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13. ABSTRACT (Maximum 200 words)

RECENT FIELD INVESTIGATIONS IDENTIFIED A SMALL ALLUVIAL CHANNEL IMMEDIATELY NORTHEAST OF THE EXISTING NORTHWEST BOUNDARY SYSTEM THAT PROVIDES A PATHWAY FOR GROUND WATER TO FLOW AROUND THE SLURRY WALL. SAMPLES FROM THIS CHANNEL CONTAINED DLDRN AT LEVELS ABOVE THE ARAR'S FOR THE NORTH BOUNDARY SYSTEM.

THE OBJECTIVE OF THE NORTHWEST BOUNDARY SYSTEM SHORT TERM IMPROVEMENTS INTERIM RESPONSE ACTION IS TO MITIGATE THE BYPASS OF CONTAMINATED ALLUVIAL GROUND WATER BY EXTENDING THE NWBS. THE EXTENSION IS TO UTILIZE METHODS EMPLOYED TO CONSTRUCT THE EXISTING SYSTEM (DEWATERING WELLS, RECHARGE WELLS, AND/OR A SLURRY WALL). THE TREATMENT OF EXTRACTED GROUND WATER WILL BE PERFORMED BY THE EXISTING TREATMENT PLANT.

THIS COMBINED ASSESSMENT AND DECISION DOCUMENT PROVIDES INFORMATION ON:

1. FIELD INVESTIGATIONS INCLUDING BORELOGS AND GRAIN SIZE REPORTS
2. HYDROGEOLOGY OF THE AREA
3. GROUND WATER QUALITY AND LEVEL

14. SUBJECT TERMS
HYDROGEOLOGY, CONTAMINANTS, IRA B, GROUNDWATER, WELL CONSTRUCTION DATA

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APPLICABLE OR RELEVANT AND APPROPRIATE
REQUIREMENTS FOR THE NORTHWEST BOUNDARY
SYSTEM, SHORT-TERM IMPROVEMENTS, INTERIM RESPONSE ACTION

1. Introduction

The objectives of this IRA are discussed elsewhere in this document. This IRA will be implemented prior to the final remediation to be undertaken in the context of the Onpost Operable Unit ROD. This IRA is a short-term action which will not include changes to the components of the current treatment system which treat the groundwater pumped into that system prior to its reinjection. The treatment components of this system will be evaluated during a subsequent phase of the evaluation of the NWBS.

2. Location-Specific ARARs

Location-specific requirements set restrictions on activities, depending on the characteristics of the site or the immediate environment, and function like action-specific requirements. Alternative remedial actions may be restricted or precluded, depending on the location or characteristics of the site and the requirements that apply to it.

Paragraph 44.2 of the Federal Facility Agreement provides that "wildlife habitat(s) shall be preserved and managed as necessary to protect endangered species of wildlife to the extent required by the Endangered Species Act (16 U.S.C. 1531 et seq.), migratory birds to the extent required by the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.), and bald eagles to the extent required by the Bald Eagle Protection Act, 16 U.S.C. 688 et seq."

While this provision is not an ARAR, the statutes themselves are applicable to this IRA and will be complied with. Based on where any extension to this treatment system will be located the Army believes that this IRA will have no adverse impact on any endangered species or migratory birds or on the protection of wildlife habitats. Coordination will be maintained with the U.S. Fish and Wildlife Service to ensure that no such adverse impact arises from implementation of this IRA.

The provisions of 40 CFR 6.302(a) and (b) regarding construction that would have an adverse impact on wetlands or be within a flood plain are considered relevant and appropriate to apply in the context of this IRA. Based upon where any extension to this system will be located the Army believes that there will be no adverse impact on wetlands from the construction related to any extension of this system. Coordination will be maintained with the U.S. Fish and Wildlife Service to ensure that any such adverse impacts are avoided or mitigated.

The regulations at 40 CFR 230 were reviewed and determined not to be applicable within the context of this IRA because on discharge of dredged or fill material into waters of the United States is contemplated. Because these regulations address only the disposal of such materials into waters of the United States, which is not contemplated, they are not considered to be relevant and appropriate to apply in the context of this IRA.

The regulations at 33 CFR 320-330 were reviewed and determined to be neither applicable nor relevant and appropriate because the IRA does not involve any of the activities, or similar to the activities, intended to be controlled by these regulations as defined in 33 CFR §320.1(b).

3. Action-Specific ARARs

Description

Performance, design, or other action-specific requirements set controls or restrictions on activities related to the management of hazardous substances, pollutants, or contaminants. These action-specific requirements may specify particular performance levels, actions, or technologies as well as specific levels (or a methodology for setting specific levels) for discharged or residual chemicals.

Construction of Treatment System

Air Emissions

On the remote possibility that there may be air emissions during the course of the construction of any extension of this treatment system, the Army has reviewed all potential ambient or chemical-specific air emission requirements. As a result of this review, the Army found that there are, at present, no National or State ambient air quality standards currently applicable or relevant and appropriate to any of the volatile or semivolatile chemicals in the ground water found in the area in which construction is contemplated.

In the context of this IRA, there is only a very remote chance of any release of volatiles or semivolatiles and, even if such a release did occur, it would only be intermittent and of very brief duration (because the activity that produced the release would be stopped and modified appropriately if a significant air emission was detected by the contractor's air monitoring specialist). The Army has significant experience with the construction of extraction and reinjection wells, virtually identical to those which would be constructed pursuant to any expansion of the NWBS, and has not experienced any problems from air emissions during construction of such facilities. This IRA does not contemplate extensive construction of wells, therefore

almost eliminating any chance of air emissions during construction. The construction of other facilities, including any piping and related material, is not expected to involve excavation at depths which could result in release of volatile organics, making any ambient air quality standards neither relevant nor appropriate to this construction activity. Monitoring will be conducted pursuant to the site-specific Health and Safety Plan to ensure that construction activities do not result in releases of volatile organics which could adversely impact ambient air quality.

The site-specific Health and Safety Plan will adequately address these concerns. This plan to be developed for use in this IRA will detail the site monitoring program and define any operational modifications to be implemented in the event monitoring detects specific levels of such emissions. This plan is developed after the actual construction site has been chosen and is based upon site-specific information. It will be available for review later in the IRA process.

The National Emissions Standards for Hazardous Air Pollutants (NESHAPS) were evaluated to determine whether they were applicable or relevant and appropriate to apply in the context of construction of this IRA. These standards were not considered applicable because they apply to stationary sources of these pollutants, not to construction activity. They were not considered relevant and appropriate because they were developed for manufacturing processes, which are significantly dissimilar to the short-term construction activity contemplated by this IRA.

The provisions of 40 CFR 50.6 will be considered relevant and appropriate. This standard is not applicable because it addresses Air Quality Control Regions, which are areas significantly larger than and different from the area of concern in this IRA. Pursuant to this regulation, there will be no particulate matter transported by air from the site that is in excess of 50 micrograms per cubic meter (annual geometric mean) and 150 micrograms per cubic meter (maximum 24-hour concentration) will not be exceeded more than once per year.

Worker Protection

The provision of 29 CFR 1910.120 are applicable to workers at the site because these provisions specifically address hazardous substance response operations under CERCLA. The final rule is found at 54 FR 9294 (March 6, 1989) and becomes effective on March 6, 1990.

General Construction Activities

The following performance, design, or other action-specific State ARARs have ben preliminarily identified by the Army as applicable to this portion of the IRA and more stringent than any applicable or relevant and appropriate Federal standard, requirement, criterion, or limitation:

Colorado Air Pollution Control Commission Regulation No. 1, 5 CCR 1001-3, Part III(D)(2)(b), Construction Activities:

a. Applicability - Attainment and Nonattainment Areas

b. General Requirement

Any owner or operator engaged in clearing or leveling of land or owner or operator of land that has been cleared of greater than one (1) acre in nonattainment areas for which fugitive particulate emissions will be emitted shall be required to use all available and practical methods which are technologically feasible and economically reasonable in order to minimize such emissions, in accordance with the requirements of Section III.D. of this regulation.

c. Applicable Emission Limitation Guideline

Both the 20% opacity and the no off-property transport emission limitation guidelines shall apply to construction activities; except that with respect to sources or activities associated with construction for which there are separate requirements set forth in this regulation, the emission limitation guidelines there specified as applicable to such sources and activities shall be evaluated for compliance with the requirements of Section III.D. of this regulation. (Cross Reference: Subsections e. and f. of Section III.D.2 of this regulation).

d. Control Measures and Operating Procedures

Control measures or operational procedures to be employed may include but are not necessarily limited to planting vegetation cover, providing synthetic cover, watering, chemical stabilization, furrows, compacting, minimizing disturbed area in the winter, wind breaks, and other methods or techniques.

Colorado Ambient Air Quality Standards, 5 CCR 1001-14, Air Quality Regulation A, Diesel-Powered Vehicle Emission Standards for Visible Pollutants:

a. No person shall emit or cause to be emitted into the atmosphere from any diesel-powered vehicle any air

contaminant, for a period greater than 10 consecutive seconds, which is of such a shade or density as to obscure an observer's vision to a degree in excess of 40% opacity, with the exception of Subpart B below.

b. No person shall emit or cause to be emitted into the atmosphere from any naturally aspirated diesel-powered vehicle of over 8,500 lbs gross vehicle weight rating operated above 7,000 feet (mean sea level), any air contaminant for a period greater than 10 consecutive seconds, which is of such a shade or density as to obscure an observer's vision to a degree in excess of 50% opacity.

c. Diesel-powered vehicles exceeding these requirements shall be exempt for a period of 10 minutes, if the emissions are a direct result of a cold engine start-up and provided the vehicle is in a stationary position.

d. This standard shall apply to motor vehicles intended, designed, and manufactured primarily for use in carrying passengers or cargo on roads, streets, and highways.

Colorado Noise Abatement Statute, C.R.S. Section 25-12-103:

a. Each activity to which this article is applicable shall be conducted in a manner so that any noise produced is not objectionable due to intermittence, beat frequency, or shrillness. Sound levels of noise radiating from a property line at a distance of twenty-five feet or more therefrom in excess of the db(A) established for the following time periods and zones shall constitute prima facie evidence that such noise is a public nuisance:

Zone	7:00 a.m. to next 7:00 p.m.	7:00 p.m. to next 7:00 a.m.
Residential	55 db(A)	50 db(A)
Commercial	60 db(A)	55 db(A)
Light Industrial	70 db(A)	65 db(A)
Industrial	80 db(A)	75 db(A)

b. In the hours between 7:00 a.m. and the next 7:00 p.m., the noise levels permitted in subsection (1) of this section may be increased by ten db(A) for a period of not to exceed fifteen minutes in any one-hour period.

c. Periodic, impulsive, or shrill noises shall be considered a public nuisance when such noises are at a sound level of five db(A) less than those listed in Subpart (a) of this section.

d. Construction projects shall be subject to the maximum permissible noise levels specified for industrial zones for the period within which construction is to be completed pursuant to any applicable construction permit issued by proper authority or, if no time limitation is imposed, for a reasonable period of time for completion of the project.

e. For the purpose of this article, measurements with sound level meters shall be made when the wind velocity at the time and place of such measurement is not more than five miles per hour.

f. In all sound level measurements, consideration shall be given to the effect of the ambient noise level created by the encompassing noise of the environment from all sources at the time and place of such sound level measurements.

In substantive fulfillment of Colorado Air Pollution Control Commission Regulation No. 1, this IRA will employ the specified methods for minimizing emission from fuel burning equipment and construction activities. In substantive fulfillment of Colorado's Diesel-Powered Vehicle Emission Standards, no diesel motor vehicles associated with the construction shall be operated in a manner that will produce emissions in excess of those specified in these standards.

The noise levels pertinent for construction activity provided in C.R.S. Section 25-12-103 will be attained in accordance with this applicable Colorado statute.

Wetlands Implications

Through estimation of the general area where a system would be located, the Army does not believe that any wetlands could be adversely affected. However, until a final design is selected and a final siting decision made, it cannot be definitively determined that no impact on wetlands will occur. If the final site selection and/or design results in an impact on wetlands, the Army will review the regulatory provisions concerning wetlands impact and other appropriate guidance, and will proceed in a manner consistent with those provisions. Coordination will be maintained with the U.S. Fish and Wildlife Service concerning any potential impacts on wetlands.

Land Disposal Restrictions and Removal of Soil

There are no action-specific ARARs that pertain to the excavation of soil during the construction of this treatment system.

EPA is currently developing guidance concerning the Land Disposal Restrictions (LDR) and their implication in CERCLA

actions. While guidance is limited, the Army has not determined that any waste subject to LDR will be present in the soil which may be removed during the construction and implementation of this IRA. Further guidance is likely to be developed prior to the implementation of this IRA and the Army will review such guidance as it is received. If it is determined that a waste subject to LDR is present in the soils to be removed during construction and implementation of this IRA, the Army will act in a manner consistent with EPA guidance then in effect for the management of such as the context of CERCLA cleanup actions.

Although the current guidance concerning removal of soil from the area where any treatment system expansion is expected to be located is a TBC, not an ARAR, it will be performed in accordance with the procedures set forth in the Task No. 32 Technical Plan, Sampling Waste Handling (November 1987), and EPA's July 12, 1985, memorandum regarding "EPA Region VIII Procedure for Handling of Materials from Drilling, Trench Excavation and Decontamination during CERCLA RI/FS Operations at the Rocky Mountain Arsenal." In general, any soils generated by excavation during the course of this IRA, either at surface or subsurface, will be returned to the location from which they originated (i.e., last out, first in). Any materials remaining after completion of backfilling that are suspected of being contaminated (based on field screening techniques) will be properly stored, sampled, analyzed, and ultimately disposed as CERCLA hazardous wastes, as appropriate.

For material determined to be hazardous waste, substantive RCRA provisions are applicable to their management. These substantive provisions include but are not limited to: 40 CFR Part 262 (Subpart C, Pre-Transport Requirements), 40 CFR part 263 (Transporter Standards), and 40 CFR Part 264 (Subpart I, Container Storage). The specific substantive standards applied will be determined by the factual circumstances of the accumulation, storage, or disposal techniques actually applied to any such material.

