/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: UST-1608-1-EB
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

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The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40908
MSAI Group: 10119

Sample ID: UST-1608-1-EB

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	2.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40928
MSAI Group: 10119
Date Reported: 11/08/95

Discard Date: 12/08/95
Date Submitted: 10/19/95
Date Sampled: 10/19/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: Trip Blank
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40928
MSAI Group: 10119

Sample ID: Trip Blank

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical

The Quality Solution

November 8, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: UANB SSI/CAP
Project No.: 1315-185
MSAI Group: 10062

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

UST-020GPW 8'
UST-020GPW 16'✓
Trip Blank ✓

All holding times were met for the tests performed on these samples except:

Sample - (Sample Date) Test Description	Expiration Date	Date Analyzed	Days Past Holding Time
UST-020GPW 8' - (10/17/95) Petroleum Hydrocarbons, Total	10/31/95	11/01/95	1
UST-020GPW 16' - (10/17/95) Petroleum Hydrocarbons, Total	10/31/95	11/01/95	1

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UANB SSI/CAP

MSAI Sample: 40661
MSAI Group: 10062
Date Reported: 11/07/95

Discard Date: 12/07/95
Date Submitted: 10/17/95
Date Sampled: 10/17/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-020GPW 8'
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	U	ug/l	1.0
	Bromodichloromethane	U	ug/l	1.0
	Bromoform	U	ug/l	1.0
	Bromomethane	U	ug/l	1.0
	Carbon tetrachloride	U	ug/l	1.0
	Chlorobenzene	U	ug/l	1.0
	Chloroethane	U	ug/l	1.0
	2-Chloroethyl Vinyl Ether	U	ug/l	1.0
	Chloroform	U	ug/l	1.0
	Chloromethane	U	ug/l	1.0
	Dibromochloromethane	U	ug/l	1.0
	1,2-Dichlorobenzene	U	ug/l	1.0
	1,3-Dichlorobenzene	U	ug/l	1.0
	1,4-Dichlorobenzene	U	ug/l	1.0
	Dichlorodifluoromethane	U	ug/l	3.0
	1,1-Dichloroethane	U	ug/l	1.0
	1,2-Dichloroethane	U	ug/l	1.0
	1,1-Dichloroethene	U	ug/l	1.0
	trans-1,2-Dichloroethene	U	ug/l	1.0
	Methylene chloride (Dichloromethane	U	ug/l	2.0
	1,2-Dichloropropane	U	ug/l	1.0
	cis-1,3-Dichloropropene	U	ug/l	1.0
	trans-1,3-Dichloropropene	U	ug/l	1.0
	Ethylbenzene	U	ug/l	1.0
	1,1,2,2-Tetrachloroethane	U	ug/l	1.0
	Tetrachloroethene	6.5	ug/l	1.0
	Toluene	U	ug/l	1.0
	1,1,1-Trichloroethane	U	ug/l	1.0
	1,1,2-Trichloroethane	U	ug/l	1.0
	Trichloroethene	7.5	ug/l	1.0

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Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40661
MSAI Group: 10062

Sample ID: UST-020GPW 8'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	U	ug/l	1.0
	Vinyl chloride	U	ug/l	1.0
	Xylenes (total)	U	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	U	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

U - Not detected at the limit of detection

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UANB SSI/CAP

MSAI Sample: 40662
MSAI Group: 10062
Date Reported: 11/07/95

Discard Date: 12/07/95
Date Submitted: 10/17/95
Date Sampled: 10/17/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-020GPW 16'
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	U	ug/l	1.0
	Bromodichloromethane	U	ug/l	1.0
	Bromoform	U	ug/l	1.0
	Bromomethane	U	ug/l	1.0
	Carbon tetrachloride	U	ug/l	1.0
	Chlorobenzene	U	ug/l	1.0
	Chloroethane	U	ug/l	1.0
	2-Chloroethyl Vinyl Ether	U	ug/l	1.0
	Chloroform	U	ug/l	1.0
	Chloromethane	U	ug/l	1.0
	Dibromochloromethane	U	ug/l	1.0
	1,2-Dichlorobenzene	U	ug/l	1.0
	1,3-Dichlorobenzene	U	ug/l	1.0
	1,4-Dichlorobenzene	U	ug/l	1.0
	Dichlorodifluoromethane	U	ug/l	3.0
	1,1-Dichloroethane	U	ug/l	1.0
	1,2-Dichloroethane	U	ug/l	1.0
	1,1-Dichloroethene	U	ug/l	1.0
	trans-1,2-Dichloroethene	U	ug/l	1.0
	Methylene chloride (Dichloromethane	U	ug/l	2.0
	1,2-Dichloropropane	1.3	ug/l	1.0
	cis-1,3-Dichloropropene	U	ug/l	1.0
	trans-1,3-Dichloropropene	U	ug/l	1.0
	Ethylbenzene	U	ug/l	1.0
	1,1,2,2-Tetrachloroethane	U	ug/l	1.0
	Tetrachloroethene	13.4	ug/l	1.0
	Toluene	U	ug/l	1.0
	1,1,1-Trichloroethane	U	ug/l	1.0
	1,1,2-Trichloroethane	U	ug/l	1.0
	Trichloroethene	11.2	ug/l	1.0

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Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40662
MSAI Group: 10062

Sample ID: UST-020GPW 16'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	U	ug/l	1.0
	Vinyl chloride	U	ug/l	1.0
	Xylenes (total)	U	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	U	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

U - Not detected at the limit of detection

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

1645 West 2200 South, Salt Lake City, Utah 84119-1456 (801) 973-0050 1-800-973-MSAI FAX (801) 972-6278

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UANB SSI/CAP

MSAI Sample: 40663
MSAI Group: 10062
Date Reported: 11/07/95

Discard Date: 12/07/95
Date Submitted: 10/17/95
Date Sampled: 10/17/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: Trip Blank
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	U	ug/l	1.0
	Bromodichloromethane	U	ug/l	1.0
	Bromoform	U	ug/l	1.0
	Bromomethane	U	ug/l	1.0
	Carbon tetrachloride	U	ug/l	1.0
	Chlorobenzene	U	ug/l	1.0
	Chloroethane	U	ug/l	1.0
	2-Chloroethyl Vinyl Ether	U	ug/l	1.0
	Chloroform	U	ug/l	1.0
	Chloromethane	U	ug/l	1.0
	Dibromochloromethane	U	ug/l	1.0
	1,2-Dichlorobenzene	U	ug/l	1.0
	1,3-Dichlorobenzene	U	ug/l	1.0
	1,4-Dichlorobenzene	U	ug/l	1.0
	Dichlorodifluoromethane	U	ug/l	1.0
	1,1-Dichloroethane	U	ug/l	3.0
	1,2-Dichloroethane	U	ug/l	1.0
	1,1-Dichloroethene	U	ug/l	1.0
	trans-1,2-Dichloroethene	U	ug/l	1.0
	Methylene chloride (Dichloromethane	U	ug/l	1.0
	1,2-Dichloropropane	U	ug/l	2.0
	cis-1,3-Dichloropropene	U	ug/l	1.0
	trans-1,3-Dichloropropene	U	ug/l	1.0
	Ethylbenzene	U	ug/l	1.0
	1,1,2,2-Tetrachloroethane	U	ug/l	1.0
	Tetrachloroethene	U	ug/l	1.0
	Toluene	U	ug/l	1.0
	1,1,1-Trichloroethane	U	ug/l	1.0
	1,1,2-Trichloroethane	U	ug/l	1.0
	Trichloroethene	U	ug/l	1.0

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The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40663
MSAI Group: 10062

Sample ID: Trip Blank

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons			
	Method: SW-846 8010A/8020			
	Trichlorofluoromethane	U	ug/l	1.0
	Vinyl chloride	U	ug/l	1.0
	Xylenes (total)	U	ug/l	1.0

U - Not detected at the limit of detection

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

1645 West 2200 South, Salt Lake City, Utah 84119-1456 (801) 973-0050 1-800-973-MSAI FAX (801) 972-6278

MEMBER ACIL

Mountain States Analytical

The Quality Solution

November 6, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: UANB SSI/CAP
Project No.: 1315-185
MSAI Group: 10082

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

Trip Blank ✓	UST-015GPW 8' ✓	UST-017GPW 8' ✓
UST-017GPW 16' ✓	UST-1608-1-DUP ✓	Trip Blank ✓

All holding times were met for the tests performed on these samples.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino

Lyle Gregory Covino
Project Manager

[illegible] 505-873-4171, FAX 505-872-4275

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UANB SSI/CAP

MSAI Sample: 40780
MSAI Group: 10082
Date Reported: 11/06/95

Discard Date: 12/06/95
Date Submitted: 10/18/95
Date Sampled: 10/18/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: Trip Blank
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40780
MSAI Group: 10082

Sample ID: Trip Blank

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UANB SSI/CAP

MSAI Sample: 40781
MSAI Group: 10082
Date Reported: 11/06/95

Discard Date: 12/06/95
Date Submitted: 10/18/95
Date Sampled: 10/18/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: **UST-015GPW 8'**
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	5.3	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	1.8	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	16.4	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	2.4	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	69	ug/l	10
	Toluene	4.5	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	40	ug/l	10

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40781
MSAI Group: 10082

Sample ID: UST-015GPW 8'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	2.1	ug/l	1.0
	Xylenes (total)	16.3	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Kyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UANB SSI/CAP

MSAI Sample: 40782
MSAI Group: 10082
Date Reported: 11/06/95

Discard Date: 12/06/95
Date Submitted: 10/18/95
Date Sampled: 10/18/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-017GPW 8'
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	4.2	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	21.3	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	5.9	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	2.0	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	9.4	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	2.0	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40782
MSAI Group: 10082

Sample ID: UST-017GPW 8'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	2.1	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UANB SSI/CAP

MSAI Sample: 40783
MSAI Group: 10082
Date Reported: 11/06/95

Discard Date: 12/06/95
Date Submitted: 10/18/95
Date Sampled: 10/18/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-017GPW 16'
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	46.1	ug/l	5.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	2.1	ug/l	1.0
	1,2-Dichloroethane	1.1	ug/l	1.0
	1,1-Dichloroethene	1.8	ug/l	1.0
	trans-1,2-Dichloroethene	1.2	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	5.8	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40783
MSAI Group: 10082

Sample ID: UST-017GPW 16'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	8.1	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UANB SSI/CAP

MSAI Sample: 40784
MSAI Group: 10082
Date Reported: 11/06/95

Discard Date: 12/06/95
Date Submitted: 10/18/95
Date Sampled: 10/18/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-1608-1-DUP
Matrix: Waste Water

UST 17 of W & DUP

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	5.6	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	20.7	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	6.3	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	2.9	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	8.8	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	2.2	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40784
MSAI Group: 10082

Sample ID: UST-1608-1-DUP

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	2.1	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UANB SSI/CAP

MSAI Sample: 40785
MSAI Group: 10082
Date Reported: 11/06/95

Discard Date: 12/06/95
Date Submitted: 10/18/95
Date Sampled: 10/18/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: Trip Blank
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40785
MSAI Group: 10082

Sample ID: Trip Blank

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical

The Quality Solution

November 9, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: UNAB SSI/CAP
Project No.: 1315-185
MSAI Group: 10141

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

Trip Blank	UST-021GPW 11'
UST-021GPW 16'	UST-009GPW 8'
UST-009GPW 16'	

All holding times were met for the tests performed on these samples.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40984
MSAI Group: 10141
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/20/95
Date Sampled: 10/20/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: Trip Blank
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	1.0
	1,1-Dichloroethane	ND	ug/l	3.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	1.0
	1,2-Dichloropropane	ND	ug/l	2.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

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Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40984
MSAI Group: 10141

Sample ID: Trip Blank

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40985
MSAI Group: 10141
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/20/95
Date Sampled: 10/20/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-021GPW 11'
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	1.6	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	1.2	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	3.0	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	1.9	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	1.9	ug/l	1.0

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The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40985
MSAI Group: 10141

Sample ID: UST-021GPW 11'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	3.8	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40986
MSAI Group: 10141
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/20/95
Date Sampled: 10/20/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: **UST-021GPW 16'**
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40986
MSAI Group: 10141

Sample ID: UST-021GPW 16'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40987
MSAI Group: 10141
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/20/95
Date Sampled: 10/20/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-009GPW 8'
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40987
MSAI Group: 10141

Sample ID: UST-009GPW 8'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: UNAB SSI/CAP

MSAI Sample: 40988
MSAI Group: 10141
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/20/95
Date Sampled: 10/20/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-009GPW 16'
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	1.0
	1,1-Dichloroethane	ND	ug/l	3.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	1.0
	1,2-Dichloropropane	ND	ug/l	2.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

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Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 40988
MSAI Group: 10141

Sample ID: UST-009GPW 16'

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical

The Quality Solution

November 9, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: Utah ANGB
Project No.: 1315-185
MSAI Group: 10162

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

UST-010MW 10-11.5	UST-011MW 13.5-15
UST-012MW 5-6.5	UST-012MW 2-3.5
UST-012MW 2-3.5 MS	UST-012MW 2-3.5 MSD
UST-1608 2 DUP	UST-1608 2 EB
UST-1608 2 FB	Trip Blank