4. Compliance with the Other Environmental Laws

As is evident from the various portions of this document, this IRA was prepared in substantive compliance with CFR 1502.16 (the regulations implementing the National Environmental Policy Act of 1969).

REPORT OF FIELD INVESTIGATIONS, ASSESSMENT, AND PROPOSED DECISION DOCUMENT FOR THE NORTHWEST BOUNDARY SYSTEM SHORT-TERM IMPROVEMENTS INTERIM RESPONSE ACTION, RMA

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April 1990

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EXECUTIVE SUMMARY

By agreement of the Organizations and the State (OAS), the accelerated process for the Northwest Boundary System (NWBS) Short-Term Improvements calls for a combined report comprised of technical data obtained from recent field investigations, and a narrowly scoped Assessment/Decision Document. This combined report is intended to fill those requirements.

The recent field investigations identified a small alluvial channel immediately northeast of the existing NWBS that provides a pathway for alluvial groundwater to flow around the existing NWBS slurry wall. Groundwater flow through this channel is low, expected to be less than 20 gallons per minute. Samples from this recently discovered channel contained dieldrin at levels up to 0.368 ug/l, which is above the ARAR of 0.12 ug/l for the North Boundary System. Consequently, a northern extension of the NWBS across the newly found alluvial channel is proposed under the NWBS Short-Term Improvements. The extension will use methods employed to construct the existing system (i.e., extraction wells, recharge wells, and/or a slurry wall). Treatment of the extracted groundwater will be performed by the existing treatment plant. Shell, as Lead Party, shall design and implement the extension. An abbreviated Implementation Document for the extension will be issued by July 1, 1990. Construction is to be completed by November 30, 1990.

The recent field investigations did not show contaminated groundwater exceeding the ARAR levels for the North Boundary System to be bypassing the southern end of the existing NWBS. Consequently, the proposed NWBS Short-Term Improvements do not include a southern extension to the NWBS.

1.0 INTRODUCTION

Section 22 of the Federal Facility Agreement (FFA) (1989) identifies and describes the assessment and implementation of Interim Response Actions (IRAs) at the Rocky Mountain Arsenal (RMA). Paragraph 22.1(b)(ii) of the FFA provides for the assessment, selection, and implementation of any appropriate improvements to the Northwest Boundary System (NWBS) as necessary. The NWBS is located primarily in Section 22 of the RMA (Figure 1-1).

In light of data reported in the Comprehensive Monitoring Program Annual Ground Water Report for 1988 (Stollar 1989) showing low level contamination in the alluvial groundwater may be migrating from the RMA in the vicinity of the NWBS, the Organizations and the State (OAS) have determined that it is timely, appropriate, and beneficial to accelerate a field investigation, assessment, and extension(s) of the NWBS in the alluvium, if warranted by the assessment. Consequently, the OAS have agreed to divide the NWBS Improvements IRA into a first phase (the NWBS Short-Term Improvements) and a later phase (the NWBS Long-Term Improvements). Shell shall be the Lead Party for the NWBS Short-Term Improvements. The Army shall be the Lead Party for the NWBS Long-Term Improvements.

Any extension of the alluvial intercept system implemented under the NWBS Short-Term Improvements will utilize methods employed to construct the existing system (i.e., extraction wells, recharge wells, and/or a slurry wall; and use of the existing treatment plant). Any remaining aspects of the IRA remain within the scope of the NWBS Long-Term Improvements.

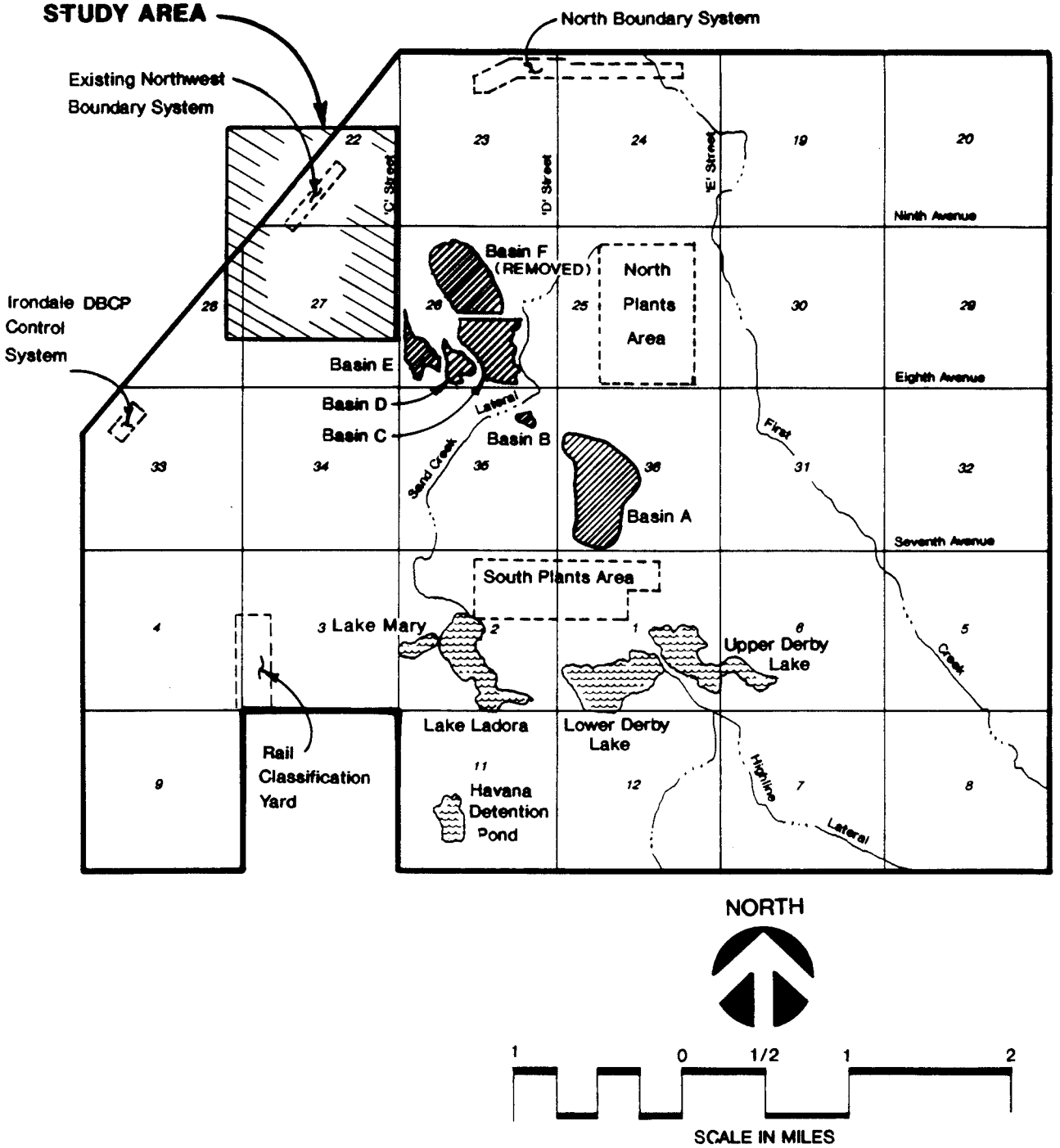


Figure: 1-1

LOCATION MAP OF NORTHWEST BOUNDARY SYSTEM

Prepared by:

MK-ENVIRONMENTAL SERVICES
A DIVISION OF MK-FERGUSON

As outlined in the letter from the U.S. Army, the OAS have agreed that the NWBS Short-Term Improvements will proceed on an accelerated schedule and will follow an abbreviated process. The NWBS Long-Term Improvements will follow the usual IRA process outlined in the FFA. For the NWBS Short-Term Improvements, this combined report, comprised of technical data obtained from Shell's recent field investigations, and a condensed Assessment/Decision process, is distributed to the OAS to fulfill the requirements for appropriate review and comment on this portion of the overall IRA.

This report (a) presents results of the recent NWBS field investigation, (b) provides the rationale for whether an extension to the NWBS is recommended under the NWBS Short-Term Improvements, (c) indicates the objective of the NWBS Short-Term Improvements, and (d) establishes a deadline for completion of construction of the NWBS Short-Term Improvements.

2.0 SITE DESCRIPTION

Section 2.0 provides a summary of the physical setting of the Northwest Boundary System and presents the results of recent field investigations conducted for the purpose of assessing the need for NWBS Short-Term Improvements. Additional information on site characteristics of the NWBS is provided in USACE (1986), Ebasco (1989), ESE (1989), and PMRMA (1989).

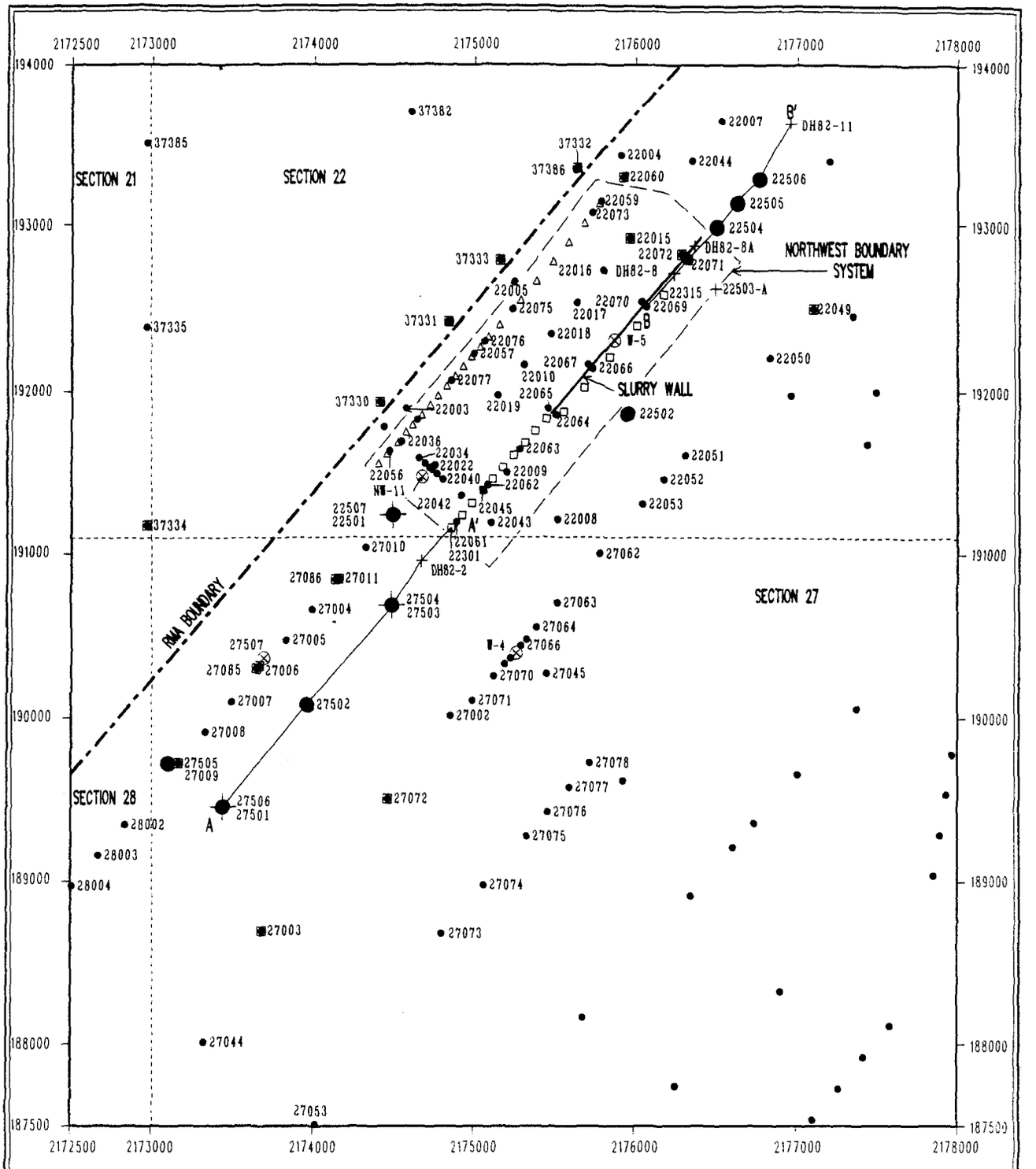
2.1 BACKGROUND

In 1980, a groundwater surveillance program by RMA and the U.S. Army Corps of Engineers identified a narrow contaminant plume in the alluvial groundwater leaving RMA to the north of Section 22. The Northwest Boundary Containment/Treatment System (NWBS) was completed in October 1984 to prevent offpost migration of contaminants in the alluvial groundwater.

Recent Army investigations (Stollar 1989 and ESE 1989) indicated that low level organic groundwater contaminants may be flowing around the ends of the boundary system and migrating offpost. A field investigation was conducted by Shell in early 1990 to determine whether contaminant bypass is occurring, and if so, to determine its nature and extent. A description of this investigation follows in Section 2.2.

2.2 RECENT HYDROGEOLOGIC AND WATER QUALITY INVESTIGATIONS

Twelve alluvial monitoring wells and one aquifer-test well were installed during the recent field investigation. Figure 2-1 shows the locations of the new and existing monitoring wells, the NWBS extraction and recharge wells, four aquifer test wells, and two cross-sections. Table 2-1 is a summary of construction



LEGEND

- NEWLY INSTALLED ALLUVIAL MONITORING WELL
- NEWLY INSTALLED ALLUVIAL CLUSTER WELL
- AQUIFER TEST WELL
- EXISTING ALLUVIAL MONITORING WELL
- SAMPLED EXISTING ALLUVIAL MONITORING WELL
- BOREHOLE
- EXTRACTION WELL
- RECHARGE WELL
- A — A' CROSS-SECTION LOCATION
- RMA BOUNDARY
- SECTION BOUNDARY
- NORTHWEST BOUNDARY SYSTEM LOCATION

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0 600 1200

FEET

WELL LOCATION MAP

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FIGURE 2-1

TABLE 2-1 BOREHOLE AND MONITORING WELL CONSTRUCTION DETAILS

Well ID	Surface Elevation (ft msl)	Total Depth Drilled (ft)	Depth to Bedrock (ft)	Depth to Groundwater (ft from surface)	Screened Interval (ft)
22501 (cluster)	5121.66	55.0	54.0	29.30	39.5 - 55.0
22507	5121.65	40.0	NDE	29.32	24.0 - 39.5
22502	5132.90	50.3	47.0	41.08	34.8 - 50.3
22503-A (dry hole)	5134.49	35.0	30.0	-	-
22504	5136.71	30.0	29.3	29.59	24.5 - 30.0
22505	5141.58	40.0	37.0	33.55	29.5 - 40.0
22506	5146.06	40.0	39.0	38.60	34.25 - 39.75
27501 (cluster)	5129.68	59.0	54.0	33.40	44.0 - 54.5
27506	5129.36	45.0	NDE	33.23	28.2 - 43.7
27502	5126.25	45.0	41.0	31.60	28.0 - 43.5
27503 (cluster)	5127.30	59.0	56.0	34.37	46.2 - 56.7
27504	5127.37	48.0	NDE	34.43	29.9 - 45.4
27505	5130.15	45.0	50.5*	34.62	28.5 - 44.0
27507	5127.67	49.0	45.5	34.01	32.75 - 48.8

NOTE: All well locations have been surveyed. See appendix A for borehole logs and additional well construction details.

NDE = Not Deep Enough

msl = mean sea level

*Bedrock depth is from Well 27009

details for the new wells. Appendix A contains the borehole logs and well construction information for the new wells.

At three well locations, paired cluster wells were installed where the saturated alluvial thickness was greater than 15 feet. Well 27505 was installed adjacent to existing Well 27009 to create a nested pair. In the remaining wells, the entire alluvial saturated zone was screened. The alluvium was unsaturated at proposed location 22503-A; therefore, a well was not installed.

A pumping test was conducted in Well 27507, installed near existing Wells 27085 and 27006. The pumped groundwater was piped to the NWBS for treatment.

Recent survey data for the newly installed wells and for 91 existing wells located near the NWBS are included in Tables B-1 and B-2, respectively, in Appendix B. Water levels measured in 105 alluvial monitoring wells during the recent investigation are tabulated in Appendix C.

A total of five soil samples were collected from three boreholes (27501, 27502, and 27503) for physical properties testing (grain-size analyses and Atterberg Limits). Appendix D contains the results of these physical tests.

Ten of the new wells and 17 existing alluvial monitoring wells (identified on Figure 2-1) were sampled in February 1990 using standard RMA procedures as discussed in the Shell Letter Technical Plan (1989). Of the two new monitoring wells not sampled, Well 22502 was installed for hydrogeologic information only, and an inadequate volume of water for sampling was present in Well 22504. Analyses were performed for those analyte groups

containing organic contaminants reported to exist near the NWBS by recent Army investigations (Task 25 and the Comprehensive Monitoring Program). The analyte groups included organochlorine pesticides, halogenated and aromatic volatiles, diisopropylmethyl phosphonate (DIMP), dimethylmethyl phosphonate (DMMP), and dibromochloropropane (DBCP). Environmental Science and Engineering Laboratory (ESE) of Englewood, Colorado analyzed the samples using PM/RMA-certified methods.

Evaluation of the analytical and field QC data indicate that sampling procedures were adequate and the results were reproducible. A discussion of analytical data quality control/quality assurance, including the list of analytes and certified reporting limits, for the recent investigation is provided in Appendix E. Analytical data are tabulated in Appendix F.

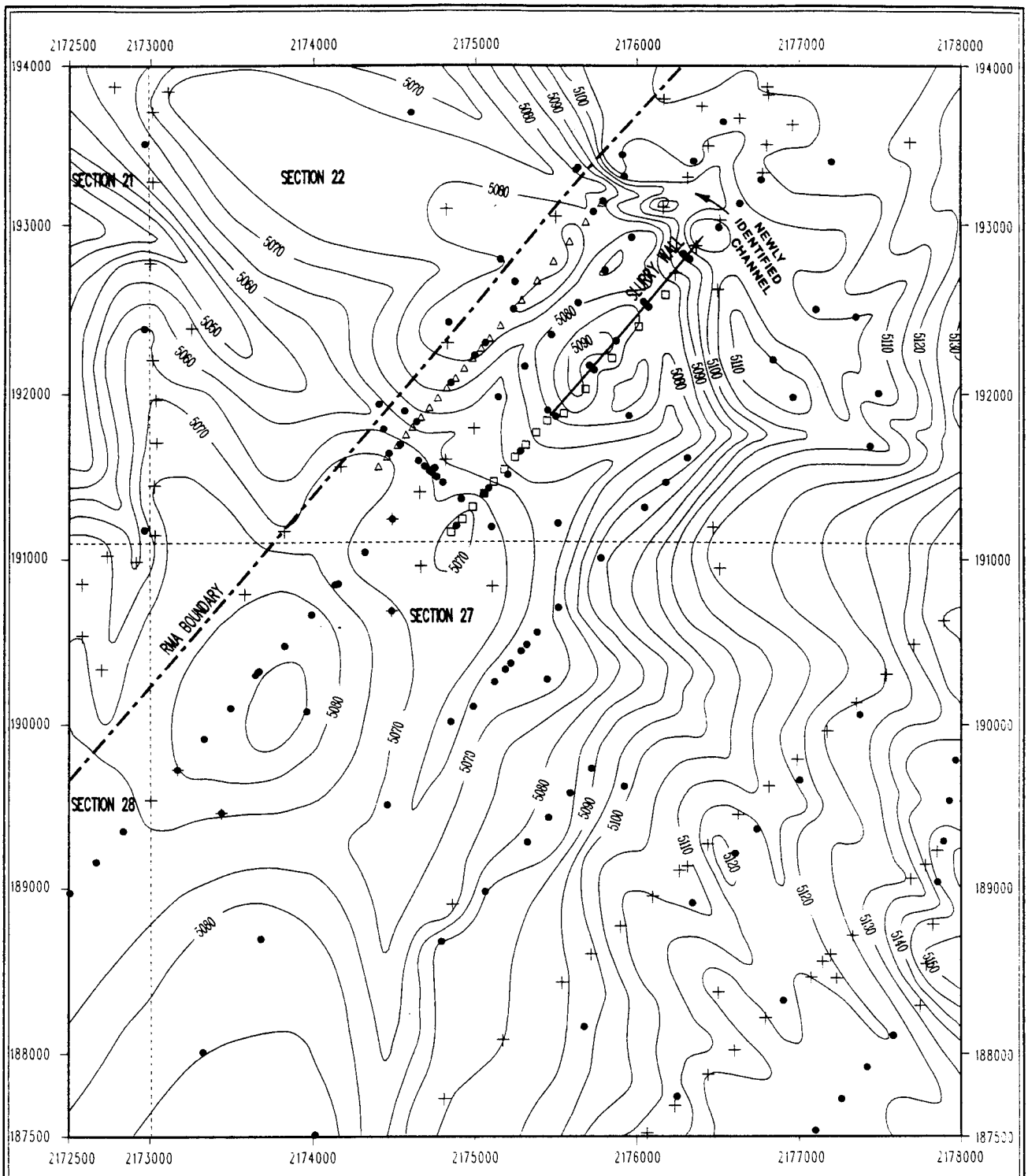
2.3 HYDROGEOLOGY

Regional geologic and hydrologic conditions at the RMA have been discussed in detail in previous reports (May 1982, MKE 1988, and Ebasco 1989) and are not repeated here. The two pertinent stratigraphic units underlying the northwest boundary are the Quaternary Alluvium and Late Cretaceous to Early Tertiary Denver Formation. The alluvium ranges in thickness from 30 to 65 feet and is comprised of clay, sand, and gravel. The alluvial aquifer consists primarily of very coarse-grained sand, gravelly sand, and gravel of the Broadway, Channel Fill, and Louviers stratigraphic units as described in MKE (1988), and generally is highly permeable. The alluvium is underlain by relatively impermeable claystone and siltstone and low permeability sandstone of the Denver Formation.

Figure 2-2 is a contour map of the top of the Denver Formation. Numerous erosional paleochannels were incised in the bedrock surface prior to deposition of the alluvium. In Section 27, a major channel trends north, then northwest and intersects the southwestern part of the boundary system in Section 22. The northeastern end of the NWBS slurry wall is keyed into a small bedrock high that is part of a low-relief terrace in the bedrock.

In the recent investigation, a channel located immediately to the northeast of the bedrock high was found. This channel is identified with an arrow on Figure 2-2 and trends northwest, then west, splitting into two smaller channels. One of the smaller channels trends southwest to the area between the NWBS slurry wall and recharge wells. The second channel continues west crossing the RMA boundary.

The water table in the alluvium beneath the NWBS varies from about 30 to 40 feet below the ground surface. As shown on the contour map of the water table measured in February 1990 (Figure 2-3), regional flow is ultimately to the northwest; however, localized flow pathways near the NWBS are varied and complex. To the east and southeast of the NWBS, groundwater flow in the alluvium is confined to bedrock channels. Between these channels, the Denver Formation protrudes above the water table, creating extensive areas where the alluvium is unsaturated. Within the bedrock channels, the hydraulic gradients are generally steep (typically between 0.02 and 0.05 ft/ft) because the groundwater flows over the sloping bedrock surface within a thin saturated zone. To the south, west, and northwest of the NWBS, the hydraulic gradients are flatter by roughly an order of magnitude (0.002 to 0.007 ft/ft) and the alluvial aquifer is much thicker and quite permeable. Most of the groundwater flow converges on the existing NWBS extraction system; however, in the



LEGEND

- ALLUVIAL MONITORING WELL
- ALLUVIAL CLUSTER WELL
- RECHARGE WELL
- EXTRACTION WELL
- BOREHOLE OR ABANDONED WELL
- RMA BOUNDARY
- SECTION BOUNDARY
- —5090— CONTOUR SHOWING ELEVATION OF THE TOP OF DENVER FORMATION IN FEET ABOVE MEAN SEA LEVEL CONTOUR INTERVAL 5 FT

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FEET

BEDROCK SURFACE MAP

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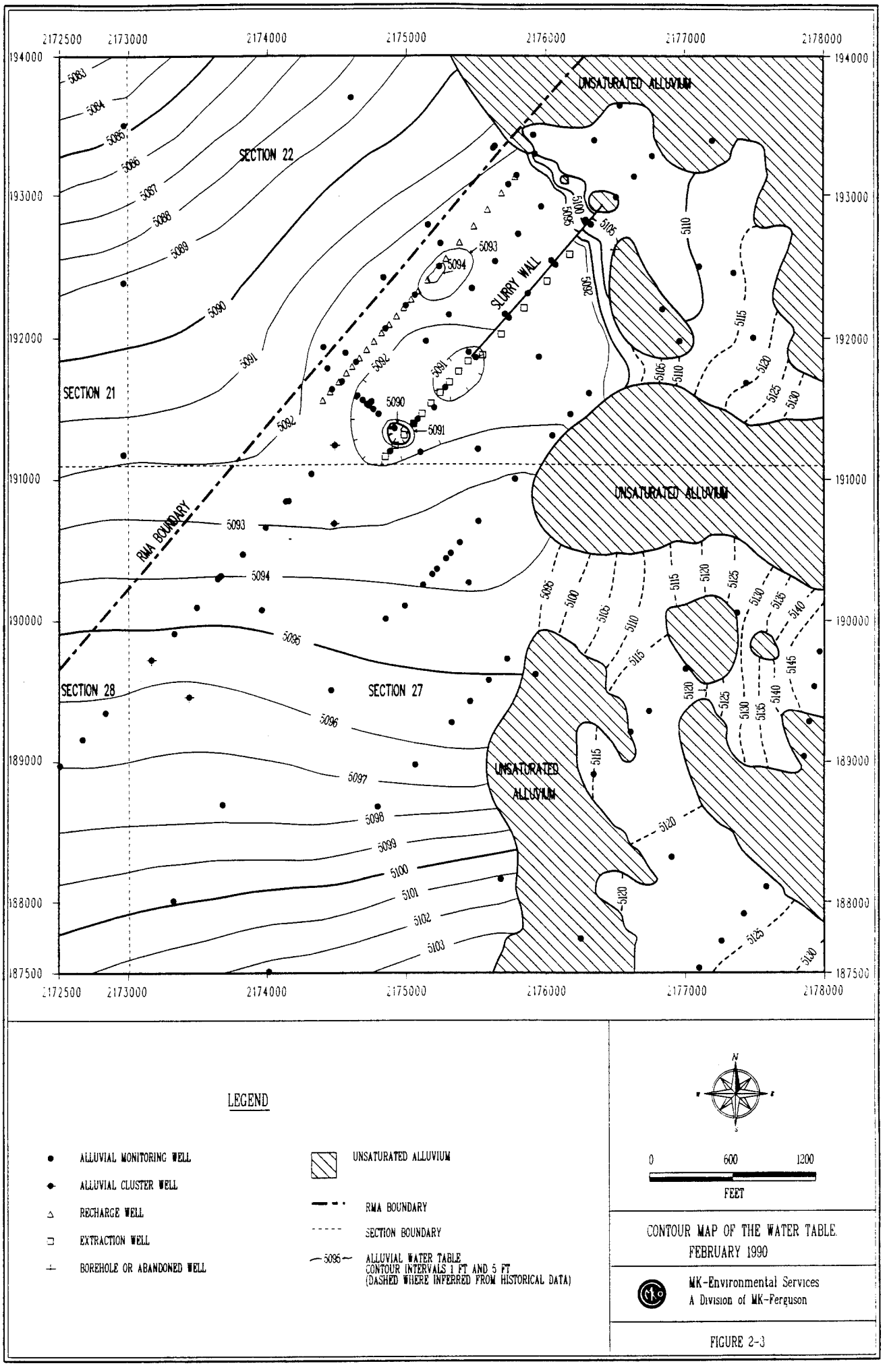
FIGURE 2-2