All holding times were met for the tests performed on these samples except:

Sample - (Sample Date) Test Description	Expiration Date	Date Analyzed	Days Past Holding Time
UST-012MW 2-3.5 MSD - (10/23/95)			
Petroleum Hydrocarbons, Total	11/06/95	11/07/95	1

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as

your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB

MSAI Sample: 41145
MSAI Group: 10162
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/23/95
Date Sampled: 10/23/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-010MW 10-11.5
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	1,640	mg/kg	(1) 100
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	ND	ug/kg	20
	Bromoform	ND	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	ND	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	ND	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	40
	1,1,2,2-Tetrachloroethane	ND	ug/kg	20
	Tetrachloroethene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	1,1,1-Trichloroethane	ND	ug/kg	20

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41145
MSAI Group: 10162

Sample ID: UST-010MW 10-11.5

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	ND	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	ND	ug/kg	20
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete	mg/kg	
3330	Purgeable Aromatics/Halocarbons Method: SW-846 5030	Complete	ug/kg	

(1) Calibration Standard: Diesel.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB

MSAI Sample: 41147
MSAI Group: 10162
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/23/95
Date Sampled: 10/23/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-012MW 5-6.5
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/kg	10
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	ND	ug/kg	20
	Bromoform	ND	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	ND	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	ND	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	40
	1,1,2,2-Tetrachloroethane	ND	ug/kg	20
	Tetrachloroethene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	1,1,1-Trichloroethane	ND	ug/kg	20

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

Sample ID: UST-012MW 5-6.5

MSAI Sample: 41147
MSAI Group: 10162

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	ND	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	ND	ug/kg	20
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete	mg/kg	
3330	Purgeable Aromatics/Halocarbons Method: SW-846 5030	Complete	ug/kg	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB

MSAI Sample: 41148
MSAI Group: 10162
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/23/95
Date Sampled: 10/23/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-012MW 2-3.5
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/kg	10
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	ND	ug/kg	20
	Bromoform	ND	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	ND	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	ND	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	20
	1,1,2,2-Tetrachloroethane	ND	ug/kg	40
	Tetrachloroethene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	1,1,1-Trichloroethane	ND	ug/kg	20

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41148
MSAI Group: 10162

Sample ID: UST-012MW 2-3.5

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	ND	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	ND	ug/kg	20
118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete	mg/kg	
330	Purgeable Aromatics/Halocarbons Method: SW-846 5030	Complete	ug/kg	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

1645 West 2200 South, Salt Lake City, Utah 84119-1456 (801) 973-0050 1-800-973-MSAI FAX (801) 972-6278

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB

MSAI Sample: 41151
MSAI Group: 10162
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/23/95
Date Sampled: 10/23/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-1608 2 DUP
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/kg	10
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	ND	ug/kg	20
	Bromoform	ND	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	ND	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	ND	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	20
	1,1,2,2-Tetrachloroethane	ND	ug/kg	40
	Tetrachloroethene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	1,1,1-Trichloroethane	ND	ug/kg	20

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

Sample ID: UST-1608 2 DUP

MSAI Sample: 41151
MSAI Group: 10162

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	ND	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	ND	ug/kg	20
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete	mg/kg	
3330	Purgeable Aromatics/Halocarbons Method: SW-846 5030	Complete	ug/kg	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB

MSAI Sample: 41153
MSAI Group: 10162
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/23/95
Date Sampled: 10/23/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-1608 2 FB
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	1.0
	1,1-Dichloroethane	ND	ug/l	3.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	1.0
	1,2-Dichloropropane	ND	ug/l	2.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0
		ND	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41153
MSAI Group: 10162

Sample ID: UST-1608 2 FB

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB

MSAI Sample: 41154
MSAI Group: 10162
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/23/95
Date Sampled: 10/23/95
Collected by:
Purchase Order:
Project No.: 1315-185

Sample ID: Trip Blank
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41154
MSAI Group: 10162

Sample ID: Trip Blank

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB

MSAI Sample: 41152
MSAI Group: 10162
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/23/95
Date Sampled: 10/23/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-1608 2 EB
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41152
MSAI Group: 10162

Sample ID: UST-1608 2 EB

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB

MSAI Sample: 41146
MSAI Group: 10162
Date Reported: 11/09/95

Discard Date: 12/09/95
Date Submitted: 10/23/95
Date Sampled: 10/23/95
Collected by: KM
Purchase Order:
Project No.: 1315-185

Sample ID: UST-011MW 13.5-15
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/kg	10
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	ND	ug/kg	20
	Bromoform	ND	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	ND	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	30	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	40
	1,1,2,2-Tetrachloroethane	ND	ug/kg	20
	Tetrachloroethene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	1,1,1-Trichloroethane	ND	ug/kg	20

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41146
MSAI Group: 10162

Sample ID: UST-011MW 13.5-15

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	1,270	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	ND	ug/kg	20
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete	mg/kg	
3330	Purgeable Aromatics/Halocarbons Method: SW-846 5030	Complete	ug/kg	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyde Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical

The Quality Solution

November 21, 1995

Russ Cason
Operational Technologies Corp.
4100 N.W. Loop 410
Suite 230
San Antonio, Texas 78229-4253

Subject: Missed holding times for Group #10193.

Dear Mr. Cason:

Enclosed are the analytical results for Utah Air National Guard Base project.

All holding times were met for the following: UST-010MW, UST-011MW, AND UST-012MW.

The holding times were missed for the following: UST-010MW MS, UST-010MW MSD, UST-1608-3-FB, UST-1608-3-EB, and UST-1608-3-DUP. All samples were run on the day of expiration, however the quality control samples mentioned above were run after midnight of the expiration date. All the above samples were run within eight hours after the expiration date.

The holding time were missed because of samples in the que that were also facing expiration because of a downed instrument.

We apologize for any inconvenience this may have caused. We have implemented corrective actions to eliminate this problem in the future. If you have questions regarding these results, please feel free to contact me at any time.

Sincerely,

Lyle Gregory Covino
Project Manager

Enclosures

1760 West 2200 South, Salt Lake City, Utah 84119 (801)973-6233 1-800-973-MSAL FAX (801)972-0275

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANG-B

MSAI Sample: 41298
MSAI Group: 10193
Date Reported: 11/14/95

Discard Date: 12/14/95
Date Submitted: 10/25/95
Date Sampled: 10/25/95
Collected by: KM
Purchase Order:
Project No.: 1315-185 PO30

Sample ID: UST-010MW
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
8078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41298
MSAI Group: 10193

Sample ID: UST-010MW

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANG-B

MSAI Sample: 41299
MSAI Group: 10193
Date Reported: 11/14/95

Discard Date: 12/14/95
Date Submitted: 10/25/95
Date Sampled: 10/25/95
Collected by: KM
Purchase Order:
Project No.: 1315-185 PO30

Sample ID: UST-011MW
Matrix: Water

Test	Analysis	Results as Received	Units		Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020				
	Benzene	4.8	ug/l		1.0
	Bromodichloromethane	ND	ug/l		1.0
	Bromoform	ND	ug/l		1.0
	Bromomethane	ND	ug/l		1.0
	Carbon tetrachloride	ND	ug/l		1.0
	Chlorobenzene	ND	ug/l		1.0
	Chloroethane	ND	ug/l		1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l		1.0
	Chloroform	3.6	ug/l		1.0
	Chloromethane	ND	ug/l		1.0
	Dibromochloromethane	ND	ug/l		1.0
	1,2-Dichlorobenzene	ND	ug/l		1.0
	1,3-Dichlorobenzene	ND	ug/l		1.0
	1,4-Dichlorobenzene	ND	ug/l		1.0
	Dichlorodifluoromethane	ND	ug/l		3.0
	1,1-Dichloroethane	ND	ug/l		1.0
	1,2-Dichloroethane	ND	ug/l		1.0
	1,1-Dichloroethene	6.0	ug/l		1.0
	trans-1,2-Dichloroethene	10.7	ug/l		1.0
	Methylene chloride (Dichloromethane	ND	ug/l		2.0
	1,2-Dichloropropane	ND	ug/l		1.0
	cis-1,3-Dichloropropene	ND	ug/l		1.0
	trans-1,3-Dichloropropene	ND	ug/l		1.0
	Ethylbenzene	4.1	ug/l		1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l		1.0
	Tetrachloroethene	1.6	ug/l		1.0
	Toluene	ND	ug/l		1.0
	1,1,1-Trichloroethane	ND	ug/l		1.0
	1,1,2-Trichloroethane	ND	ug/l		1.0
	Trichloroethene	2,760	ug/l	(1)	100

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41299
MSAI Group: 10193

Sample ID: UST-011MW

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	1.0	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

(1) This sample was analyzed for Trichloroethene outside of its 14 day hold time.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANG-B

MSAI Sample: 41300
MSAI Group: 10193
Date Reported: 11/14/95

Discard Date: 12/14/95
Date Submitted: 10/25/95
Date Sampled: 10/25/95
Collected by: KM
Purchase Order:
Project No.: 1315-185 PO30

Sample ID: UST-012MW
Matrix: Water

Test	Analysis	Results as Received	Units		Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020				
	Benzene	ND	ug/l		1.0
	Bromodichloromethane	3.6	ug/l		1.0
	Bromoform	ND	ug/l		1.0
	Bromomethane	ND	ug/l		1.0
	Carbon tetrachloride	ND	ug/l		1.0
	Chlorobenzene	ND	ug/l		1.0
	Chloroethane	ND	ug/l		1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l		1.0
	Chloroform	15.7	ug/l		1.0
	Chloromethane	ND	ug/l		1.0
	Dibromochloromethane	ND	ug/l		1.0
	1,2-Dichlorobenzene	ND	ug/l		1.0
	1,3-Dichlorobenzene	ND	ug/l		1.0
	1,4-Dichlorobenzene	ND	ug/l		1.0
	Dichlorodifluoromethane	ND	ug/l		3.0
	1,1-Dichloroethane	ND	ug/l		1.0
	1,2-Dichloroethane	ND	ug/l		1.0
	1,1-Dichloroethene	ND	ug/l		1.0
	trans-1,2-Dichloroethene	ND	ug/l		1.0
	Methylene chloride (Dichloromethane	ND	ug/l		2.0
	1,2-Dichloropropane	ND	ug/l		1.0
	cis-1,3-Dichloropropene	ND	ug/l		1.0
	trans-1,3-Dichloropropene	ND	ug/l		1.0
	Ethylbenzene	ND	ug/l		1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l		1.0
	Tetrachloroethene	ND	ug/l		1.0
	Toluene	ND	ug/l		1.0
	1,1,1-Trichloroethane	ND	ug/l		1.0
	1,1,2-Trichloroethane	ND	ug/l		1.0
	Trichloroethene	ND	ug/l	(1)	3.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41300
MSAI Group: 10193

Sample ID: UST-012MW

Test	Analysis	Results as Received	Units	Limit of Quantitation	
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020				
	Trichlorofluoromethane	ND	ug/l		1.0
	Vinyl chloride	ND	ug/l		1.0
	Xylenes (total)	ND	ug/l		1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	19.9	mg/l	(2)	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l		

(1) The LOQ for Trichloroethene was raised due to possible carryover from a previous sample.
(2) Calibration Standard: Diesel.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANG-B

MSAI Sample: 41301
MSAI Group: 10193
Date Reported: 11/14/95

Discard Date: 12/14/95
Date Submitted: 10/25/95
Date Sampled: 10/25/95
Collected by: KM
Purchase Order:
Project No.: 1315-185 PO30

Sample ID: UST-010MW MS
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation	
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020				
	Benzene	141	%Recovery	(1)	1.0
	Bromodichloromethane	ND	%Recovery		1.0
	Bromoform	199	%Recovery		1.0
	Bromomethane	ND	%Recovery		1.0
	Carbon tetrachloride	147	%Recovery		1.0
	Chlorobenzene	112	%Recovery		1.0
	Chloroethane	ND	%Recovery		1.0
	2-Chloroethyl Vinyl Ether	ND	%Recovery		1.0
	Chloroform	128	%Recovery		1.0
	Chloromethane	ND	%Recovery		1.0
	Dibromochloromethane	ND	%Recovery		1.0
	1,2-Dichlorobenzene	90.0	%Recovery		1.0
	1,3-Dichlorobenzene	97.0	%Recovery		1.0
	1,4-Dichlorobenzene	100	%Recovery		1.0
	Dichlorodifluoromethane	ND	%Recovery		3.0
	1,1-Dichloroethane	142	%Recovery		1.0
	1,2-Dichloroethane	123	%Recovery		1.0
	1,1-Dichloroethene	164	%Recovery		1.0
	trans-1,2-Dichloroethene	168	%Recovery		1.0
	Methylene chloride (Dichloromethane	163	%Recovery		2.0
	1,2-Dichloropropane	131	%Recovery		1.0
	cis-1,3-Dichloropropene	ND	%Recovery		1.0
	trans-1,3-Dichloropropene	ND	%Recovery		1.0
	Ethylbenzene	120	%Recovery		1.0
	1,1,2,2-Tetrachloroethane	122	%Recovery		1.0
	Tetrachloroethene	153	%Recovery		1.0
	Toluene	129	%Recovery		1.0
	1,1,1-Trichloroethane	145	%Recovery		1.0
	1,1,2-Trichloroethane	118	%Recovery		1.0
	Trichloroethene	140	%Recovery		1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41301
MSAI Group: 10193