CONTOUR MAP OF THE WATER TABLE
FEBRUARY 1990

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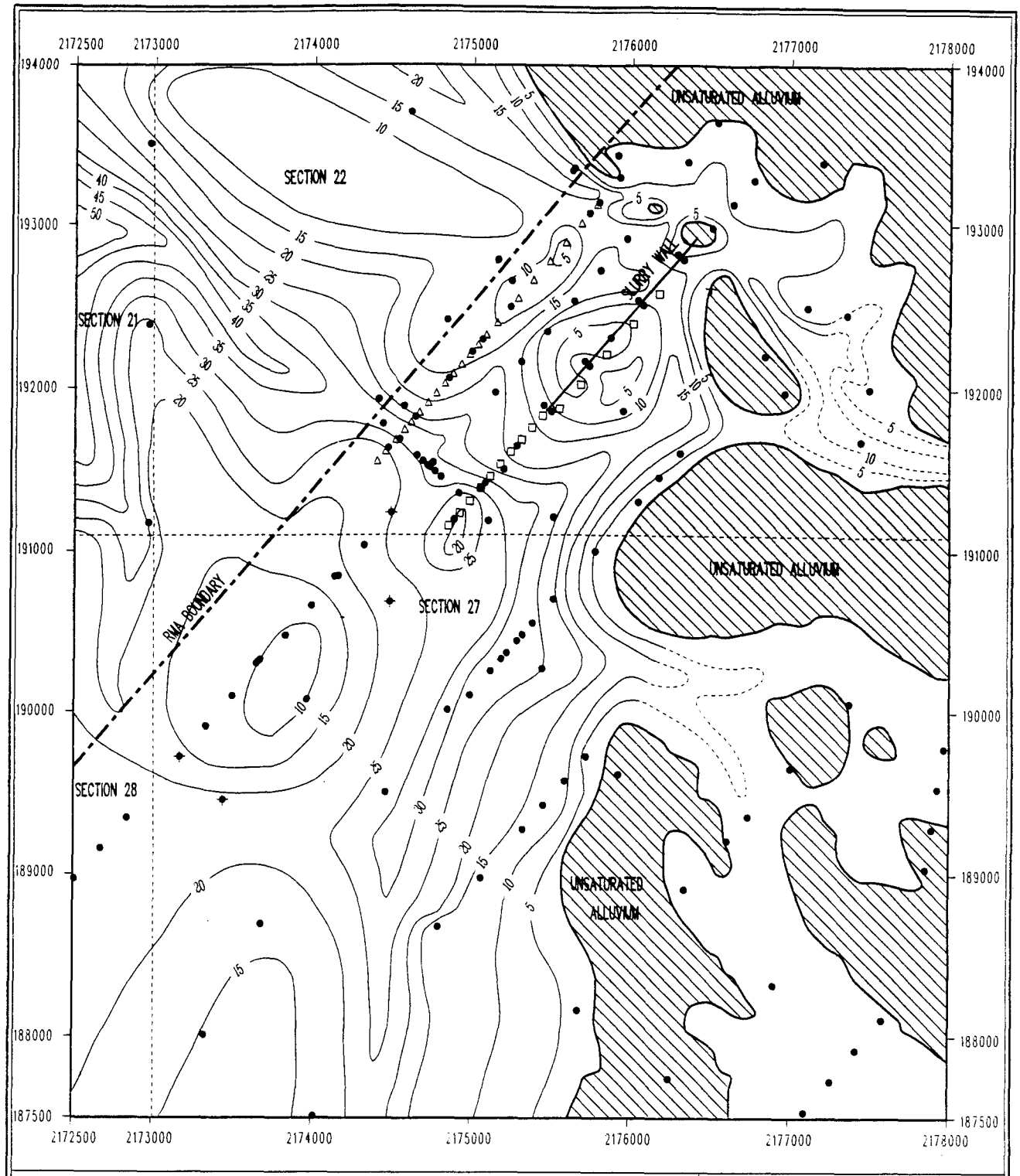
FIGURE 2-3

western portion of Section 27, Section 28, and to the northeast of the slurry wall in Section 22, portions of the groundwater flow around the NWBS.

As shown on Figure 2-4, extensive areas of unsaturated alluvium exist near the NWBS where the bedrock is shallow. Erosional channels cut into these bedrock highs contain saturated alluvium 10 feet thick or less. Groundwater flows in the alluvium are probably small in these thin channels. As the bedrock elevation decreases to the west, the saturated alluvium thickens to over 50 feet offpost in Section 21. Most of the groundwater flow into the NWBS comes from south of the boundary system in Section 27.

Near the southwest end of the NWBS, the saturated zone varies from about 10 to 30 feet thick. Figure 2-5 is a cross-section illustrating the geology southwest of the boundary system. A small location map is included on Figure 2-5 and the location of the cross-section is shown in more detail on Figure 2-1. A confining clay layer overlies the coarse-grained alluvial aquifer and the potentiometric surface rises slightly above the base of the clay near the boundary system. At Well 27502, the saturated alluvium thins over a bedrock high, and at cluster wells 27506 and 27501, the lower part of the aquifer consists of lower permeability material. Hence, the aquifer is less transmissive as reflected in the shape of the contours on the water table map (Figure 2-3).

Northeast of the slurry wall, the alluvium lies on a bedrock terrace. As shown on Figure 2-4, the alluvial saturated thickness ranges up to 10 feet. Groundwater enters this area from the east through a narrow channel. Although some of the groundwater flow in this channel is intercepted by the boundary system, the recent investigations identified another channel



LEGEND

- ALLUVIAL MONITORING WELL
- ALLUVIAL CLUSTER WELL
- RECHARGE WELL
- EXTRACTION WELL
- BOREHOLE OR ABANDONED WELL
- UNSATURATED ALLUVIUM
- RMA BOUNDARY
- SECTION BOUNDARY
- —15— ISOPACH OF SATURATED ALLUVIUM IN FEET CONTOUR INTERVAL 5 FT (DASHED WHERE INFERRED FROM HISTORICAL DATA)

N

0 600 1200

FEET

THICKNESS OF SATURATED ALLUVIUM, FEBRUARY 1990

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FIGURE 2-4

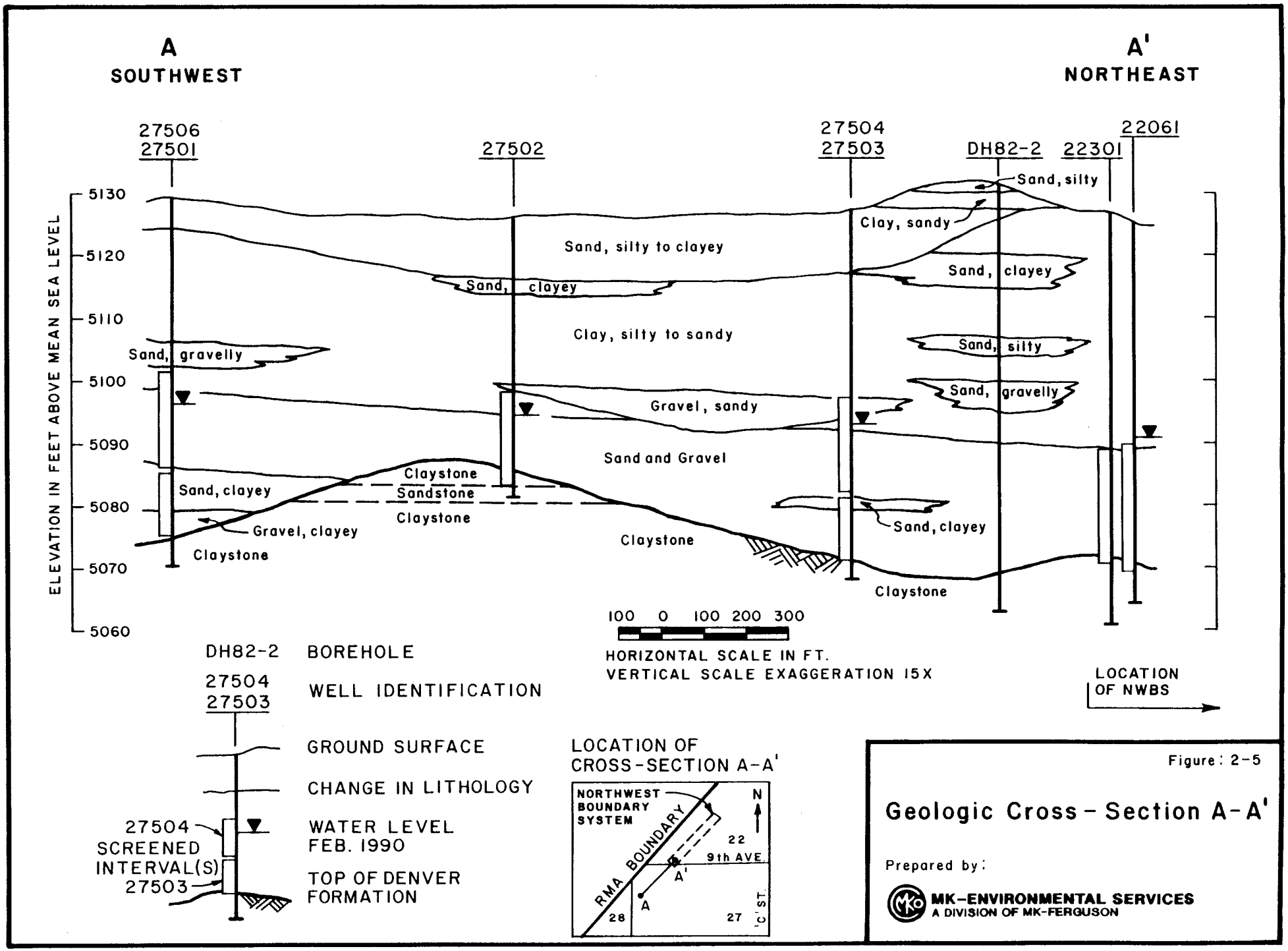

Figure: 2-5

Geologic Cross-Section A-A'

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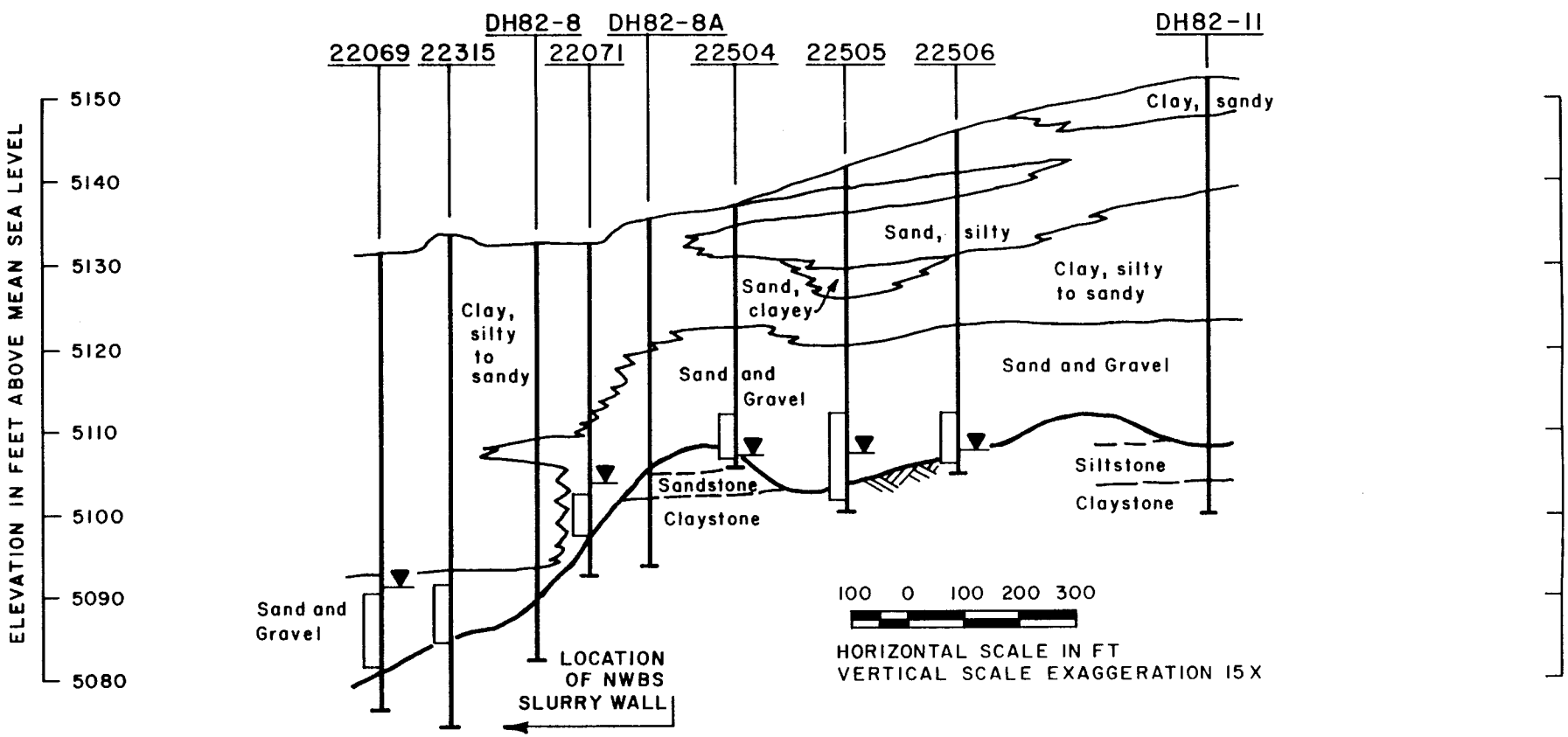
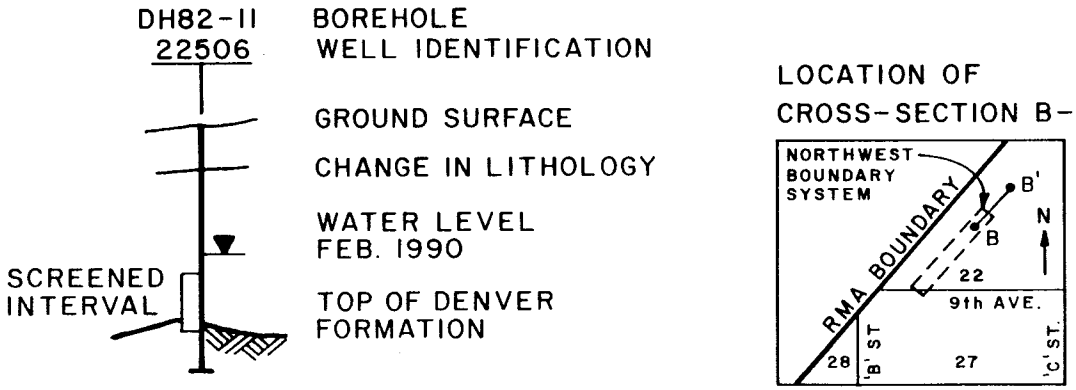
located just to the northeast of the end of the slurry wall. This recently identified channel trends northwest, then west, bypassing the slurry wall. This channel is 400-500 feet wide with a maximum estimated saturated thickness of about 5 feet. Groundwater bypassing the slurry wall through this channel flows into the area between the slurry wall and the recharge wells, and may also flow offpost near Wells 37332 and 37386.

Figure 2-6 illustrates the geology at the northeast end of the slurry wall. The location of this cross-section is shown on Figure 2-6 and in more detail on Figure 2-1. Newly installed Well 22505 is probably located near the deepest part of the recently identified channel, penetrating approximately 3.5 feet of saturated alluvium. Coarse gravel was encountered at the base of the alluvium in this well. During well development and sampling, the well produced 3 to 4 gallons per minute (gpm) without dewatering. Therefore, the saturated zone is permeable but thin. Groundwater flow through this channel is expected to be under 20 gpm.

Along the slurry wall, a reverse hydraulic gradient was measured in three of the four pairs of monitoring wells straddling the wall. However, a normal gradient with a head difference of 2.1 feet was measured in the well pair on the northeastern end of the wall (Wells 22071 and 22072). As shown on Figure 2-6, Well 22071 is located on the slope below the bedrock terrace to the northeast. The nearest extraction well (22315) is 250 feet away at the base of the bedrock slope. Army borehole DH82-8, located between Wells 22315 and 22071, was drilled in 1982 and was a dry hole. Therefore, there may not be an effective hydraulic connection between Wells 22315 and 22071. Thus, extraction Well 22315 probably has little or no ability to create a reverse





LOCATION OF CROSS-SECTION B-B'

Figure: 2-6

Geologic Cross-Section B-B'

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gradient along approximately the last 300 feet of the slurry wall.

Aquifer tests have been conducted by the Army in Wells W-4, W-5, and NW-11, and by Shell in Well 27507 during the recent investigation. Test results are summarized in Table 2-2 and the locations of the test wells are shown on Figure 2-1. Test results produced estimates of aquifer transmissivity ranging from 30,000 to 471,778 gallons per day per foot (gpd/ft), hydraulic conductivity estimates varying from 1.2 to 9.7 x 10^{-1} cm/sec, and storativity estimates of 0.085 to 0.25.

2.4 NATURE AND EXTENT OF CONTAMINATION

Soil and groundwater quality data collected by the Army in the NWBS area were compiled and presented in the North Central Study Area Report (Ebasco 1989). Groundwater quality data were also presented in the Comprehensive Monitoring Program (CMP) Report for 1988 (Stollar 1989) and the Task 25 Draft Final Report (ESE 1989). The CMP provides routine groundwater monitoring of wells near the NWBS on an annual or semi-annual basis.

The 1988 CMP maps show low parts-per-billion (measured in micrograms per liter) concentrations of benzene, chlorobenzene, chloroform, dieldrin, diisopropylmethyl phosphonate (DIMP), and trichloroethene (TCE) in groundwater offpost near the NWBS. A review of historical data indicates that of these six contaminants, only chloroform and dieldrin were consistently detected. Detections of the remaining four compounds were sporadic and are of questionable reliability.

To help resolve questions about the historical data, obtain water quality data from wells not included in the CMP, and collect data

TABLE 2-2. NWBS AREA AQUIFER TEST RESULTS

Well ID (source)	Transmissivity (gpd/ft)	Aquifer Thickness (ft)	Hydraulic Conductivity (cm/sec)	Storativity
W-4 (USCOE 1986)	210,228	25.0	4.0×10^{-1}	0.085
W-5 (USCOE 1986)	33,213	8.5	2.1×10^{-1}	0.25
NW-11 (May 1982)	340,585-471,778	23.0	$7.0\text{-}9.7 \times 10^{-1}$	N/A
27507*	30,000-60,000	11.5	$1.2\text{-}2.5 \times 10^{-1}$	N/A

*Pumping test analysis is preliminary

N/A = Not Available

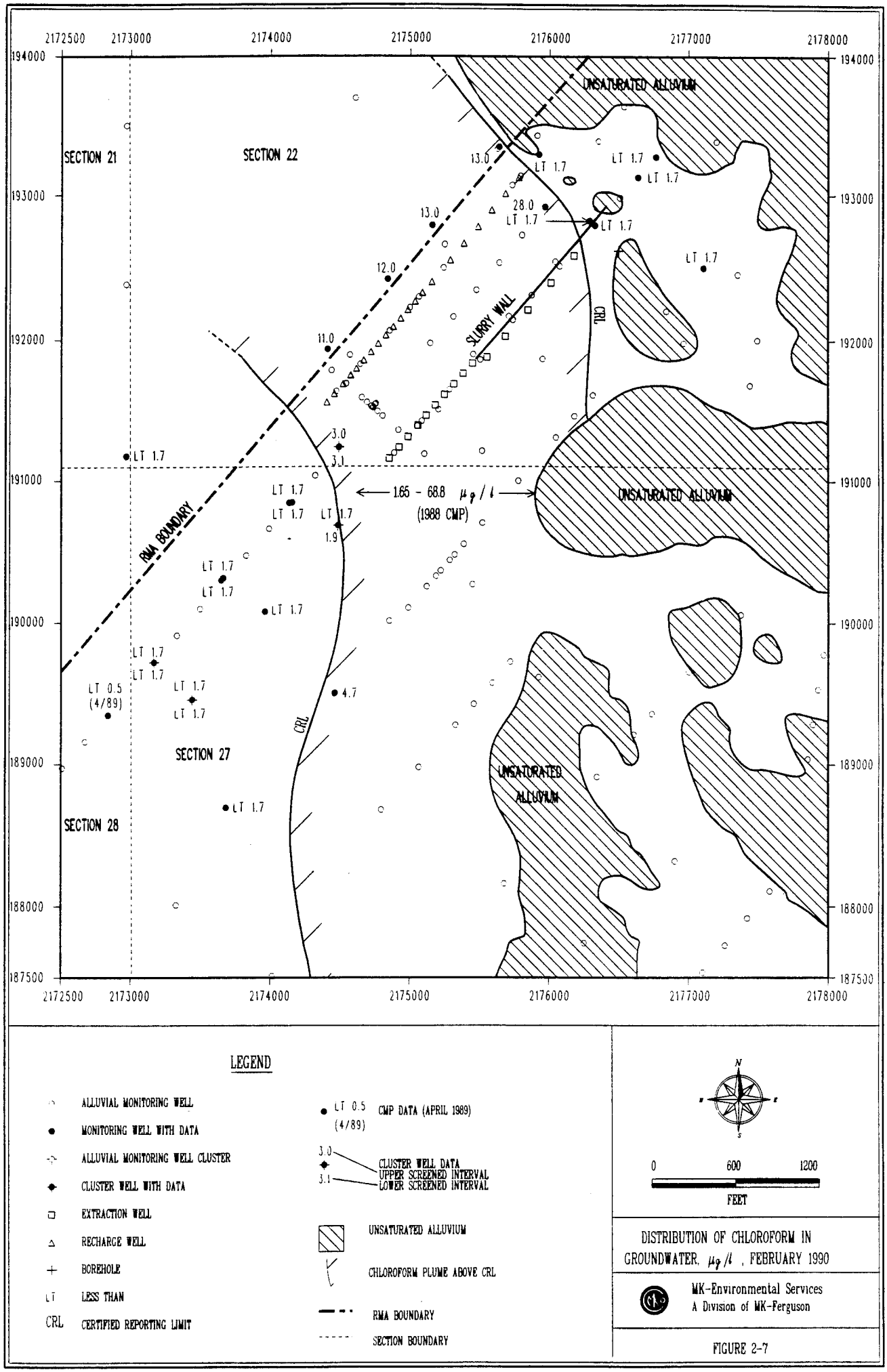
for the newly installed wells, a sampling program of alluvial wells was conducted by MK-Environmental Services in February 1990. Examination of all available groundwater data indicate that the majority of contaminants approaching the northwest boundary of RMA are intercepted and removed by the NWBS. However, very low concentrations of chloroform and dieldrin are bypassing the boundary system and migrating offpost as discussed in Sections 2.4.1 and 2.4.2.

One objective of the recent field investigation was to determine whether representative samples may be obtained from the older monitoring wells having only partially penetrating screens. Since historical CMP data were used in this investigation, verifying the validity of the data from these wells was important. Based on recent cluster well data for chloroform and dieldrin presented below, it appears that reasonably representative samples were obtained from these wells.

2.4.1 Chloroform

Figure 2-7 shows the distribution of detectable chloroform in groundwater. The chloroform plume flows from the south in Section 27. Most of the detectable chloroform plume is intercepted by the NWBS; however, a small portion is not. No chloroform was detected in the newly found alluvial channel northeast of the NWBS.

Essentially no difference in the concentration of chloroform was found in cluster wells 22501 and 22507 near the thickest part of the alluvial aquifer in Section 22. Therefore, no vertical concentration gradient is indicated for the chloroform plume near the NWBS.



DISTRIBUTION OF CHLOROFORM IN GROUNDWATER, µg/l , FEBRUARY 1990

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FIGURE 2-7

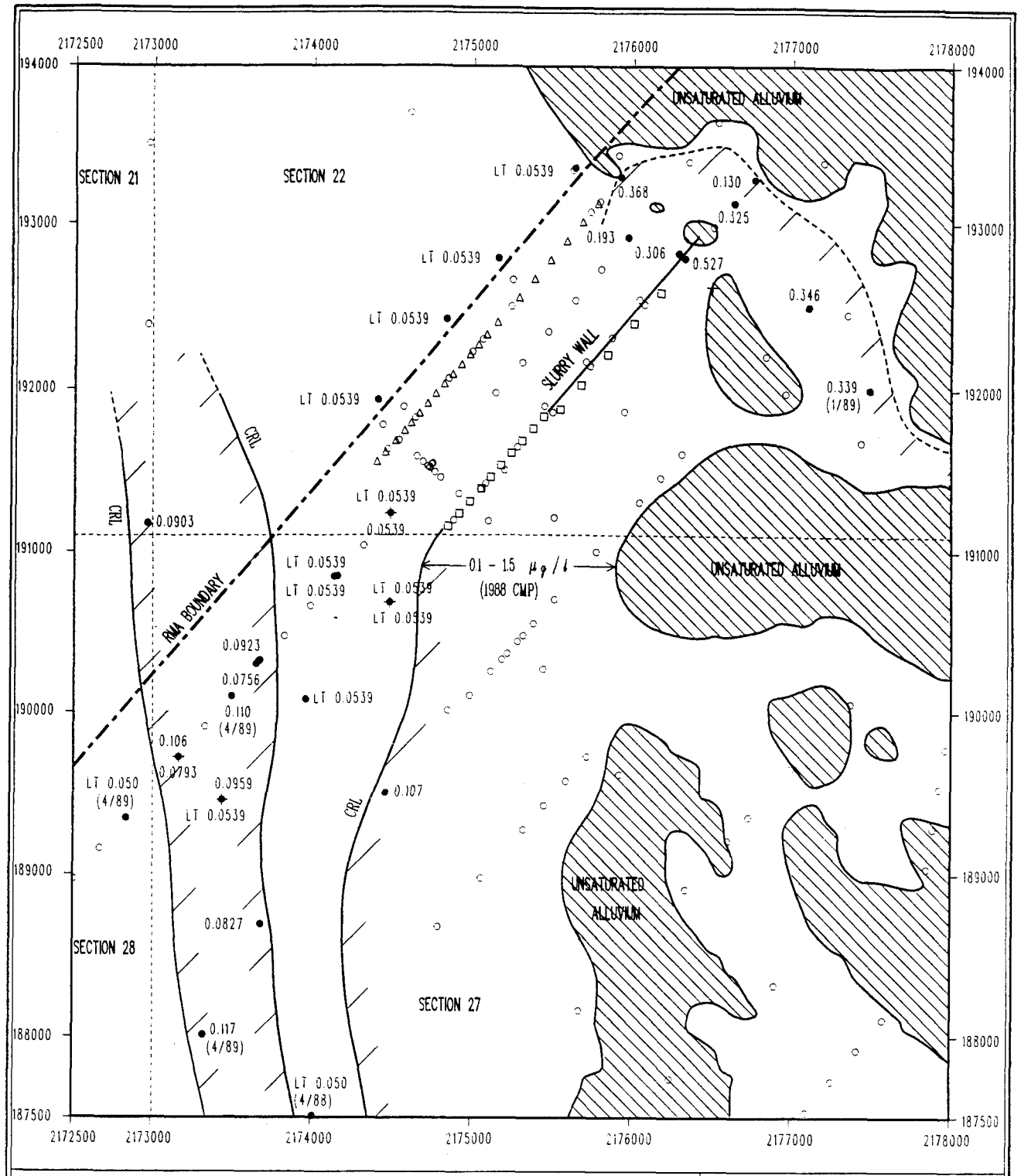
Because chloroform is only partially removed by the NWBS granulated activated carbon treatment plant, chloroform bypassing the southwestern end of the boundary system is lower in concentration than the water re-injected in the recharge wells. Although chloroform was detected offpost, the concentrations detected on both sides of the NWBS are substantially below the ARAR for the North Boundary System IRA of 100 ug/l for total trihalomethanes.