Sample ID: UST-010MW MS

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	%Recovery	1.0
	Vinyl chloride	ND	%Recovery	1.0
	Xylenes (total)	126	%Recovery	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	%Recovery	(2) 1,000
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

(1) This sample was analyzed outside its 14 day hold time.
(2) Calibration Standard: Diesel.
Spike recoveries are out so LCS was used. LCS recovery = 132%.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANG-B

Sample ID: UST-010MW MSD
Matrix: Water

MSAI Sample: 41302
MSAI Group: 10193
Date Reported: 11/14/95

Discard Date: 12/14/95
Date Submitted: 10/25/95
Date Sampled: 10/25/95
Collected by: KM
Purchase Order:
Project No.: 1315-185 PO30

Test	Analysis	Results as Received	Units		Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020				
	Benzene	139	%Recovery	(1)	1.0
	Bromodichloromethane	ND	%Recovery		1.0
	Bromoform	196	%Recovery		1.0
	Bromomethane	ND	%Recovery		1.0
	Carbon tetrachloride	147	%Recovery		1.0
	Chlorobenzene	109	%Recovery		1.0
	Chloroethane	ND	%Recovery		1.0
	2-Chloroethyl Vinyl Ether	ND	%Recovery		1.0
	Chloroform	124	%Recovery		1.0
	Chloromethane	ND	%Recovery		1.0
	Dibromochloromethane	ND	%Recovery		1.0
	1,2-Dichlorobenzene	90.0	%Recovery		1.0
	1,3-Dichlorobenzene	95.0	%Recovery		1.0
	1,4-Dichlorobenzene	97.0	%Recovery		1.0
	Dichlorodifluoromethane	ND	%Recovery		3.0
	1,1-Dichloroethane	136	%Recovery		1.0
	1,2-Dichloroethane	120	%Recovery		1.0
	1,1-Dichloroethene	164	%Recovery		1.0
	trans-1,2-Dichloroethene	162	%Recovery		1.0
	Methylene chloride (Dichloromethane	156	%Recovery		2.0
	1,2-Dichloropropane	ND	%Recovery		1.0
	cis-1,3-Dichloropropene	ND	%Recovery		1.0
	trans-1,3-Dichloropropene	ND	%Recovery		1.0
	Ethylbenzene	117	%Recovery		1.0
	1,1,2,2-Tetrachloroethane	119	%Recovery		1.0
	Tetrachloroethene	147	%Recovery		1.0
	Toluene	125	%Recovery		1.0
	1,1,1-Trichloroethane	142	%Recovery		1.0
	1,1,2-Trichloroethane	118	%Recovery		1.0
	Trichloroethene	136	%Recovery		1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41302
MSAI Group: 10193

Sample ID: UST-010MW MSD

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	%Recovery	1.0
	Vinyl chloride	ND	%Recovery	1.0
	Xylenes (total)	121	%Recovery	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	%Recovery	(2) 1,000
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

(1) This sample was analyzed outside its 14 day hold time.
(2) Calibration Standard: Diesel.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANG-B

MSAI Sample: 41303
MSAI Group: 10193
Date Reported: 11/14/95

Discard Date: 12/14/95
Date Submitted: 10/25/95
Date Sampled: 10/25/95
Collected by: KM
Purchase Order:
Project No.: 1315-185 PO30

Sample ID: UST-1608-3-FB
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation	
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020				
	Benzene	ND	ug/l	(1)	1.0
	Bromodichloromethane	ND	ug/l		1.0
	Bromoform	ND	ug/l		1.0
	Bromomethane	ND	ug/l		1.0
	Carbon tetrachloride	ND	ug/l		1.0
	Chlorobenzene	ND	ug/l		1.0
	Chloroethane	ND	ug/l		1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l		1.0
	Chloroform	ND	ug/l		1.0
	Chloromethane	ND	ug/l		1.0
	Dibromochloromethane	ND	ug/l		1.0
	1,2-Dichlorobenzene	ND	ug/l		1.0
	1,3-Dichlorobenzene	ND	ug/l		1.0
	1,4-Dichlorobenzene	ND	ug/l		1.0
	Dichlorodifluoromethane	ND	ug/l		1.0
	1,1-Dichloroethane	ND	ug/l		3.0
	1,2-Dichloroethane	ND	ug/l		1.0
	1,1-Dichloroethene	ND	ug/l		1.0
	trans-1,2-Dichloroethene	ND	ug/l		1.0
	Methylene chloride (Dichloromethane	ND	ug/l		1.0
	1,2-Dichloropropane	ND	ug/l		2.0
	cis-1,3-Dichloropropene	ND	ug/l		1.0
	trans-1,3-Dichloropropene	ND	ug/l		1.0
	Ethylbenzene	ND	ug/l		1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l		1.0
	Tetrachloroethene	ND	ug/l		1.0
	Toluene	ND	ug/l		1.0
	1,1,1-Trichloroethane	ND	ug/l		1.0
	1,1,2-Trichloroethane	ND	ug/l		1.0
	Trichloroethene	ND	ug/l		1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41303
MSAI Group: 10193

Sample ID: UST-1608-3-FB

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

(1) This sample was analyzed outside its 14 day hold time.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

1645 West 2200 South, Salt Lake City, Utah 84119-1456 (801) 973-0050 1-800-973-MSAI FAX (801) 972-6278

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANG-B

Sample ID: UST-1608-3-EB
Matrix: Water

MSAI Sample: 41304
MSAI Group: 10193
Date Reported: 11/14/95

Discard Date: 12/14/95
Date Submitted: 10/25/95
Date Sampled: 10/25/95
Collected by: KM
Purchase Order:
Project No.: 1315-185 PO30

Test	Analysis	Results as Received	Units	Limit of Quantitation	
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020				
	Benzene	ND	ug/l	(1)	1.0
	Bromodichloromethane	ND	ug/l		1.0
	Bromoform	ND	ug/l		1.0
	Bromomethane	ND	ug/l		1.0
	Carbon tetrachloride	ND	ug/l		1.0
	Chlorobenzene	ND	ug/l		1.0
	Chloroethane	ND	ug/l		1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l		1.0
	Chloroform	ND	ug/l		1.0
	Chloromethane	ND	ug/l		1.0
	Dibromochloromethane	ND	ug/l		1.0
	1,2-Dichlorobenzene	ND	ug/l		1.0
	1,3-Dichlorobenzene	ND	ug/l		1.0
	1,4-Dichlorobenzene	ND	ug/l		1.0
	Dichlorodifluoromethane	ND	ug/l		3.0
	1,1-Dichloroethane	ND	ug/l		1.0
	1,2-Dichloroethane	ND	ug/l		1.0
	1,1-Dichloroethene	ND	ug/l		1.0
	trans-1,2-Dichloroethene	ND	ug/l		1.0
	Methylene chloride (Dichloromethane	ND	ug/l		2.0
	1,2-Dichloropropane	ND	ug/l		1.0
	cis-1,3-Dichloropropene	ND	ug/l		1.0
	trans-1,3-Dichloropropene	ND	ug/l		1.0
	Ethylbenzene	ND	ug/l		1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l		1.0
	Tetrachloroethene	ND	ug/l		1.0
	Toluene	ND	ug/l		1.0
	1,1,1-Trichloroethane	ND	ug/l		1.0
	1,1,2-Trichloroethane	ND	ug/l		1.0
	Trichloroethene	ND	ug/l		1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41304
MSAI Group: 10193

Sample ID: UST-1608-3-EB

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

(1) This sample was analyzed outside its 14 day hold time.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

1645 West 2200 South, Salt Lake City, Utah 84119-1456 (801) 973-0050 1-800-973-MSAI FAX (801) 972-6278

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANG-B

Sample ID: UST-1608-3 DUP (~~Water~~) Oil in W?.
Matrix: Water

MSAI Sample: 41305
MSAI Group: 10193
Date Reported: 11/14/95

Discard Date: 12/14/95
Date Submitted: 10/25/95
Date Sampled: 10/25/95
Collected by: KM
Purchase Order:
Project No.: 1315-185 PO30

Test	Analysis	Results as Received	Units	Limit of Quantitation	
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020				
	Benzene	ND	ug/l	(1)	1.0
	Bromodichloromethane	ND	ug/l		1.0
	Bromoform	ND	ug/l		1.0
	Bromomethane	ND	ug/l		1.0
	Carbon tetrachloride	ND	ug/l		1.0
	Chlorobenzene	ND	ug/l		1.0
	Chloroethane	ND	ug/l		1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l		1.0
	Chloroform	ND	ug/l		1.0
	Chloromethane	ND	ug/l		1.0
	Dibromochloromethane	ND	ug/l		1.0
	1,2-Dichlorobenzene	ND	ug/l		1.0
	1,3-Dichlorobenzene	ND	ug/l		1.0
	1,4-Dichlorobenzene	ND	ug/l		1.0
	Dichlorodifluoromethane	ND	ug/l		3.0
	1,1-Dichloroethane	ND	ug/l		1.0
	1,2-Dichloroethane	ND	ug/l		1.0
	1,1-Dichloroethene	ND	ug/l		1.0
	trans-1,2-Dichloroethene	ND	ug/l		1.0
	Methylene chloride (Dichloromethane	ND	ug/l		2.0
	1,2-Dichloropropane	ND	ug/l		1.0
	cis-1,3-Dichloropropene	ND	ug/l		1.0
	trans-1,3-Dichloropropene	ND	ug/l		1.0
	Ethylbenzene	ND	ug/l		1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l		1.0
	Tetrachloroethene	ND	ug/l		1.0
	Toluene	ND	ug/l		1.0
	1,1,1-Trichloroethane	ND	ug/l		1.0
	1,1,2-Trichloroethane	ND	ug/l		1.0
	Trichloroethene	ND	ug/l		1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41305
MSAI Group: 10193

Sample ID: UST-1608-3 DUP

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

(1) This sample was analyzed outside its 14 day hold time.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANG-B

MSAI Sample: 41306
MSAI Group: 10193
Date Reported: 11/14/95

Discard Date: 12/14/95
Date Submitted: 10/25/95
Date Sampled: 10/25/95
Collected by: KM
Purchase Order:
Project No.: 1315-185 PO30

Sample ID: Trip Blank
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation	
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020				
	Benzene	ND	ug/l	(1)	1.0
	Bromodichloromethane	ND	ug/l		1.0
	Bromoform	ND	ug/l		1.0
	Bromomethane	ND	ug/l		1.0
	Carbon tetrachloride	ND	ug/l		1.0
	Chlorobenzene	ND	ug/l		1.0
	Chloroethane	ND	ug/l		1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l		1.0
	Chloroform	ND	ug/l		1.0
	Chloromethane	ND	ug/l		1.0
	Dibromochloromethane	ND	ug/l		1.0
	1,2-Dichlorobenzene	ND	ug/l		1.0
	1,3-Dichlorobenzene	ND	ug/l		1.0
	1,4-Dichlorobenzene	ND	ug/l		1.0
	Dichlorodifluoromethane	ND	ug/l		3.0
	1,1-Dichloroethane	ND	ug/l		1.0
	1,2-Dichloroethane	ND	ug/l		1.0
	1,1-Dichloroethene	ND	ug/l		1.0
	trans-1,2-Dichloroethene	ND	ug/l		1.0
	Methylene chloride (Dichloromethane	ND	ug/l		2.0
	1,2-Dichloropropane	ND	ug/l		1.0
	cis-1,3-Dichloropropene	ND	ug/l		1.0
	trans-1,3-Dichloropropene	ND	ug/l		1.0
	Ethylbenzene	ND	ug/l		1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l		1.0
	Tetrachloroethene	ND	ug/l		1.0
	Toluene	ND	ug/l		1.0
	1,1,1-Trichloroethane	ND	ug/l		1.0
	1,1,2-Trichloroethane	ND	ug/l		1.0
	Trichloroethene	ND	ug/l		1.0

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 41306
MSAI Group: 10193

Sample ID: Trip Blank

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0

(1) This sample was analyzed outside its 14 day hold time.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical

June 19, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: Utah ANGB, Former UST at 1608
MSAI Group: 8573

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

IDW-W-D2	IDW-W-D4	IDW-W-D5
IDW-W-D13	IDW-S-D1	IDW-S-D9
IDW-S-D10	Trip Blank	

All holding times were met for the tests performed on these samples.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB, Former UST at 1608

Sample ID: IDW-W-D2
Matrix: Water

MSAI Sample: 34549
MSAI Group: 8573
Date Reported: 06/19/95

Discard Date: 07/19/95
Date Submitted: 06/15/95
Date Sampled: 06/15/95
Collected by: KM
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
0516	BTEX			
	Method: EPA 602 - 8020			
	Benzene	ND	ug/l	(1) 50
	Toluene	ND	ug/l	50
	Ethylbenzene	ND	ug/l	50
	m,p-Xylene	ND	ug/l	50
	o-Xylene	ND	ug/l	50

(1) Due to the tendency to foam under purge and trap conditions, the sample was diluted. The LOQ was raised accordingly.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB, Former UST at 1608

Sample ID: IDW-W-D4
Matrix: Water

MSAI Sample: 34550
MSAI Group: 8573
Date Reported: 06/19/95

Discard Date: 07/19/95
Date Submitted: 06/15/95
Date Sampled: 06/15/95
Collected by: KM
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
0516	BTEX			
	Method: EPA 602 - 8020			
	Benzene	ND	ug/l	(1) 50
	Toluene	ND	ug/l	50
	Ethylbenzene	ND	ug/l	50
	m,p-Xylene	ND	ug/l	50
	o-Xylene	ND	ug/l	50

(1) Due to the tendency to foam under purge and trap conditions, the sample was diluted. The LOQ was raised accordingly.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB, Former UST at 1608

Sample ID: IDW-W-D5
Matrix: Water

MSAI Sample: 34551
MSAI Group: 8573
Date Reported: 06/19/95

Discard Date: 07/19/95
Date Submitted: 06/15/95
Date Sampled: 06/15/95
Collected by: KM
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
0516	BTEX			
	Method: EPA 602 - 8020			
	Benzene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	m,p-Xylene	ND	ug/l	1.0
	o-Xylene	ND	ug/l	1.0

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB, Former UST at 1608

Sample ID: IDW-W-D13
Matrix: Water

MSAI Sample: 34552
MSAI Group: 8573
Date Reported: 06/19/95

Discard Date: 07/19/95
Date Submitted: 06/15/95
Date Sampled: 06/15/95
Collected by: KM
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
0516	BTEX			
	Method: EPA 602 - 8020			
	Benzene	ND	ug/l	(1) 50
	Toluene	ND	ug/l	50
	Ethylbenzene	ND	ug/l	50
	m,p-Xylene	ND	ug/l	50
	o-Xylene	ND	ug/l	50

(1) Due to the tendency to foam under purge and trap conditions, the sample was diluted. The LOQ was raised accordingly.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB, Former UST at 1608

Sample ID: IDW-S-D1
Matrix: Solid Waste

MSAI Sample: 34553
MSAI Group: 8573
Date Reported: 06/19/95

Discard Date: 07/19/95
Date Submitted: 06/15/95
Date Sampled: 06/15/95
Collected by: KM
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
1213	BTEX			
	Method: SW-846 5030/8020 MOD			
	Benzene	459	ug/kg	20
	Toluene	1,030	ug/kg	20
	Ethylbenzene	451	ug/kg	20
	m,p-Xylene	1,640	ug/kg	20
	o-Xylene	500	ug/kg	20

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB, Former UST at 1608

Sample ID: IDW-S-D9
Matrix: Solid Waste

MSAI Sample: 34554
MSAI Group: 8573
Date Reported: 06/19/95

Discard Date: 07/19/95
Date Submitted: 06/15/95
Date Sampled: 06/15/95
Collected by: KM
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
1213	BTEX			
	Method: SW-846 5030/8020 MOD			
	Benzene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	m,p-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB, Former UST at 1608

Sample ID: IDW-S-D10
Matrix: Solid Waste

MSAI Sample: 34555
MSAI Group: 8573
Date Reported: 06/19/95

Discard Date: 07/19/95
Date Submitted: 06/15/95
Date Sampled: 06/15/95
Collected by: KM
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
1213	BTEX			
	Method: SW-846 5030/8020 MOD			
	Benzene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	m,p-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB, Former UST at 1608

Sample ID: Trip Blank
Matrix: Water

MSAI Sample: 34556
MSAI Group: 8573
Date Reported: 06/19/95

Discard Date: 07/19/95
Date Submitted: 06/15/95
Date Sampled: 06/15/95
Collected by: KM
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
0516	BTEX			
	Method: EPA 602 - 8020			
	Benzene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	m,p-Xylene	ND	ug/l	1.0
	o-Xylene	ND	ug/l	1.0

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical

The Quality Solution

December 4, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: Usah ANGB, Bldg 1608
MSAI Group: 10400

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

UST-1608-TB1	UST-1608-D15	UST-1608-D16
UST-1608-D14	UST-1608-D13	UST-1608-D17

All holding times were met for the tests performed on these samples.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Usah ANGB, Bldg 1608

MSAI Sample: 42187
MSAI Group: 10400
Date Reported: 12/04/95

Discard Date: 01/03/96
Date Submitted: 11/14/95
Date Sampled: 11/14/95
Collected by: KM
Purchase Order:
Project No.:

Sample ID: UST-1608-TB1
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 42187
MSAI Group: 10400

Sample ID: UST-1608-TB1

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichloroflucromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Usah ANGB, Bldg 1608

MSAI Sample: 42188
MSAI Group: 10400
Date Reported: 12/04/95

Discard Date: 01/03/96
Date Submitted: 11/14/95
Date Sampled: 11/14/95
Collected by: KM
Purchase Order:
Project No.:

Sample ID: UST-1608-D15
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/kg	20
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	ND	ug/kg	20
	Bromoform	ND	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	ND	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	ND	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	40
	1,1,2,2-Tetrachloroethane	ND	ug/kg	20
	Tetrachloroethene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	1,1,1-Trichloroethane	54	ug/kg	20

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 42188
MSAI Group: 10400

Sample ID: UST-1608-D15

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	612	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	ND	ug/kg	20
0948	Volatiles, TCLP Method: SW-846 8240A			
	Benzene	ND	mg/l	0.05
	Carbon tetrachloride	ND	mg/l	0.05
	Chlorobenzene	ND	mg/l	0.05
	Chloroform	ND	mg/l	0.05
	1,2-Dichloroethane	ND	mg/l	0.05
	1,1-Dichloroethene	ND	mg/l	0.05
	2-Butanone (MEK)	ND	mg/l	0.2
	Tetrachloroethene	ND	mg/l	0.05
	Trichloroethene	ND	mg/l	0.05
	Vinyl chloride	ND	mg/l	0.1
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete		
3330	Purge. Aromatics/Halocarbons Ext. Method: SW-846 5030	Complete		

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Usah ANGB, Bldg 1608

MSAI Sample: 42189
MSAI Group: 10400
Date Reported: 12/04/95

Discard Date: 01/03/96
Date Submitted: 11/14/95
Date Sampled: 11/14/95
Collected by: KM
Purchase Order:
Project No.:

Sample ID: UST-1608-D16
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
5536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/kg	10
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	ND	ug/kg	20
	Bromoform	ND	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	ND	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	ND	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	40
	1,1,2,2-Tetrachloroethane	ND	ug/kg	20
	Tetrachloroethene	ND	ug/kg	20
	Toluene	ND	ug/kg	20
	1,1,1-Trichloroethane	ND	ug/kg	20

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 42189
MSAI Group: 10400

Sample ID: UST-1608-D16

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	ND	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	ND	ug/kg	20
0948	Volatiles, TCLP Method: SW-846 8240A			
	Benzene	ND	mg/l	0.05
	Carbon tetrachloride	ND	mg/l	0.05
	Chlorobenzene	ND	mg/l	0.05
	Chloroform	ND	mg/l	0.05
	1,2-Dichloroethane	ND	mg/l	0.05
	1,1-Dichloroethene	ND	mg/l	0.05
	2-Butanone (MEK)	ND	mg/l	0.2
	Tetrachloroethene	ND	mg/l	0.05
	Trichloroethene	ND	mg/l	0.05
	Vinyl chloride	ND	mg/l	0.1
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete		
3330	Purge. Aromatics/Halocarbons Ext. Method: SW-846 5030	Complete		

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Usah ANGB, Bldg 1608

MSAI Sample: 42190
MSAI Group: 10400
Date Reported: 12/04/95

Discard Date: 01/03/96
Date Submitted: 11/14/95
Date Sampled: 11/14/95
Collected by: KM
Purchase Order:
Project No.:

Sample ID: UST-1608-D14
Matrix: Soil

Test	Analysis	Results as Received	Units	Limit of Quantitation
536	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	132	mg/kg	(1) 20
722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	Benzene	24	ug/kg	20
	Bromoform	26	ug/kg	20
	Bromomethane	ND	ug/kg	20
	Carbon tetrachloride	ND	ug/kg	20
	Chlorobenzene	ND	ug/kg	20
	Chloroethane	ND	ug/kg	20
	2-Chloroethyl Vinyl Ether	ND	ug/kg	20
	Chloroform	54	ug/kg	20
	Chloromethane	ND	ug/kg	20
	Dibromochloromethane	ND	ug/kg	20
	1,2-Dichlorobenzene	ND	ug/kg	20
	1,3-Dichlorobenzene	ND	ug/kg	20
	1,4-Dichlorobenzene	ND	ug/kg	20
	Bromodichloromethane	ND	ug/kg	20
	1,1-Dichloroethene	ND	ug/kg	20
	1,2-Dichloroethene (total)	ND	ug/kg	20
	1,1-Dichloroethane	ND	ug/kg	20
	trans-1,2-Dichloroethene	ND	ug/kg	20
	1,2-Dichloropropane	ND	ug/kg	20
	cis-1,3-Dichloropropene	ND	ug/kg	20
	trans-1,3-Dichloropropene	ND	ug/kg	20
	Ethylbenzene	ND	ug/kg	20
	Methylene chloride (Dichloromethane	ND	ug/kg	40
	1,1,2,2-Tetrachloroethane	ND	ug/kg	20
	Tetrachloroethene	ND	ug/kg	20
	Toluene	39	ug/kg	20
	1,1,1-Trichloroethane	ND	ug/kg	20

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 42190
MSAI Group: 10400

Sample ID: UST-1608-D14

Test	Analysis	Results as Received	Units	Limit of Quantitation
6722	Purgeable Aromatics/Halocarbons Method: SW-846 8010/8020			
	1,1,2-Trichloroethane	ND	ug/kg	20
	Trichloroethene	26	ug/kg	20
	Trichlorofluoromethane	ND	ug/kg	20
	Vinyl chloride	ND	ug/kg	20
	p-Xylene	ND	ug/kg	20
	m-Xylene	ND	ug/kg	20
	o-Xylene	ND	ug/kg	20
	1,2-Dichloroethane	ND	ug/kg	20
0948	Volatiles, TCLP Method: SW-846 8240A			
	Benzene	ND	mg/l	0.05
	Carbon tetrachloride	ND	mg/l	0.05
	Chlorobenzene	ND	mg/l	0.05
	Chloroform	ND	mg/l	0.05
	1,2-Dichloroethane	ND	mg/l	0.05
	1,1-Dichloroethene	ND	mg/l	0.05
	2-Butanone (MEK)	ND	mg/l	0.2
	Tetrachloroethene	ND	mg/l	0.05
	Trichloroethene	ND	mg/l	0.05
	Vinyl chloride	ND	mg/l	0.1
3118	TPH 8015 Extraction, Solids Method: SW-846 3550A	Complete		
3330	Purge. Aromatics/Halocarbons Ext. Method: SW-846 5030	Complete		

(1) Calibration Standard: 10W-40.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

1645 West 2200 South, Salt Lake City, Utah 84119-1456 (801) 973-0050 1-800-973-MSAI FAX (801) 972-6278

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Usah ANGB, Bldg 1608

MSAI Sample: 42191
MSAI Group: 10400
Date Reported: 12/04/95

Discard Date: 01/03/96
Date Submitted: 11/14/95
Date Sampled: 11/14/95
Collected by: KM
Purchase Order:
Project No.:

Sample ID: UST-1608-D13
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation	
078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020				
	Benzene	ND	ug/l	(1)	50
	Bromodichloromethane	ND	ug/l		50
	Bromoform	ND	ug/l		50
	Bromomethane	ND	ug/l		50
	Carbon tetrachloride	ND	ug/l		50
	Chlorobenzene	ND	ug/l		50
	Chloroethane	ND	ug/l		50
	2-Chloroethyl Vinyl Ether	ND	ug/l		50
	Chloroform	ND	ug/l		50
	Chloromethane	ND	ug/l		50
	Dibromochloromethane	ND	ug/l		50
	1,2-Dichlorobenzene	ND	ug/l		50
	1,3-Dichlorobenzene	ND	ug/l		50
	1,4-Dichlorobenzene	ND	ug/l		50
	Dichlorodifluoromethane	ND	ug/l		150
	1,1-Dichloroethane	ND	ug/l		50
	1,2-Dichloroethane	ND	ug/l		50
	1,1-Dichloroethene	ND	ug/l		50
	trans-1,2-Dichloroethene	ND	ug/l		50
	Methylene chloride (Dichloromethane	475	ug/l		100
	1,2-Dichloropropane	ND	ug/l		50
	cis-1,3-Dichloropropene	ND	ug/l		50
	trans-1,3-Dichloropropene	ND	ug/l		50
	Ethylbenzene	ND	ug/l		50
	1,1,2,2-Tetrachloroethane	ND	ug/l		50
	Tetrachloroethene	ND	ug/l		50
	Toluene	61	ug/l		50
	1,1,1-Trichloroethane	ND	ug/l		50
	1,1,2-Trichloroethane	ND	ug/l		50
	Trichloroethene	ND	ug/l		50