2.4.2 Dieldrin

Figure 2-8 shows the distribution of dieldrin in groundwater collected from wells near the NWBS. Two dieldrin plumes separated by an uncontaminated area appear to be flowing from the south in Section 27. The CMP data indicate that the highest concentrations of dieldrin are found in the plume intercepted by the NWBS.

Along the western boundary of Section 27, a narrow plume flows offpost. Within this plume, concentrations measured in February 1990 were within a narrow range, between 0.0756 and 0.106 ug/l, and were below the proposed ARAR of 0.12 ug/l for the North Boundary System IRA. No change in the concentration of dieldrin in this plume is indicated by the recent data.

At cluster well locations, no significant vertical concentration gradients of dieldrin were detected, although slightly higher dieldrin concentrations were detected in the upper part of the alluvial aquifer. A representative sample was probably not obtained from cluster well 27501 because of dilution by potable water added during well installation. Therefore, the measured value for this well of less than the certified reporting limit (CRL) of 0.0539 ug/l should be disregarded.



LEGEND

- ALLUVIAL MONITORING WELL
- MONITORING WELL WITH DATA
- ALLUVIAL MONITORING WELL CLUSTER
- CLUSTER WELL WITH DATA
- EXTRACTION WELL
- RECHARGE WELL
- BOREHOLE
- LT LESS THAN
- CRL CERTIFIED REPORTING LIMIT

- 0.117 (4/89) CMP DATA (APRIL 1989)
- 0.0959 / LT 0.0539 CLUSTER WELL DATA — UPPER SCREENED INTERVAL / LOWER SCREENED INTERVAL
- UNSATURATED ALLUVIUM
- DIELDRIN PLUME ABOVE CRL
- RMA BOUNDARY
- SECTION BOUNDARY

N

0 600 1200

FEET

DISTRIBUTION OF DIELDRIN IN GROUNDWATER. µg/l , FEBRUARY 1990

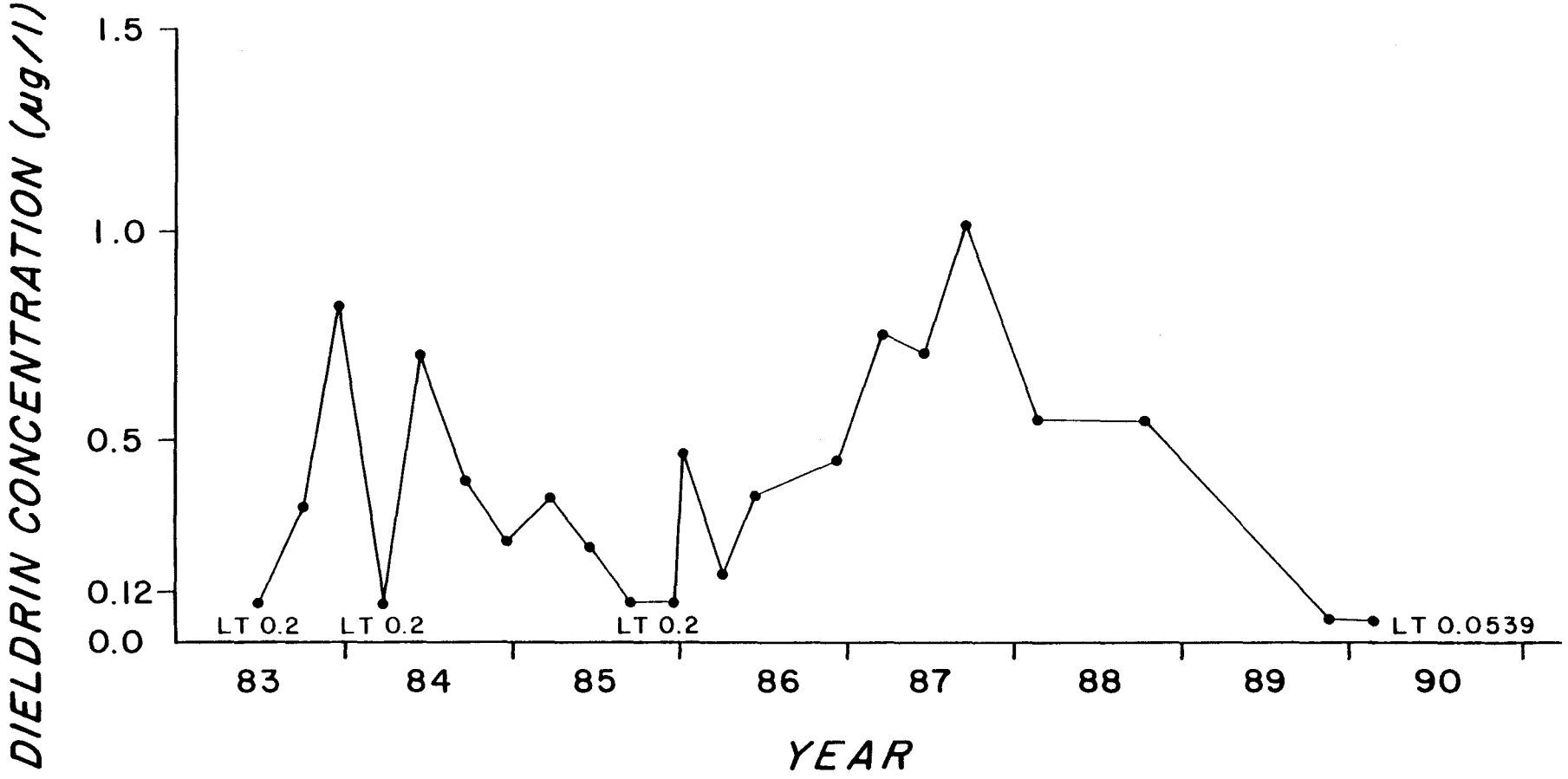
MK-Environmental Services
A Division of MK-Ferguson

FIGURE 2-8

On the northeastern end of the NWBS, dieldrin concentrations within the newly found channel located northeast of the NWBS range from 0.130 to 0.368 ug/l. Samples from the offpost wells were below the CRL. This was unexpected since offpost migration on the northeastern end of the NWBS is indicated by the hydrogeologic data. Apparently, a significant decrease in the concentration of dieldrin in offpost Well 37332 has occurred since it was sampled in October of 1988.

Figure 2-9 is a plot of dieldrin concentration versus time for offpost Well 37332. Preliminary October 1989 CMP data confirmed the recent decrease in dieldrin concentration in Well 37332. The concentration has fluctuated through time, indicating bypass has occurred but may have been intermittent. Prior to the recent sampling program, between 1986 and 1988, dieldrin concentrations above 0.12 ug/l were consistently detected.

Examination of NWBS flow data revealed that injection rates in recharge wells located near Well 37332 were increased briefly in 1985 and again in 1989 and 1990. These increased injection rates corresponded to significant decreases in dieldrin concentration to below the CRL in Well 37332. Although it can be concluded that increased injection caused the decreases in concentration in this well, it is unknown whether offpost migration is prevented. The increased injection rates could either 1) divert the plume away from the monitoring well but allow dieldrin to migrate offpost, 2) dilute the plume to below the CRL, or 3) deflect the plume between the slurry wall and recharge wells toward the NWBS extraction wells to the southwest.



Notes: 1. LT = Less Than.
2. Dieldrin ARAR for the North Boundary System IRA is 0.12 µg/l.

Figure: 2-9

DIELDRIN CONCENTRATION VS. TIME
WELL 37332

MK-ENVIRONMENTAL SERVICES
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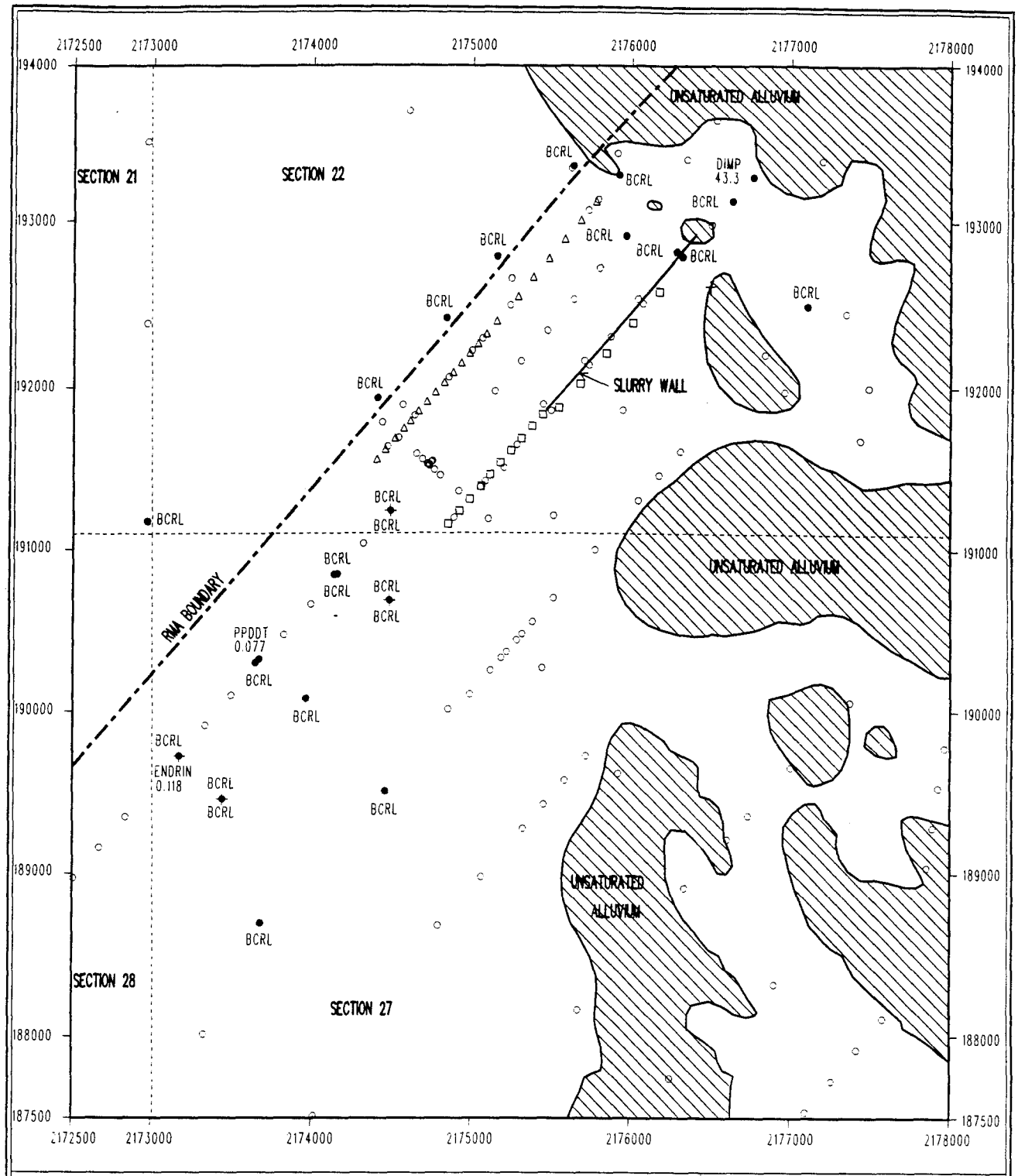
2.4.3 Other Contaminants

The only other groundwater contaminants reported in this investigation were single, isolated hits of endrin, dichlorodiphenyltrichoroethane (PPDDT), and DIMP. Figure 2-10 shows the well locations and concentrations for these isolated reports, all of which were below the ARARs for the North Boundary System IRA. The endrin (Well 27009) and PPDDT (Well 27085) reports were from cluster wells located immediately adjacent to wells in which these analytes are below the CRLs. Since it is apparent for chloroform and dieldrin that vertical concentration gradients were not significant, these reports may be false detections. Neither compound has been detected in these wells during previous sampling events. DIMP was reported in newly installed Well 22506 but not in any nearby wells.



LEGEND

- ALLUVIAL MONITORING WELL
- MONITORING WELL WITH DATA
- ALLUVIAL MONITORING WELL CLUSTER
- CLUSTER WELL WITH DATA
- EXTRACTION WELL
- RECHARGE WELL
- BOREHOLE
- BCRL — BELOW CERTIFIED REPORTING LIMIT FOR ANALYTES OTHER THAN CHLOROFORM AND DIELDRIN

PPDDT 0.077 — CLUSTER WELL DATA
0.077 — FULLY PENETRATING SCREEN
BCRL — LOWER SCREENED INTERVAL

UNSATURATED ALLUVIUM

RMA BOUNDARY

SECTION BOUNDARY

N

0 600 1200

FEET

OTHER GROUNDWATER CONTAMINANTS. µg/l
(DIMP, ENDRIN, PPDDT), FEBRUARY 1990

MK-Environmental Services
A Division of MK-Ferguson

FIGURE 2-10

3.0 OBJECTIVE OF THE NWBS SHORT-TERM IMPROVEMENTS

The objective of the NWBS Short-Term Improvements is to mitigate the bypass of alluvial groundwater known to be contaminated by organic compounds above the ARAR levels for the North Boundary System IRA by extending the NWBS groundwater interception system. Any extension is to utilize methods employed to construct the existing system (i.e., extraction wells, recharge wells, and/or a slurry wall). The treatment of extracted groundwater will be performed by the existing treatment plant.