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 42191
MSAI Group: 10400

Sample ID: UST-1608-D13

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	50
	Vinyl chloride	ND	ug/l	50
	Xylenes (total)	ND	ug/l	50
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	68.0	mg/l	(2) 5.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete		

(1) Due to the tendency to foam under purge and trap conditions, the sample was diluted. The LOQ was raised accordingly.
(2) Calibration Standard: Diesel.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Usah ANGB, Bldg 1608

MSAI Sample: 42192
MSAI Group: 10400
Date Reported: 12/04/95

Discard Date: 01/03/96
Date Submitted: 11/14/95
Date Sampled: 11/14/95
Collected by: KM
Purchase Order:
Project No.:

Sample ID: UST-1608-D17
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	(1) 50
	Bromodichloromethane	ND	ug/l	50
	Bromoform	ND	ug/l	50
	Bromomethane	ND	ug/l	50
	Carbon tetrachloride	ND	ug/l	50
	Chlorobenzene	ND	ug/l	50
	Chloroethane	ND	ug/l	50
	2-Chloroethyl Vinyl Ether	ND	ug/l	50
	Chloroform	ND	ug/l	50
	Chloromethane	ND	ug/l	50
	Dibromochloromethane	ND	ug/l	50
	1,2-Dichlorobenzene	ND	ug/l	50
	1,3-Dichlorobenzene	ND	ug/l	50
	1,4-Dichlorobenzene	ND	ug/l	50
	Dichlorodifluoromethane	ND	ug/l	150
	1,1-Dichloroethane	ND	ug/l	50
	1,2-Dichloroethane	ND	ug/l	50
	1,1-Dichloroethene	ND	ug/l	50
	trans-1,2-Dichloroethene	ND	ug/l	50
	Methylene chloride (Dichloromethane	799	ug/l	100
	1,2-Dichloropropane	ND	ug/l	50
	cis-1,3-Dichloropropene	ND	ug/l	50
	trans-1,3-Dichloropropene	ND	ug/l	50
	Ethylbenzene	ND	ug/l	50
	1,1,2,2-Tetrachloroethane	ND	ug/l	50
	Tetrachloroethene	ND	ug/l	50
	Toluene	ND	ug/l	50
	1,1,1-Trichloroethane	ND	ug/l	50
	1,1,2-Trichloroethane	ND	ug/l	50
	Trichloroethene	ND	ug/l	50

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 42192
MSAI Group: 10400

Sample ID: UST-1608-D17

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	50
	Vinyl chloride	ND	ug/l	50
	Xylenes (total)	ND	ug/l	50
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	4.1	mg/l	(2) 1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete		

(1) Due to the tendency to foam under purge and trap conditions, the sample was diluted. The LOQ was raised accordingly.
(2) Cablibration Standard: 10W-40.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

1645 West 2200 South, Salt Lake City, Utah 84119-1456 (801) 973-0050 1-800-973-MSAI FAX (801) 972-6278

MEMBER ACIL

Mountain States Analytical

The Quality Solution

December 4, 1995

Mr. Russell Cason
Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229

Reference:
Project: Utah ANGB Bldg. 1608
MSAI Group: 10413

Dear Mr. Cason:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

UST-1608-TB	UST-010-MW	UST-011-MW
UST-012-MW	UST-1608-dup	UST-1608-RB
UST-1608-FB	UST-010-MW MS	UST-010-MW MSD

All holding times were met for the tests performed on these samples.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB Bldg. 1608

Sample ID: UST-1608-TB
Matrix: Water

MSAI Sample: 42265
MSAI Group: 10413
Date Reported: 11/30/95

Discard Date: 12/30/95
Date Submitted: 11/15/95
Date Sampled: 11/15/95
Collected by: KM
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	1.0
	1,1-Dichloroethane	ND	ug/l	3.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	1.0
	1,2-Dichloropropane	ND	ug/l	2.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
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Operational Technologies Corporation

MSAI Sample: 42265
MSAI Group: 10413

Sample ID: UST-1608-TB

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB Bldg. 1608

MSAI Sample: 42266
MSAI Group: 10413
Date Reported: 11/30/95

Discard Date: 12/30/95
Date Submitted: 11/15/95
Date Sampled: 11/15/95
Collected by: KM
Purchase Order:
Project No.:

Sample ID: UST-010-MW
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

Mountain States Analytical
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Operational Technologies Corporation

MSAI Sample: 42266
MSAI Group: 10413

Sample ID: UST-010-MW

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB Bldg. 1608

MSAI Sample: 42267
MSAI Group: 10413
Date Reported: 11/30/95

Discard Date: 12/30/95
Date Submitted: 11/15/95
Date Sampled: 11/15/95
Collected by: KM
Purchase Order:
Project No.:

Sample ID: UST-011-MW
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	4.4	ug/l	(1) 1.0
	Bromodichloromethane	2.0	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	10.5	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	1.1	ug/l	1.0
	1,1-Dichloroethene	5.5	ug/l	1.0
	trans-1,2-Dichloroethene	19.6	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	3.1	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	2,000	ug/l	100

Mountain States Analytical
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Operational Technologies Corporation

MSAI Sample: 42267
MSAI Group: 10413

Sample ID: UST-011-MW

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	2.0	mg/l	2.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

) The continuing calibration verification for Benzene and Ethylbenzene did not meet method requirements. The results are therefore approximate.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB Bldg. 1608

MSAI Sample: 42268
MSAI Group: 10413
Date Reported: 11/30/95

Discard Date: 12/30/95
Date Submitted: 11/15/95
Date Sampled: 11/15/95
Collected by: KM
Purchase Order:
Project No.:

Sample ID: UST-012-MW
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation	
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020				
	Benzene	1.2	ug/l	(1)	1.0
	Bromodichloromethane	ND	ug/l		1.0
	Bromoform	ND	ug/l		1.0
	Bromomethane	ND	ug/l		1.0
	Carbon tetrachloride	ND	ug/l		1.0
	Chlorobenzene	ND	ug/l		1.0
	Chloroethane	ND	ug/l		1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l		1.0
	Chloroform	1.6	ug/l		1.0
	Chloromethane	ND	ug/l		1.0
	Dibromochloromethane	ND	ug/l		1.0
	1,2-Dichlorobenzene	ND	ug/l		1.0
	1,3-Dichlorobenzene	ND	ug/l		1.0
	1,4-Dichlorobenzene	ND	ug/l		1.0
	Dichlorodifluoromethane	ND	ug/l		3.0
	1,1-Dichloroethane	ND	ug/l		1.0
	1,2-Dichloroethane	ND	ug/l		1.0
	1,1-Dichloroethene	ND	ug/l		1.0
	trans-1,2-Dichloroethene	ND	ug/l		1.0
	Methylene chloride (Dichloromethane	ND	ug/l		2.0
	1,2-Dichloropropane	ND	ug/l		1.0
	cis-1,3-Dichloropropene	ND	ug/l		1.0
	trans-1,3-Dichloropropene	ND	ug/l		1.0
	Ethylbenzene	ND	ug/l		1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l		1.0
	Tetrachloroethene	ND	ug/l		1.0
	Toluene	ND	ug/l		1.0
	1,1,1-Trichloroethane	ND	ug/l		1.0
	1,1,2-Trichloroethane	ND	ug/l		1.0
	Trichloroethene	2.9	ug/l		1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 42268
MSAI Group: 10413

Sample ID: UST-012-MW

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	3.5	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

(1) The continuing calibration verification for Benzene did not meet method requirements. This result is therefore approximate.

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB Bldg. 1608

MSAI Sample: 42269
MSAI Group: 10413
Date Reported: 11/30/95

Discard Date: 12/30/95
Date Submitted: 11/15/95
Date Sampled: 11/15/95
Collected by: KM
Purchase Order:
Project No.:

Sample ID: UST-1608-dup
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	7.8	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	8.8	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	1.0
	1,1-Dichloroethane	ND	ug/l	3.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	5.6	ug/l	1.0
	trans-1,2-Dichloroethene	15.7	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	1.0
	1,2-Dichloropropane	ND	ug/l	2.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	5.5	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0
		1,970	ug/l	100

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 42269
MSAI Group: 10413

Sample ID: UST-1608-dup

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	2.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB Bldg. 1608

MSAI Sample: 42270
MSAI Group: 10413
Date Reported: 11/30/95

Discard Date: 12/30/95
Date Submitted: 11/15/95
Date Sampled: 11/15/95
Collected by: KM
Purchase Order:
Project No.:

Sample ID: UST-1608-RB
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	3.7	ug/l	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 42270
MSAI Group: 10413

Sample ID: UST-1608-RB

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB Bldg. 1608

MSAI Sample: 42271
MSAI Group: 10413
Date Reported: 11/30/95

Discard Date: 12/30/95
Date Submitted: 11/15/95
Date Sampled: 11/15/95
Collected by: KM
Purchase Order:
Project No.:

Sample ID: UST-1608-FB
Matrix: Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	ND	ug/l	1.0
	Bromodichloromethane	ND	ug/l	1.0
	Bromoform	ND	ug/l	1.0
	Bromomethane	ND	ug/l	1.0
	Carbon tetrachloride	ND	ug/l	1.0
	Chlorobenzene	ND	ug/l	1.0
	Chloroethane	ND	ug/l	1.0
	2-Chloroethyl Vinyl Ether	ND	ug/l	1.0
	Chloroform	ND	ug/l	1.0
	Chloromethane	ND	ug/l	1.0
	Dibromochloromethane	ND	ug/l	1.0
	1,2-Dichlorobenzene	ND	ug/l	1.0
	1,3-Dichlorobenzene	ND	ug/l	1.0
	1,4-Dichlorobenzene	ND	ug/l	1.0
	Dichlorodifluoromethane	ND	ug/l	3.0
	1,1-Dichloroethane	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
	1,1-Dichloroethene	ND	ug/l	1.0
	trans-1,2-Dichloroethene	ND	ug/l	1.0
	Methylene chloride (Dichloromethane	ND	ug/l	2.0
	1,2-Dichloropropane	ND	ug/l	1.0
	cis-1,3-Dichloropropene	ND	ug/l	1.0
	trans-1,3-Dichloropropene	ND	ug/l	1.0
	Ethylbenzene	ND	ug/l	1.0
	1,1,2,2-Tetrachloroethane	ND	ug/l	1.0
	Tetrachloroethene	ND	ug/l	1.0
	Toluene	ND	ug/l	1.0
	1,1,1-Trichloroethane	ND	ug/l	1.0
	1,1,2-Trichloroethane	ND	ug/l	1.0
	Trichloroethene	ND	ug/l	1.0

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 42271
MSAI Group: 10413

Sample ID: UST-1608-FB

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	ug/l	1.0
	Vinyl chloride	ND	ug/l	1.0
	Xylenes (total)	ND	ug/l	1.0
	1,2-Dichloroethane	ND	ug/l	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	ND	mg/l	1.0
8117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB Bldg. 1608

MSAI Sample: 42345
MSAI Group: 10413
Date Reported: 11/30/95

Discard Date: 12/30/95
Date Submitted: 11/15/95
Date Sampled: 11/15/95
Collected by:
Purchase Order:
Project No.:

Sample ID: UST-010-MW MS
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	81.0	%Recovery	1.0
	Bromodichloromethane	ND	%Recovery	1.0
	Bromoform	203	%Recovery	1.0
	Bromomethane	ND	%Recovery	1.0
	Carbon tetrachloride	119	%Recovery	1.0
	Chlorobenzene	113	%Recovery	1.0
	Chloroethane	ND	%Recovery	1.0
	2-Chloroethyl Vinyl Ether	ND	%Recovery	1.0
	Chloroform	108	%Recovery	1.0
	Chloromethane	ND	%Recovery	1.0
	Dibromochloromethane	ND	%Recovery	1.0
	1,2-Dichlorobenzene	80.0	%Recovery	1.0
	1,3-Dichlorobenzene	80.0	%Recovery	1.0
	1,4-Dichlorobenzene	83.0	%Recovery	1.0
	Dichlorodifluoromethane	ND	%Recovery	3.0
	1,1-Dichloroethane	110	%Recovery	1.0
	1,2-Dichloroethane	94.0	%Recovery	1.0
	1,1-Dichloroethene	96.0	%Recovery	1.0
	trans-1,2-Dichloroethene	113	%Recovery	1.0
	Methylene chloride (Dichloromethane	141	%Recovery	2.0
	1,2-Dichloropropane	ND	%Recovery	1.0
	cis-1,3-Dichloropropene	ND	%Recovery	1.0
	trans-1,3-Dichloropropene	ND	%Recovery	1.0
	Ethylbenzene	82.0	%Recovery	1.0
	1,1,2,2-Tetrachloroethane	122	%Recovery	1.0
	Tetrachloroethene	120	%Recovery	1.0
	Toluene	78.0	%Recovery	1.0
	1,1,1-Trichloroethane	111	%Recovery	1.0
	1,1,2-Trichloroethane	111	%Recovery	1.0
	Trichloroethene	118	%Recovery	1.0

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 42345
MSAI Group: 10413

Sample ID: UST-010-MW MS

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	%Recovery	1.0
	Vinyl chloride	ND	%Recovery	1.0
	Xylenes (total)	90.0	%Recovery	1.0
	1,2-Dichloroethane	ND	%Recovery	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	118 %	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

Mountain States Analytical
The Quality Solution

Operational Technologies Corporation
4100 N.W. Loop 410
Suite 230
San Antonio, TX 78229-4253

Attn: Mr. Russell Cason
Project: Utah ANGB Bldg. 1608

MSAI Sample: 42346
MSAI Group: 10413
Date Reported: 11/30/95

Discard Date: 12/30/95
Date Submitted: 11/15/95
Date Sampled: 11/15/95
Collected by:
Purchase Order:
Project No.:

Sample ID: UST-010-MW MSD
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Benzene	82	%Recovery	0
	Bromodichloromethane	ND	%Recovery	1.0
	Bromoform	218	%Recovery	0
	Bromomethane	ND	%Recovery	1.0
	Carbon tetrachloride	115	%Recovery	0
	Chlorobenzene	110	%Recovery	0
	Chloroethane	ND	%Recovery	1.0
	2-Chloroethyl Vinyl Ether	ND	%Recovery	1.0
	Chloroform	107	%Recovery	0
	Chloromethane	ND	%Recovery	1.0
	Dibromochloromethane	ND	%Recovery	1.0
	1,2-Dichlorobenzene	81	%Recovery	0
	1,3-Dichlorobenzene	80	%Recovery	0
	1,4-Dichlorobenzene	84	%Recovery	0
	Dichlorodifluoromethane	ND	%Recovery	3.0
	1,1-Dichloroethane	110	%Recovery	0
	1,2-Dichloroethane	94	%Recovery	0
	1,1-Dichloroethene	94	%Recovery	0
	trans-1,2-Dichloroethene	111	%Recovery	0
	Methylene chloride (Dichloromethane	126	%Recovery	0
	1,2-Dichloropropane	ND	%Recovery	1.0
	cis-1,3-Dichloropropene	ND	%Recovery	1.0
	trans-1,3-Dichloropropene	ND	%Recovery	1.0
	Ethylbenzene	82	%Recovery	0
	1,1,2,2-Tetrachloroethane	118	%Recovery	0
	Tetrachloroethene	118	%Recovery	0
	Toluene	79	%Recovery	0
	1,1,1-Trichloroethane	110	%Recovery	0
	1,1,2-Trichloroethane	112	%Recovery	0
	Trichloroethene	120	%Recovery	0

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Mountain States Analytical
The Quality Solution

Operational Technologies Corporation

MSAI Sample: 42346
MSAI Group: 10413

Sample ID: UST-010-MW MSD

Test	Analysis	Results as Received	Units	Limit of Quantitation
4078	Purgeable Aromatics/Halocarbons Method: SW-846 8010A/8020			
	Trichlorofluoromethane	ND	%Recovery	1.0
	Vinyl chloride	ND	%Recovery	1.0
	Xylenes (total)	90	%Recovery	0
	1,2-Dichloroethane	ND	%Recovery	1.0
5535	Petroleum Hydrocarbons, Total Method: SW-846 8015 MOD	101 %	mg/l	1.0
3117	TPH 8015 Extraction, Water Method: SW-846 8015 MOD	Complete	mg/l	

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Lyle Gregory Covino
Project Manager

MEMBER ACIL

APPENDIX H

EVALUATION RANK CRITERIA ANALYSIS FOR DETERMINING SOIL CLEANUP LEVELS

EVALUATION RANK CRITERIA ANALYSIS FOR DETERMINING SOIL CLEANUP LEVELS

The State of Utah Department of Health Division of Environmental Health released a memorandum in 1990 titled: Use of the Guideline Document for Estimating Numeric Cleanup Levels for Petroleum-Contaminanted Soil at Underground Storage Tank Release Sites. According to the memorandum, state cleanup levels are determined by evaluating site specific parameters of environmental sensitivity. Three levels of environmental sensitivity have been selected and are representative of a variety of conditions in Utah that range from most to least conducive to contaminant leaching. Each criterion is ranked on a numeric scale according to high, medium, and low potential for migration and/or impacting groundwater, or posing a threat to human health and the environment. Numeric ranges of environmental sensitivity are as follows: Level I is less than 40, Level II is between 40 and 65, and Level III is greater than 65. Based on the evaluation criteria provided below, the former UST, Building 1608 site was calculated to be 60, Level II environmental sensitivity. The following guidelines were used to determine site cleanup level score.

1. **Distance from Contamination to Groundwater**: The depth to groundwater, in feet below land surface, must consider the highest seasonal average. In some cases, depth to groundwater and subsurface contamination are both relatively deep. The depths to groundwater shown below also apply to the distance from the lowest vertical extent of contamination to groundwater. In addition, recharge areas are considered to be as environmentally sensitive as the lowest distance from contamination to groundwater. Sites located in recharge areas may therefore be scored 20 points.

Distance to Groundwater	Ranking Score	Site Score
> 100	0	
100 to 75	4	
50 to 75	8	
25 to 50	12	
10 to 25	16	
< 10, or recharge area	20	20

Rationale for score: groundwater was found between 5 and 6 feet BLS during the SSI.

2. **Native Soil Type**: The predominant site lithology and native soil type will be determined by soils classified according to the Unified Soil Classification. The level of environmental sensitivity is determined by the permeability of the soil and the ease with which contaminants migrate through the soil.

	Native Soil Type	Ranking Score	Site Score
a.	*Low Permeability* (clay, shale, fat clay, high plasticity clay, elastic silt, low plasticity silt, lean clay, silty clay, sandy clay, silty or clayey fine sand, very fine sand, gravelly clay, unfractured igneous and metamorphic rocks, and consolidated, cemented sedimentary rocks; USC = Pt, OH, CH, MH, OL, CL, ML).	0	0
b.	*Moderate Permeability* (clayey sand, poorly graded sand-clay mixtures, silty sand, poorly graded sand-silt mixtures, moderately fractured igneous and metamorphic rocks, moderately permeable limestone; USC = SC, SM).	10	
c.	*High Permeability* (fine sand, silty sand, sand, gravel, gravelly sand, clayey gravel, gravel-sand-clay-silt mixtures, silty gravel, highly fractured igneous and metamorphic rocks, vesicular igneous rocks, cavernous or karstic limestone; USC = SM, SP, SW, GC, GM, GP, GW)	20	

Rationale for score: Soil encountered at the site were clays and clay with silty sand of low permeablity.

3. **Annual Precipitation**: The average annual precipitation in a specific area must be identified in order to evaluate the effects of recharge and potential for mobilization of contaminants.

Annual Precipitation (inches)	Ranking Score	Site Score
<10	0	5
10 to 20	5	
>20	10	

Rationale for score: Annual precipiation for the base is 12 inches/year (OpTech, 1995).

4. **Distance to Nearest Municipal Water Production Well**: A municipal water production well is assumed to be a well designed to supply groundwater for community consumption. The distances from subsurface contamination to a municipal production well, and the corresponding scores shown below, are based on local and regional knowledge of the properties of the deep confined aquifers that occupy many of the basins in Utah, and those which are tapped by production wells.

Distance to Nearest Production Well (feet)	Ranking Score	Site Score
>5,280	0	0
5,280 to 1,320	8	
1,320 to 500	10	
<500	15	

Rationale for score: The nearest producing wells are located greater than 1 mile from the base (OpTech, 1995).

5. **Distance to Other Wells**: Other wells will be defined as domestic, irrigation, and stockwatering wells that generally have less capacity, and thus small radius of influence, than municipal wells.

Distance to Other Well (feet)	Ranking Score	Site Score
>1,320	0	0
300 to 1,320	5	
<300	10	

Rationale for score: The nearest water wells are located more than 1,320 feet from the base (OpTech, 1995).

6. **Distance to Surface Water**: Surface water bodies include perennial rivers, streams, creeks, irrigation canals and ditches, lakes, and ponds.

Distance to Surface Water (feet)	Ranking Score	Site Score
>1,000	0	0
300 to 1,000	2	
<300	5	

Rationale for score: Surface water does not exist within 1,000 feet of the site (OpTech, 1995).

7. **Potentially Affected Populations**: The score for affected populations is based on the number of potential receptors within a three-mile radius of a release site, using census plot information. A three-mile radius is based on the ability of contaminants to travel three miles via utility conduits, or by other means. The potentially affected populations include residents, employees, campers, and others who regularly enter the area.

Affected Populations	Ranking Score	Site Score
<100	0	
100 to 3,000	10	
>3,000	20	20

Rationale for score: The population within 3-mile radius of the site exceeds 3,000 persons (Geoquest, 1995).

8. **Presence of On-Site or Adjacent Utility Conduits or Wells**: Utility conduits include water distribution lines, sewer lines, septic tanks, buried electrical lines, and any other conduit that may facilitate contaminant migration. Water well may also facilitate contaminant migration by acting as conduits due to faulty surface seals, or due to drawdown induced by pumping.

Presence of Adjacent or On-Site Utility Conduits or Wells	Ranking Score	Site Score
Not present	0	
Unknown	14	
Present	15	15

Rationale for score: There are numerous utility conduits surrounding the site.

9. **Summation of Ranking Criteria to Determine Environmental Sensitivity and Cleanup Levels**: The summation of all of the above ranking scores will yield one value which shall be used to determine the appropriate soil cleanup levels on a case-by-case basis. The sensitivity levels are as follows:

Level I Sensitivity: For scores totaling	>65
Level II Sensitivity: For scores totaling	40 to 65
Level III Sensitivity: For scores totaling	<40
Total Score for Subject Site	**60**

APPENDIX I

DISPOSITION OF INVESTIGATION DERIVED WASTE

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RECOMMENDED DISPOSITION OF INVESTIGATIVE DERIVED WASTE.

A total of 21 drums of investigation derived waste (IDW) were generated during the 1994 and 1995 SSI field efforts. Six drums contain soil cuttings, 8 drums contain groundwater purged from the six monitoring wells installed during the SSI, 5 drums contain spent decontamination water, and 2 drums contain miscellaneous IDW (nitrile gloves, plastic sheeting, etc.). The contents of drums 2 through 5, 7, 8, and 12 have been disposed of by the ANG base.

Laboratory analyses of soil and groundwater investigation derived waste were performed to characterize the waste and to provide information useful for the ultimate disposal of the waste. Letter reports and tables prepared for the Utah ANG Base Environmental Coordinator, detailing the contents of the drums and the results of waste characterization are included in this appendix.

No contaminants were detected in soil and groundwater contained in Drums 2, 4, 5, 16, and 21. Low to high levels of volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH) (diesel and gasoline related organics) were detected in soil and groundwater contained in drums 1, 6, through 15, 17, 19, and 20. Based on toxicity characteristic leaching procedure soil, cutting generated during the SSI do not exhibit hazardous characteristics.

The contents of drums contaminated with petroleum fuel compounds only (BTEX and TPH), may be disposed in accordance with State of Utah Department of Environmental Quality - Division of Environmental Response and Remediation (DEQ/DERR) Petroleum Underground Storage Tank Section guidelines. The contents of drums contaminated with solvent VOCs and other non-petroleum fuel related compounds may be regulated separately under the Hazardous and Solid Waste Division of the DEQ/DERR.

OPERATIONAL TECHNOLOGIES
CORPORATION

December 29, 1995

Lt. Jack Wall, Environmental Manager
151st ARG/EMB
Utah Air National Guard Base
765 North 2200 West
Salt Lake City, Utah 84116-2999

Subject: Characterization of investigation derived waste generated from October-November 1995 addendum SSI field work - UST Site at Building 1608.

Dear Lt. Wall:

Operational Technologies has prepared a summary table of characterization results for investigation derived waste (IDW) produced during the October-November 1995 addendum subsurface site investigation (SSI) field work for the petroleum underground storage tank investigation at the above-referenced site. The IDW generated consists of soil cuttings and groundwater produced from the installation and sampling of 13 Geoprobe locations and three monitoring wells at the site (MW-10, MW-11, and MW-12). All soil and groundwater samples used for the IDW characterization were submitted to Mountain States Analytical, Inc. (MSAI) in Salt Lake City, Utah. MSAI is a Utah State certified Leaking Underground Storage Tank (LUST) laboratory. Analytical results for the IDW characterization are summarized in Table 1 and Table 2. Laboratory analytica report sheets are included as Exhibit I. We understand that this information will be forwarded to the Utah Department of Environmental Quality - Division of Environmental Response and Remediation (DERR) as an aid for determining the final disposition of the waste.

Composite samples from each drum containing soil cuttings (drum no.s 14, 15, and 16) were submitted to the laboratory for volatile organic compound (VOC) analysis by United States Environmental Protection Agency (EPA) Methods SW8010 and SW8020, total petroleum hydrocarbons (TPH) by EPA Method SW8015 (modified), and for the toxicity characteristic leaching procedure (TCLP) for VOCs. Grab samples from each drum containing spent decontamination water (drum no.s 13 and 17) were submitted for VOC and TPH analyses by the same EPA methods.