4.0 SELECTED NWBS SHORT-TERM IMPROVEMENTS

As shown in Section 2.4 of this report, no groundwater containing contaminants above the ARARs for the North Boundary System IRA appears to be bypassing the southern end of the NWBS. Consequently, the NWBS Short-Term Improvements will focus on a northern extension of the NWBS.

An alluvial channel carrying groundwater contaminated with levels of dieldrin above the North Boundary System ARAR level has been located slightly north of the existing NWBS. Recent data downgradient from the channel do not show any offpost groundwater to be contaminated with dieldrin at detectable levels. The selected strategy for the NWBS Short-Term Improvements consists of extending the existing NWBS across the recently identified channel. The extension will be accomplished utilizing technologies currently employed in the NWBS (i.e., extraction wells, recharge wells, and/or a slurry wall). Treatment of extracted groundwater will be performed by the existing treatment plant. The selected strategy is consistent with the continued long-term operation and function of the NWBS.

As shown in Section 2.3, the recently discovered alluvial channel is approximately 500 feet wide and has a maximum saturated thickness of at least 3.5 feet. Flow through the small channel is not expected to be more than 20 gallons per minute at a maximum. Recent water quality data within this alluvial channel show concentrations of dieldrin between 0.130 and 0.368 ug/l. Recent downgradient offpost water quality data do not show dieldrin concentrations above the 0.0539 ug/l CRL. The ARAR for dieldrin for the North Boundary System is 0.12 ug/l. Treatment of the incremental groundwater from the proposed system extension

is not expected to degrade the performance of the NWBS treatment plant.

Due to the accelerated nature of this phase of the NWBS IRA, a definitive cost estimate of the selected strategy has not been performed. However, a scope estimate indicates that construction costs will not exceed $750,000.

The recommended NWBS Short-Term Improvements extension of the NWBS to intercept the alluvial groundwater that may flow around the north end of the existing NWBS will reduce the spread of contamination, and is therefore expected to be consistent with the Final Response Action.

5.0 SCHEDULE

Consistent with the agreement of the Organizations and State, the Draft Implementation Document for the NWBS Short-Term Improvements will be completed by July 1, 1990. Construction of the proposed NWBS Short-Term Improvements is scheduled to be completed by November 30, 1990.

6.0 REFERENCES

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U.S. Army Corps of Engineers (USACE), 1986. Construction Foundation Report, Northwest Boundary, RMA Containment/Treatment System. March.

APPENDIX A

Borehole Logs and Well Construction Data

Borehole/Well No. : 22501 **Project/Task No's. :** NWBCS IRA/3800

Date Started : 1-31-90 **Date Completed :** 1-31-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc.

Surveyed Location : N 191231.86 E 2174480.02

Surveyed Elevation : GS 5121.66 ft. TOC 5123.68 ft.

Total Depth Drilled : 55.0 ft.

Static Water Level Depth : TOC, 31.49 ft. 2-20-90

Drilling Type : Hollow-Stem Auger Mobile B-57 Drilling

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
				8" Steel protective casing set in grout w/ concrete pad.			NOTE: Lithologic Log is from Bore 297.
							Ground Surface
							Sand, clayey; lt. brown to brown, medium dense, moist.
				Blank 4" ID PVC sch 40 w/ flush-threaded joints			Sand, silty; lt. brown to white, calcareous, medium dense, slightly moist to moist.
5							
							Sand, clayey; lt. brown, medium dense, slightly moist to moist.
10				Grout Portland Type I w/ 4% bentonite gel.			
							Clay, silty and sandy; lt. brown, stiff, moist
15							Sand, silty
				Borehole diameter 10.5".			
20							Clay, tr. of sand; lt. brown-gray to brown, moist

Borehole/Well No. : 22501 **Project/Task No's. :** NWBCS IRA/3800

Date Started : 1-31-90 **Date Completed :** 1-31-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
30					Grout 27.0 Bentonite pellets WL 29.5 BGL 2-20-90 32.0 Sand Pack (10-20) 33.0		Sand and Gravel; lt. brown, medium dense, sli. moist to moist. Clay, little silt, tr. sand; lt. gray to brown, stiff, high plasticity, free water in fractures., moist.
35							Sand and Gravel; lt. brown, med. dense, saturated
40					Formation Collapse – Natural Sand pack. 39.5		Sand; trace of gravel
45					Well screen, 0.020" slots, 4" PVC, sch. 40 w/ flush-threaded jts		Sand and Gravel; lt. brown, med. dense, saturated trace of clay at 48ft.
50					49 Sand pack (10-20 sand)		Gravel at 50 ft
55					54.5 55.0 (Bottom plug) TD 55.0		Large gravels and cobbles at 53.5 ft. Top of Denver Fm. @ 54.0 Claystone; blue-gray, hard, slightly moist.

Borehole/Well No. : 22502 **Project/Task No's. :** NWBCS IRA / 3800

Date Started : 2-6-90 **Date Completed :** 2-27-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc.

Surveyed Location : N 191965.65
E 2175950.00

Surveyed Elevation : GS 5132.90 ft.
TOC 5135.06 ft.

Total Depth Drilled : 50.3 ft.

Static Water Level Depth : 43.24 TOC ft.
3-1-90

Drilling Type : Hollow-Stem Auger
Mobile B-57 Drill Rig

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
0	Blow counts			8" Steel protective casing set in grout w/ concrete pad.			Ground Surface
5				Blank 4" ID PVC sch. 40 w/ flush-threaded joints.			Sand, silty, lt. brown to tan, fine to med. grained sand, sli. moist to dry.
10		Cuttings		Grout Portland Type I w/ 4% bentonite gel.			
15							
20				Borehole diameter 10.5"			Clay, silty, sandy in places; lt. brown, stiff, slow drilling, occasional caliche zones, sli. moist.
25							Coarse sand and granules in clay at 23'. Moist, clay is softer at 24'.

Borehole/Well No.: 22502 **Project/Task No's.:** NWBCS IRA / 3800

Date Started: 2-6-90 **Date Completed:** 2-27-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count / Feed Pressure	Sample Type	Sample Depth / % Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
25	6/10/19 18"	Split spoon			Grout 26.0		Clay, silty; lt. brown to tan, occasional sand, caliche zones, sli. moist.
					Bentonite Pellets (Holeplug)		
30					31.0 Formation Collapse 33.0		
		Cuttings			34.8		
35					Well Screen 0.020" slots, 4" PVC, sch. 40 w/ flush threaded joints.		
					▽ WL 41.24 BGL 3/1/90		Sand, silty; lt. brown, arkosic, coarse to very coarse grained, small granite pebbles, angular sand and pebbles, sli. moist to dry.
40	8/7/25 18"	Split spoon and Cuttings			Sand Pack (10-20 sand)		
							Sand, silty; lt. brown to gray, arkosic, coarse grained w/ occasional pebbles to 1" dia., partially cemented, saturated.
45	12/23/50 18"						47.0 Top of Denver Fm @ 47.0.
					49.8		Sandstone, some clay; coarse grained with claystone fragments, iron stained, partially cemented, sli. moist - no free water.
50	50/2.5"				50.3 (Bottom plug) TD 50.3		

Borehole/Well No. : 22503-A (Dry hole) **Project/Task No's. :** NWBCS IRA / 3800

Date Started : 2-1-90 **Date Completed :** 2-6-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc

Surveyed Location : N 192624.45 E 2176500.29

Surveyed Elevation : GS 5134.49 ft. TOC NA ft.

Total Depth Drilled : 35.0 ft. **Drilling Type :** Hollow-Stem Auger Mobile B-57 Drill Rig

Static Water Level Depth : NA ft.

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/ % Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
							Note: Hole was dry and was grouted to surface.
0							Ground Surface
							Sand, silty; lt. brown, fine grained, dry.
5					← Grout Portland Type I w/ 4% bentonite gel.		
				Hole			
10		Cuttings					Sand, clayey; lt. brown, fine grained, low clay content, dry.
				Dry			← Clay; lt. gray, leached soil zone, caliche, occ. pebbles, dry.
15							Clay, silty; brown, stiff, sl. moist
							Sand and Gravel, V. coarse gr. sand, granules to pebbles 2" dia., dry.
20							
							Coarse gravel and sand, silty; fine grained sand, cobbles to 4" dia. sl. moist to dry.
25							

Borehole/Well No. : 22563-A (Dry hole) **Project/Task No's. :** NWBCS IRA / 3900

Date Started : 2-1-90 **Date Completed :** 2-6-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
25	Blow cts.	Cuttings		Hole Dry			Large cobbles, 5" dia., dry * Broke drivehead in large rocks at 27' Gravel, some clay; pea size gravel, dry. Top of Denver Fm. @ 30.0
30							Claystone, olive green w/ some iron staining, weathered from 30-31', hard, dry, unweathered from 31-35'. Moisture at 36', not enough for alluvial well.
35	20/7/13 18"	Split Spoon			TD 35.0		NOTE: Hole was dry and was grouted to surface.

Borehole/Well No.: 22504 **Project/Task No's.:** NWBCS IRA / 3800

Date Started: 2-17-90 **Date Completed:** 2-17-90

Drilling Inspector: B. Charles

Drilling Company: Geotechnical Services, Inc.

Surveyed Location: N 192981.47, E 2176505.72

Surveyed Elevation: GS 5136.71 ft., TOC 5138.46 ft.

Total Depth Drilled: 30.0 ft.

Static Water Level Depth: TOC 31.37 ft. 2-23-90

Drilling Type: Hollow-Stem Auger Mobile B-57 Drilling

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
				8" Steel protective casing set in grout w/concrete pad.			**Ground Surface**
							Clay, sandy; dk brn, organic, moist
				Blank 4" ID PVC, sch 40, flush-threaded jts.			Sand; silty; tan, v. fine gr., dry to sli. moist.
5							
				Grout Portland Type I w/ 4% bentonite gel.			Clay, sandy; lt. brown to brown, stiff to soft, occasional small pebble ½" dia, sli. moist.
10		Cutting					
				Borehole dia. 10.5"			
				14.0			
15				Bentonite pellets (Hole plug)			Gravel; small pebbles ½" dia., well rounded, dry.
							Sand and gravel; med. to v. coarse sand, small pebbles ½" to 2" dia.
20				20.0			
				Formation collapse			
				22.5			Sand, clayey; med. gr. sand, moist
				Sand pack			
				24.5			Gravel and sand, 2" dia, dry.

Borehole/Well No. : 22504 **Project/Task No's. :** NWBCS IRA/3800

Date Started : 2-17-90 **Date Completed :** 2-17-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/ % Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
					Well screen 0.020" slots 4" PVC		Sand and gravel; lt. brown, med gr. sand, 2" dia pebbles., moist.
					Sand pack (10-20)		Gravel, clasts to 3" dia.
					▽ WL 29.37 BGL 2-23-90		Top of Denver Fm @ 29.25
30	31/50 12"	Split spoon/cuttings			29.5		Siltstone and claystone; finely interlaminated, siltstone olive green, claystone blue-gray w/ iron staining; dry to slightly moist.
					30.0 (Bottom plug) TD 30.0		Well was dry after installation, but had water a few days later.

Borehole/Well No. : 22505 **Project/Task No's. :** NWBCS IRA / 3800

Date Started : 2-17-90 **Date Completed :** 2-18-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc.

Surveyed Location : N 193124.69 E 2176635.17

Surveyed Elevation : GS 5141.58 ft. TOC 5143.38 ft.

Total Depth Drilled : 40.0 ft. **Drilling Type :** Hollow-Stem Auger Mobile B-57 Drill rig.

Static Water Level Depth : Toc 35.35 ft. 2-20-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
				8" Steel protective casing set in grout w/ concrete pad			Ground Surface
5		Cuttings		Blank 4" ID PVC sch. 40 w/ flush-threaded joints			Sand, silty; lt. brown, v. fine grained, loose, dry to sli. moist.
							Clay in matrix @ 6-8'
10				Grout Portland Type I w/ 4% bentonite gel			Sand, clayey; lt. brown, v. fine gr. to silt, firm, sli. moist.
15				Borehole dia. 10.5"			Clay, sandy; lt. brown, occ. small pebbles, stiff, sli. moist.
20				19.0 Bentonite Pellets (Holeplug)			Sand and Gravel; coarse gr. sand, small pebbles ½" to 1" dia., moist.
				24.0 Fm. collapse			

Borehole/Well No. : 22505 **Project/Task No's. :** NWBCS IRA / 3800

Date Started : 2-17-90 **Date Completed :** 2-18-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
	29/11/12 18"	Split Spoon and Cuttings	67%		Formation collapse		Sand and Fine Gravel, sli. silty; fine to very coarse gr. sand, ½" to 2" dia. gravel, poorly sorted, pebbles angular to subrounded, lt. brown, moist.
					27.5		
30	7/20/30 16"				29.5		
					WL 33.35 BGL ▽ 2-20-90		
35	26/37/22 18"				Well screen 0.020 slots 4" PVC sch. 40		Sand and Fine Gravel, silty; lt. brown, v. coarse sand, poorly sorted, saturated Coarse gravel 36-37' Top of Denver Fm @ 37.0
					Sand Pack (10-20 sand)		
					39.5		
40	13/37/47 18"				40.0 (Bottom plug) TD 40.0		Claystone; blue-gray w/ iron staining in partings and fractures, hard, no free water in fractures, dry to slightly moist.

Borehole/Well No. : 22506 **Project/Task No's. :** NWBCS IRA / 3800

Date Started : 2-18-90 **Date Completed :** 2-18-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc.

Surveyed Location : N 193269.17 E 2176765.56

Surveyed Elevation : GS 5146.06 ft. TOC 5147.80 ft.

Total Depth Drilled : 40.0 ft.