Analytical data presented in Table 1 for drums containing purge water from the new monitoring wells (drum no.s 19, 20, and 21) represents the maximum concentration for each compound detected in groundwater samples collected during the 25 October 1995 and 15 November 1995 groundwater sampling events.

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The methylene chloride detected in samples of the spent decontamination water contained in drums 13 and 17 is a suspected laboratory contaminant or anomalous value due to the absence of that compound in the soil and groundwater samples collected from the drums. Methylene chloride was not used in the decontamination process.

Operational Technologies appreciates the continued opportunity to provide environmental services to the Utah Air National Guard and ANG/CEVR. Please do not hesitate to contact me if you need additional information or assistance to dispose of the IDW.

Sincerely,

Russell R. Cason, CPG
Project Manager

Attachments: as stated

cc: Hayley Wihongi, HQ ANG/CEVR
Optech Air National Guard file

Table 1
Results of Laboratory Analyses of Investigation Derived Waste (Water)
October - November 1995 SSI Field Work
151st ARG, Utah ANG, Salt Lake City, Utah

Drum No./Sample ID	Sample Matrix	VOCs (µg/L)		TPH (mg/L)	
No. 13/UST-1608-D13	Spent Decontamination Water	Methylene Chloride Toluene	475 61	TPH-DRO	68
No. 17/UST-1608-D17	Spend Decontamination Water	Methylene Chloride	799	TPH-0&G	4.1
No. 19/UST-012MW*	Groundwater from Monitoring Well UST-012MW	Benzene Chloroform Trichloroethene Bromodichloromethane	1.2 15.7 2.9 3.6	TPH-DRO	19.9
No. 20/UST-011MW*	Groundwater from Monitoring Well UST-011MW	Benzene Ethylbenzene Chloroform 1,1-Dichloroethene Trans-1,2-Dichloroethene Trichloroethene Tetrachloroethene Vinyl Chloride 1,2-Dichloroethane	4.8 4.1 10.5 6.0 19.6 2,760 1.6 1.0 1.1	TPH-DRO	2.0
No. 21/UST-010MW*	Groundwater from Monitoring Well UST-010MW	All Compounds	ND		ND

VOCs – Volatile Organic Compounds analyzed by USEPA Methods SW8010 and SW8020.
TPH – Total Petroleum Hydrocarbons analyzed by USEPA Method SW8015 (DRO – Diesel Range Organics; 0&G – Oil and Grease Range Organics).
* – Analytical results for each compound detected represent greatest concentration detected during 25 October 1995 and 15 November 1995 groundwater sampling rounds.
µg/L – micrograms per liter.
mg/L – milligrams per liter.
ND – Compound(s) not detected at method detection limit.
No. – Number.
ID – Identification.
SSI – Subsurface Site Investigation.
USEPA – United States Environmental Protection Agency.

Table 2
Results of Laboratory Analyses of Investigation Derived Waste (Soil)
October - November 1995 SSI Field Work
151st ARG, Utah ANG, Salt Lake City, Utah

Drum No./Sample ID	Sample Matrix	VOCs (mg/kg)		TPH (mg/kg)		TCLP (mg/L)	
No. 14/UST-1608-D14	Soil Cuttings from Monitoring Well UST-010MW	Benzene Bromoform Chloroform Toluene Trichloroethene	0.024 0.026 0.054 0.039 0.026	TPH-O&G	132	All Compounds	ND
No. 15/UST-1608-D15	Soil Cuttings from Monitoring Well UST-011MW	1,1,1-Trichloroethane Trichloroethene	0.054 0.612		ND	All Compounds	ND
No. 16/UST-1608-D16	Soil Cuttings from Monitoring Well UST-012MW	All Compounds	ND		ND	All Compounds	ND

VOCs – Volatile Organic Compounds analyzed by USEPA Methods SW8010 and SW8020.
TPH – Total Petroleum Hydrocarbons analyzed by USEPA Method 8015 modified (O&G – Oil and Grease Range Organics).
ND – Compound(s) not detected at method detection limit.
TCLP – Toxicity Characteristic Leaching Procedure.
Note: Soil samples are composite samples for each drum.
No. – Number.
ID – Identification.
mg/kg – milligrams per kilogram.
mg/L – milligrams per liter.
USEPA – United States Environmental Protection Agency.
SSI – Subsurface Site Investigation.

OPTECH

OPERATIONAL TECHNOLOGIES
CORPORATION

July 7, 1995

Lt. Jack Wall, Environmental Manager
151st ARG/EMB
Utah Air National Guard Base
765 North 2200 West
Salt Lake City, Utah 84116-2999

Subject: Investigation Derived Waste Characterization - UST Site at Building 1608

Dear Lt. Wall:

In accordance with your request, Operational Technologies has prepared a summary table of characterization results for investigation derived waste (IDW) produced during the petroleum underground storage tank investigation at the above-referenced site. The IDW generated consists of soil cuttings and groundwater produced from the installation and sampling of three monitoring wells at the site (MW-7, MW-8, and MW-9). We understand that this information will be forwarded to the Utah Department of Environmental Quality - Division of Environmental Response and Remediation (DERR) as an aid for determining the final disposition of the waste.

Operational Technologies appreciates the continued opportunity to provide environmental services to the Air National Guard Readiness Center. Please do not hesitate to contact me if you need additional information or assistance to dispose of the IDW.

Sincerely,

Russell R. Cason, CPG
Project Manager

Attachments: as stated

cc: Hayley Wihongi, ANGRC/CEVR
Optech Air National Guard file

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Table 1
Results Laboratory Analyses
on Investigation Derived Waste
151st ARG, Utah ANG Base, Salt Lake City, Utah

Drum I.D.	Contents	Analytical Method	Analytical Results	
1	Monitoring Well Soil cuttings	BTEX/SW8020	Benzene Toluene Ethylbenzene Total Xylenes	0.459 mg/kg 1.030 mg/kg 0.451 mg/kg 2.140 mg/kg
		TCLP Volatiles	Toluene* Total Xylenes* Cyclohexane*	33 µg/l 140 µg/l 40 µg/l
		TCLP Semivolatiles	None Detected	
2	Spent Decontamination Water	BTEX/SW8020	None Detected	
3	Miscellaneous IDW (Decontaminated)	N/A	N/A	
4	Spent Decontamination Water	BTEX/SW8020	None Detected	
5	Spent Decontamination Water	BTEX/SW8020	None Detected	

Table 1 (Continued)
Results Laboratory Analyses
on Investigation Derived Waste
151st ARG, Utah ANG Base, Salt Lake City, Utah

Drum I.D.	Contents	Analytical Method	Analytical Results	
6	Purge and Development Water-Monitoring Well UST-007MW (November 1994)	BTEX/SW8020	Benzene	4,600 µg/l
			Toluene	2,300 µg/l
			Ethylbenzene	240 µg/l
			Total Xylenes	1,300 µg/l
		TPH/SW8015 Mod.	TPH-GRO	47,000 µg/l
			TPH-DRO	1,400 µg/l
7	Purge and Development Water-Monitoring Well UST-008MW (November 1994)	BTEX/SW8020		None Detected
		TPH/SW8015 Mod.	TPH-GRO	None Detected
			TPH-GRO	55 µg/l
8	Purge and Development Water-Monitoring Well UST-009MW (November 1994)	BTEX/SW8020		None Detected
		TPH/SW8015	TPH-GRO	190 µg/l
			TPH-DRO	60 µg/l
9	Monitoring Well Soil Cuttings	BTEX/SW8020		None Detected
		TCLP Volatiles	Toluene*	33 µg/l
			Total Xylenes*	140 µg/l
			Cyclohexane*	40 µg/l
		TCLP Semivolatiles		None Detected

Table 1 (Concluded)
Results Laboratory Analyses
on Investigation Derived Waste
151st ARG, Utah ANG Base, Salt Lake City, Utah

Drum I.D.	Contents	Analytical Method	Analytical Results	
10	Monitoring Well Soil Cuttings	BTEX/SW8020		None Detected
		TCLP Volatiles	Toluene*	33 µg/l
			Total Xylenes*	140 µg/l
			Cyclohexane*	40 µg/l
		TCLP Semivolatiles		None Detected
11	Purge and Development Water-Monitoring Well UST-007MW (March 1995)	BTEX/SW8020	Benzene	11,000 µg/l
			Toluene	8,300 µg/l
			Ethylbenzene	960 µg/l
			Total Xylenes	5,600 µg/l
		TPH/SW8015 Mod.	TPH-GRO	77,000 µg/l
			TPH-DRO	1,200 µg/l
12	Purge and Development Water-Monitoring Wells UST-008MW and UST-009MW (March 1995)	BTEX/SW8020	Benzene	8.4 µg/l
			Toluene	20 µg/l
			Ethylbenzene	2.2 µg/l
			Total Xylenes	12 µg/l
13	Spent Decontamination Water	BTEX/SW8020		None Detected

* – Compound not regulated under 40 CFR 261.24. Analyzed by TCLP method at client's request. Composite sample of soil cuttings from drum numbers 1, 9, and 10.
BTEX – Benzene, Toluene, Ethylbenzene, and Xylene isomers.
TCLP – Toxicity Characteristic Leaching Procedure.
IDW – Investigation derived waste.
TPH – Total Petroleum Hydrocarbons.
GRO – Gasoline Range Organics.
DRO – Diesel Range Organics.
Mod. – Modified Method.

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OPERATIONAL TECHNOLOGIES
CORPORATION

March 30, 1995

Lt. Jack Wall, Environmental Manager
151st ARG/EMB
Utah Air National Guard Base
765 North 2200 West
Salt Lake City, Utah 84116-2999

Subject: Investigation Derived Waste Characterization - UST Site at Building 1608

Dear Lt. Wall:

Provided are summary tables and laboratory analytical reports for soil and groundwater samples collected from the above-referenced site to assist you in determining disposal options for investigation derived waste (IDW) generated during the site investigation (SI). According to Ms. Kate Johnson of the Utah Department of Environmental Quality - Division of Environmental Response and Remediation (DERR), the State does not have specific guidelines for the analytical testing of UST site IDW for disposal purposes. Ms. Johnson related that analytical testing requirements for the offsite disposal of IDW would be dictated by the disposal contractor.

The soil cuttings contained in drums 1, 3, 9, and 10 were generated during the drilling of monitor wells UST-007MW through UST-009MW. The results of toxicity characteristic leaching procedure (TCLP) analysis of these soil cuttings did not indicate volatile or semivolatile TCLP parameters exceeding Federal limits. Copies of the laboratory reports for the TCLP analysis are attached. No laboratory analyses other than TCLP were performed on monitor well cuttings contained in drums 1, 3, 9, and 10. Field screening results (using a portable gas chromatograph) of auger cuttings and soil samples from the monitoring well boreholes indicated the presence of benzene, toluene, ethylbenzene, and xylene (BTEX), as well as tetrachloroethene (PCE), trichloroethene (TCE), and dichloroethene (DCE). Therefore, additional testing may be required by the waste disposal contractor prior to acceptance. It should be noted that BTEX was confirmed in soil samples submitted for laboratory analyses, however, PCE, TCE, and DCE were not.

Decontamination water used to clean the drilling rig augers, soil probes used for the push-sample soil borings, and other sampling equipment was not submitted for laboratory analyses (drum nos. 2, 4, and 5). The decontamination waste water did contact contaminated soil in the push-sample soil borings and monitor well boreholes drilled at the site. Table 1 provides a summary of the maximum analyte concentrations detected by laboratory analyses in soil samples from the push-sample soil borings. Decontamination water may contain analytes confirmed in soil samples by

laboratory analyses, or indicated by field screening of soil collected from the monitoring wells and push-sample soil borings. Therefore, additional testing may be required by the waste disposal contractor prior to acceptance of drum nos. 2, 4, and 5 containing decontamination water.

The laboratory analytical results of groundwater samples collected from the monitoring wells during the November 1994 and March 1995 groundwater sampling events are considered to be representative of contaminant concentrations in development and purge water from those wells. The development and purge water is contained in drums 6, 7, 8, 11, and 12. Tables 2 through 7 summarize the results of groundwater sample laboratory analyses for each well during both groundwater sampling events. Copies of the laboratory analytical reports are attached.

Operational Technologies appreciates the opportunity to provide environmental services to the Air National Guard Readiness Center. Please do not hesitate to contact me if you have any questions.

Sincerely,

Russell R. Cason, CPG
Project Manager

Attachments: as stated

cc: Hayley Wihongi, ANGRC/CEVR
Air National Guard file

Table 1
Maximum Analyte Concentrations Detected by Laboratory Analyses in Push-Sample Soil Boring Samples from Former UST 1608 Site 151th ARG, Utah ANG Base, Salt Lake City, Utah

Analyte	Maximum Concentration in Soil Samples
BTEX	
Benzene	1,300 µg/kg
Toluene	690 µg/kg
Ethylbenzene	69 µg/kg
Xylenes (total)	25,000 µg/kg
TPH	
TPH-Gasoline	3,500 mg/kg
TPH-Diesel	100 mg/kg

mg/kg – Milligrams per kilogram.
µg/kg – Micrograms per kilogram.
BTEX - Total benzene, toluene, ethylbenzene, and xylene isomers.
TPH - Total petroleum hydrocarbons.

Table 2
Laboratory Analyses of Groundwater from UST-007MW - Drum 6 Accumulated November 1994 151th ARG, Utah ANG Base, Salt Lake City, Utah

Analyte	Maximum Concentration in Groundwater samples
BTEX	
Benzene	4,600 µg/L
Toluene	2,300 µg/L
Ethylbenzene	240 µg/L
Xylenes (total)	1,300 µg/L
TPH	
TPH-Gasoline	47,000 µg/L
TPH-Diesel	1,400 µg/L

µg/L – Micrograms per liter.
BTEX - Total benzene, toluene, ethylbenzene, and xylene isomers.
TPH - Total petroleum hydrocarbons.

Table 3
Laboratory Analyses of
Groundwater from UST-007MW - Drum 11
Accumulated March 1995
151th ARG, Utah ANG Base, Salt Lake City, Utah

Analyte	Maximum Concentration in Groundwater samples
BTEX	
Benzene	11,000 µg/L
Toluene	8,300 µg/L
Ethylbenzene	960 µg/L
Xylenes (total)	5,600 µg/L
TPH	
TPH-Gasoline	77,000 µg/L
TPH-Diesel	1,200 µg/L

µg/L – Micrograms per liter.
BTEX - Total benzene, toluene, ethylbenzene, and xylene isomers.
TPH - Total petroleum hydrocarbons.

Table 4
Laboratory Analyses of
Groundwater from UST-008MW - Drum 7
Accumulated November 1994
151th ARG, Utah ANG Base, Salt Lake City, Utah

Analyte	Maximum Concentration in Groundwater Samples
BTEX	
Benzene	ND
Toluene	ND
Ethylbenzene	ND
Xylenes (total)	ND
TPH	
TPH-Gasoline	ND
TPH-Diesel	55 µg/L

µg/L – Micrograms per liter.
BTEX - Total benzene, toluene, ethylbenzene, and xylene isomers.
TPH - Total petroleum hydrocarbons.

Table 5
Laboratory Analyses of
Groundwater from UST-008MW - Drum 12
Accumulated March 1995
151th ARG, Utah ANG Base, Salt Lake City, Utah

Analyte	Maximum Concentration in Groundwater Samples
BTEX	
Benzene	2.7 µg/L
Toluene	6.9 µg/L
Ethylbenzene	0.81 µg/L
Xylenes (total)	4.6 µg/L
TPH	
TPH-Gasoline	80 µg/L
TPH-Diesel	180 µg/L

µg/L – Micrograms per liter.
BTEX - Total benzene, toluene, ethylbenzene, and xylene isomers.
TPH - Total petroleum hydrocarbons.

Table 6
Laboratory Analyses of
Groundwater from UST-009MW - Drum 8
Accumulated November 1994
151th ARG, Utah ANG Base, Salt Lake City, Utah

Analyte	Maximum Concentration in Groundwater Samples
BTEX	
Benzene	ND
Toluene	ND
Ethylbenzene	ND
Xylenes (total)	ND
TPH	
TPH-Gasoline	190 µg/L
TPH-Diesel	60 µg/L

µg/L – Micrograms per liter.
BTEX - Total benzene, toluene, ethylbenzene, and xylene isomers.
TPH - Total petroleum hydrocarbons.

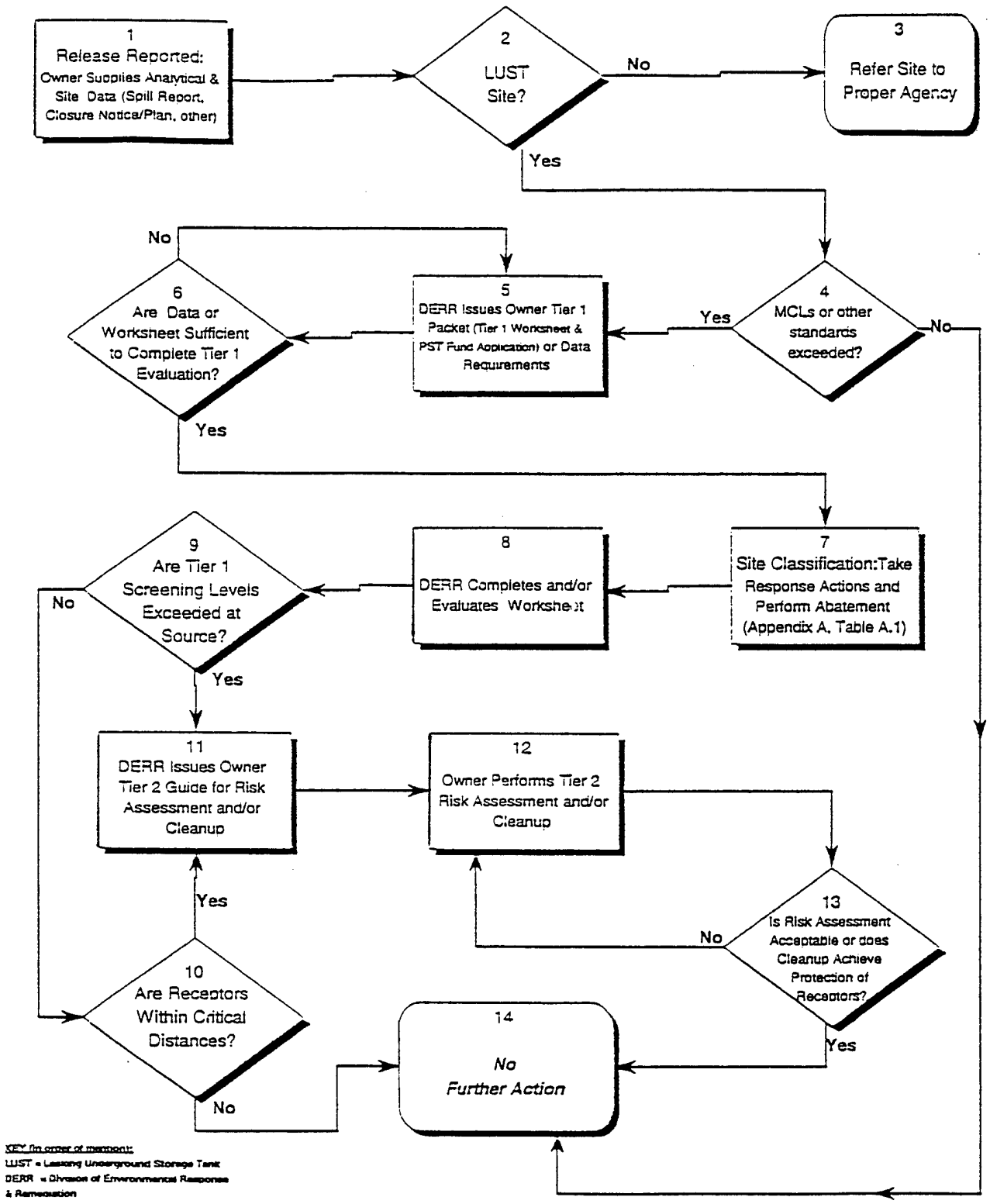
Table 7
Laboratory Analyses of
Groundwater from UST-009MW - Drum 12
Accumulated November 1994
151th ARG, Utah ANG Base, Salt Lake City, Utah

Analyte	Maximum Concentration in Groundwater Samples
BTEX	
Benzene	8.4 µg/L
Toluene	20 µg/L
Ethylbenzene	2.2 µg/L
Xylenes (total)	12 µg/L
TPH	
TPH-Gasoline	130 µg/L
TPH-Diesel	170 µg/L

µg/L – Micrograms per liter.
BTEX - Total benzene, toluene, ethylbenzene, and xylene isomers.
TPH - Total petroleum hydrocarbons.

APPENDIX J

UTAH TIER I RISK-BASED CORRECTIVE ACTION



SOURCE: GUIDELINES FOR UTAH'S TIER I RISK-BASED CORRECTIVE ACTION (UTAH DEQ, 1995)

DRAFT

FIGURE J.1

SALT\DERR

UTAH DERR RBCA TIER I SCREENING PROCESS

151st ARG, Utah ANG Base
Salt Lake City, Utah

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

APRIL 1996

Table 2

Utah's RBCA Tier 1 Worksheet

FACILITY INFORMATION

BUILDING 1608
Facility Name
765 NORTH 2200 WEST SALTLAKECITY
Location/Address (no Box Numbers)
UTAH AIR NATIONAL GUARD 151 ARW
Facility Owner Name Address (City/State/Zip Code)
(801) 595-2157
Facility Owner Phone # Area Code Phone Number

(For DERR Use Only)
Facility ID #:
Release ID: Release
Notification Date: Release
Reported By:
DERR Project Manager:
Person Completing Worksheet:

SITE ASSESSMENT INFORMATION

(For DERR Use Only)
a. Site Classification
(use Table A-1 for most precise classification)
Classification:
Impacts:
Required Response Actions:

b. Contaminant Source Information

Product Released	Amount Released (gal)	Cause of Release (if known)
Gasoline	____	___tank ___piping ___dispenser ___overfill/spill
Diesel	____	___tank ___piping ___dispenser ___overfill/spill
Waste Oil	____	___tank ___piping ___dispenser ___overfill/spill
Unknown	____	___tank ___piping ___dispenser ___overfill/spill
Other JP-4 Fuel	UNK	___tank ___piping ___dispenser ___overfill/spill

Sources Removed: ✓tank ✓piping ✓dispenser __free product __contaminated soil

c. Land Use Information

Current Land Use at the Site: _____ residential _____ commercial ___✓___ industrial
Surrounding Neighborhood: _____ residential ___✓___ commercial _____ industrial
*(Note: Surrounding land use is **Residential** if one or more residences share a common property line with the Facility)*

d. Soil Information

Depth to Contaminated Soil (feet below land surface): 3-4'
Soil Type(s): SILTY CLAY Depth (below land surface): _____
Method of Soil Type Identification (*check applicable*): ___✓___ Unified Soil Classification _____ Geologist's description

e. Groundwater Information

Was groundwater present in excavations? ✓ Yes __ No Thickness of Free Product: SHEEN
Depth to groundwater (feet below land surface): 5-6'
Is groundwater impacted at any concentration: ✓ Yes __ No
Groundwater flow direction (*circle applicable*): E, W, N, (S), (SE), (SW), NE, NW ____ Inferred? ✓ Measured?
Slope direction of surface topography (*circle applicable*): (E), (W), (N), (S) SE, SW, NE, NW

f. Distance from Source to Nearest Potential Receptor

(If any receptors are within 30 feet you must go to Tier 2)

Receptors (***enter distance to each in feet***)
Subsurface Utilities: <30 Water line <30 Sewer line <30 Natural Gas <30 Storm Drain <30 Telephone N/A Electrical ____ Other (specify)
550' Property Line <30 Buildings (specify type: ____ Residence ____ Commercial ✓ other, specify) INDUSTRIAL

For DERR Use Only
Distance to Other Receptors
(If any receptors are within 500 feet you must go to Tier 2)
Receptors Within 500 feet (*enter distance to each in feet and attach water well data sheets and maps, show facility location on each*)
Municipal Well Domestic Well Irrigation Well
Surface water (*specify type: lake, stream, creek, river, wetland*)

FACILITY SITE MAP

The owner/operator must submit a facility site map, as close as possible to scale, indicating the north direction, and shows locations of the following properly labeled features:

- Current and/or former UST systems (indicate product type for each)
- Utility lines (underground)
- Buildings or other structures
- Excavations
- Soil stockpiles
- Location of the release and known contamination
- Property lines
- Monitoring wells
- Sample locations

SUPPLEMENTAL INFORMATION
(For DERR Use Only)

Owner/Operator Must Submit Copies of Laboratory Analytical Data

RBCA TIER I SCREENING LEVEL EVALUATION
(For DERR Use Only)

	Groundwater (mg/L)		Soil (mg/kg)	
CONSTITUENT	Screening Level	Highest Concentration at Source	Screening Level	Highest Concentration at Source
Benzene	0.3		0.9	
Toluene	7		61	
Ethylbenzene	4		23	
Xylenes	73		235	
Naphthalene	0.1		10	
TPH-gasoline	10		1500	
TPH-diesel	10		5000	
Oil and Grease/TRPH	10		10000	

RECOMMENDED TIER I ACTIONS
(For DERR Use Only)

All contaminant concentration levels are below Tier I screening levels, and no receptors are within the critical distances.
Recommendation - No further action.

Contaminant concentration(s) exceed Tier I screening levels, or receptors are within applicable critical distances.
Recommendation - Perform a Tier 2 risk assessment or cleanup to applicable levels.

All contaminant concentrations are below Tier I screening levels but receptors are within the critical distances.
Recommendation - Cleanup to applicable levels.

Evaluation Completed by _____ Date _____

Signature _____