Static Water Level Depth : TOC 39.85 ft. 2-20-90

Drilling Type : Hollow-Stem Auger Mobile B-57 Drill rig

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
				8" Steel protective casing set in grout w/concrete pad			Ground Surface
							Sand, silty; tan, v. fine grained, dry to slightly moist.
5				Blank 4" ID PVC sch.40 w/ flush threaded joints			Clay, silty, sandy; lt. brown, stiff, dry to slightly moist.
							Sand, silty; lt. tan, v. fine gr. sand, dense, dry.
10		Cuttings		Grout Portland Type I w/ 4% bentonite gel.			Silt, sandy, clayey; lt. tan to lt. brown, dense, dry to slightly moist.
15				Borehole dia. 10.5"			Clay, sandy, silty; lt. brown, stiff to soft, occasional pebbles, moist.
20				22.0 Bentonite Pellets (Holeplug)			Sand and Fine Gravel, silty; v. coarse sand, pebble 1/4" to 1/2", occ. 2" dia, dry to sl. moist.

Borehole/Well No. : 22506 **Project/Task No's. :** NWBCS IRA / 3800

Date Started : 2-18-90 **Date Completed :** 2-18-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/ % Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
30	B/ow Cts.	Split Spoon and Cuttings			Bentonite pellets 27.0 Formation Collapse		Sand and Fine Gravel; lt. brown, v. coarse gr. sand, pebbles to 2" dia., moist
					32.5 Sand pack (10-20)		Sand and Gravel, lt. brown, v. coarse sand, pebbles to 3" dia., moist.
35	23/50 12"				34.25 Well screen 0.020" slots 4" PVC sch. 40 WL 37.85 BGL 2-20-90		Sand and Gravel; silty; tan to lt. brown, v. coarse sand, pea gravel and pebbles to 1½" dia., slightly moist.
40	10/13/14 18"				39.25 39.75 (Bottom plug) TD 40.0		Top of Denver Fm. @ 39.0 Claystone; blue-gray w/ iron staining, fragmented and fractured, moderately soft, dry.

Borehole/Well No. : 22507 **Project/Task No's. :** NWBCS IRA/3800

Date Started : 1-31-90 **Date Completed :** 2-1-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc.

Surveyed Location : N 191238.91
E 2174486.98

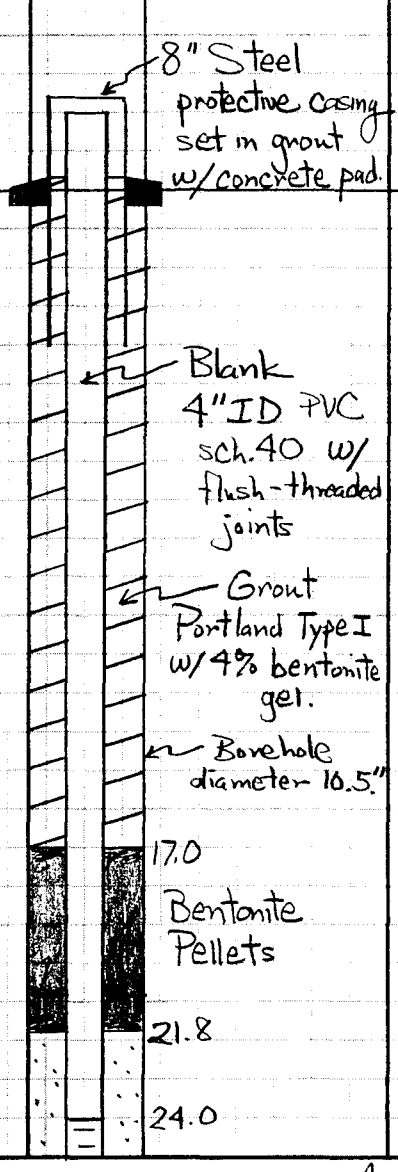
Surveyed Elevation : GS 5121.65 ft.
TOC 5123.58 ft.

Total Depth Drilled : 40.0 ft.

Static Water Level Depth : TOC 31.19 ft.
2-1-90

Drilling Type : Hollow-Stem Auger
Mobile B-57 Drill rig

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description



Ground Surface

NOTE: See Well 22501 for lithologic description. Wells 22501 and 22507 are approx. 10 ft. apart.

Borehole/Well No. : 22507 **Project/Task No's. :** NWBCS IRA/3800

Date Started : 1-31-90 **Date Completed :** 2-1-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
30			WL 29.19 BGL 2-1-90	Well screen 0.020" slots, 4" PVC, sch. 40 flush-threaded joints Sandpack (10-20 sand) 39.0 39.5 (Bottom plug) TD 40.0			NOTE: See Well 22501 for lithologic description.
35							
40							

Borehole/Well No. : 27501 **Project/Task No's. :** NWBCS IRA/3800

Date Started : 1-18-90 **Date Completed :** 1-24-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc.

Surveyed Location : N 189481.35 E 2173434.49

Surveyed Elevation : GS 5129.68 ft. TOC 5131.58 ft.

Total Depth Drilled : 59.0 ft.

Static Water Level Depth : TOC, 35.30 ft. 2-12-90

Drilling Type : Hollow-Stem Auger Mobile B-57 Drill Rig

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
	Blow Counts per 8 inches			8" Steel protective casing set in grout with concrete pad.			**Ground Surface**
5		Cuttings		Grout Portland Type I w/ 4% bentonite gel.			Sand, silty; tan, fine grained with occasional small pebbles, dry.
				Blank 4" ID, PVC Sch 40			Clay, sandy; lt. brown, interbedded with silty sand zones.
10	13/13/18	Split Spoon					Clay, sandy; lt. brown, stiff, white caliche zones, a few small pebbles, slightly moist
15		Cuttings		Borehole diameter 10.5"			
20	8/6/11	Split Spoon	67%				Clay, sandy; olive brown, soft, moist
		Cuttings					Sand; lt. brown w/ iron staining, med to coarse grained, w/ small pebbles, poorly sorted, slightly moist.
25							

Borehole/Well No. : 27501 **Project/Task No's. :** NWBCS IRA / 3800

Date Started : 1-18-90 **Date Completed :** 1-24-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count / Feed Pressure	Sample Type	Sample Depth / % Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
	Blow cts per 18"	Cuttings					Sand, gravelly; coarse grained, moist.
					Grout		Clay, sandy; lt. brown, moist.
30	24/16/19	Split Spoon					Sandy clay grading to clayey sand, grading to sand.
					WL 33.3 BGL (2-12-90)		Sand; coarse grained to granules, organic matter and iron staining.
					34.0 Bentonite Pellets		
35		Cuttings			35.5 Sand Pack (10-20 sand) 37.0		Sand, gravel, and clay. Pea gravel.
					Flowing Sand to 37 feet: natural sand pack		
40	6/11/18	Split Spoon	67%				Sand and gravel, silty; lt. brown to gray, very coarse grained sand, granules and small pebbles, saturated.
					44.0		
45					Well Screen 0.020" slots 4" PVC, Sch 40.		Sand, clayey, lt. brown, coarse grained sand, wet.
		Cuttings					
50							Sand and gravel, clayey, wet.
					54.0		Top of Denver Fm @ 54.0'
55					54.5 (Bottom plug)		Claystone, silty; blue-gray, dry.
					TD 59.0		
60							NOTE: Due to flowing sand problems during well installation, approx. 400 gallons of potable water were added to install screen + casing. Low permeability of the formation opposite the screened interval prevented recovery of the total amount of water added.

Borehole/Well No. : 27502 **Project/Task No's. :** NWBCS IRA/3800

Date Started : 1-26-90 **Date Completed :** 1-26-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc.

Surveyed Location : N 190079.79
E 2173959.14

Surveyed Elevation : GS 5126.25 ft.
TOC 5127.84 ft.

Total Depth Drilled : 45.0 ft.

Static Water Level Depth : TOC, 33.09 ft. 1-26-90

Drilling Type : Hollow-stem auger
Mobile B-57 Drill rig

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
					8" Steel protective casing set in grout with concrete pad.		
0							Ground Surface
							Sand, silty; lt. to med. brown, fine to coarse grained, occasional granules and small pebbles, dry to slightly moist.
5					Blank 4" ID PVC sch. 40 flush-threaded joints.		
10		Cuttings			Grout Portland Type I w/ 4% bentonite gel		Sand, clayey; brown, occasional small pebbles and caliche zones, sli. moist, grading to Clay, silty and sandy; brown, sli. moist.
15					Borehole diameter 10.5"		
							Clay, silty to sandy; brown, fine sand grains, more caliche zones, slightly moist
20							
					22.5 Bentonite pellets		Clay, silty; med. brown, soft, greasy texture, moist
25							

Borehole/Well No. : 27502 **Project/Task No's. :** NWBCS IRA/3800

Date Started : 1-26-90 **Date Completed :** 1-26-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
	Blow Counts.	Cuttings			25.5		Clay, silty; med. brown, soft, moist
					28.0		Gravel; pea size to small pebbles, dry to slightly moist.
30					▽ WL 31.1 BGL 1-26-90		Clay, silty; brown, stiff, sli. moist
35					Well screen 0.020" slots, 4" PVC, sch40 flush threaded joints		Sand and gravel, slightly silty; v. coarse grained sand and small pebbles, poorly sorted, arkosic sand and granite pebbles, saturated.
40					Sand pack (10-20 sand)		Top of Denver Fm @ 41.0 Claystone; blue-gray.
					43.0 43.5 (Bottom plug)		Sandstone, silty; olive green, v. fine grained, well sorted, moist but not saturated.
45	40/5"	Split Spoon			TD 45'		

Borehole/Well No. : 27503 **Project/Task No's. :** NWBCS IRA/3800

Date Started : 1-26-90 **Date Completed :** 1-29-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc.

Surveyed Location : N 190679.07
E 2174489.09

Surveyed Elevation : GS 5127.30 ft.
TOC 5129.08 ft.

Total Depth Drilled : 59.0 ft.

Static Water Level Depth : TOC, 36.26 ft. 1-30-90

Drilling Type : Hollow-stem auger
Mobile B-57 Drill rig

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
				8" Steel protective casing set in grout w/ concrete pad.			**Ground Surface**
							Sand, silty; lt. brown, fine to med. grained, dry to slightly moist.
5				Blank 4" ID, PVC, sch. 40, flush-threaded joints.			Sand, clayey grading to silty; brown, med. grained, sli. moist to moist.
10		Cuttings		Grout, Portland Type I w/ 4% bentonite gel.			Clay, sandy grading to silty; lt. brown, fine grained sand, occasional granules, stiff, slightly moist, caliche zones 13-15'.
15				Borehole diameter 10.5"			Clay, silty to sandy; brown, stiff, thin caliche layers, slightly moist.
20							Clay, silty; brown, soft, moist

Borehole/Well No.: 27503 **Project/Task No's.:** NWBCS IRA/3800

Date Started: 1-26-90 **Date Completed:** 1-29-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
30	Blow counts	Cuttings			Grout		Clay, silty; brown, soft to firm to stiff, moist.
					WL 34.26 BGL 1/30/90		Sand and gravel; v. coarse grained sand, granules and small pebbles to 1" dia., dry to sli. moist.
35	7/7/11 18"				34.5 Bentonite pellets 37.5		Clay, silty; brown, soft, moist.
							Sand, clayey to silty; lt. brown with iron staining in clayey zones, fine to coarse grained sand, saturated to moist in clayey zones.
40	4/10/9 18"	Split Spoon and Cuttings	67%		Formation Collapse		
					44.0		Sand, little silt, no clay; arkosic, v. coarse grained with small pebbles to ½" dia., well sorted, saturated.
45	3/3/7 18"		78%		46.2 Well screen 0.020" slots, 4" PVC, sch. 40, flush-threaded joints		Sand, clayey; lt. gray to brown to rust, horizontal iron staining, fine grained.
50	3/3/5 18"				Sand pack (10-20 sand)		Sand and gravel, <5% silt, no clay; v. coarse grained sand, granules, well sorted, excellent aquifer, saturated.
55	Slough		0		56.2 56.7 (Bottom plug)		Top of Denver Fm. @ 56' Claystone, blue-gray, hard.
					TD 59.0		
60							

Borehole/Well No. : 27504 **Project/Task No's. :** NWBCS IRA/3800

Date Started : 1-30-90 **Date Completed :** 1-30-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc.

Surveyed
Location : N 190687.00
E 274484.22

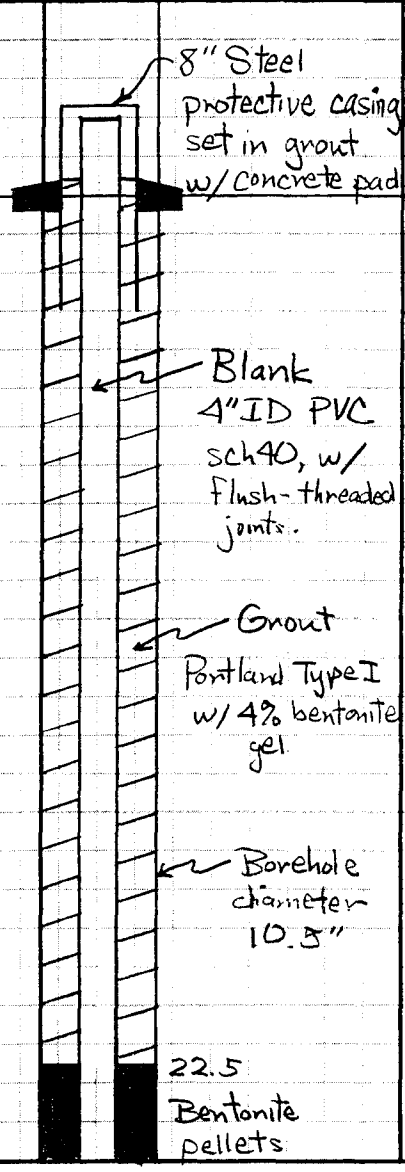
Surveyed
Elevation : GS 5127.37 ft.
TOC 5129.33 ft.

Total Depth Drilled : 48.0 ft.

Static Water Level Depth : TOC, 36.07 ft. 1-30-90

Drilling Type : Hollow-Stem auger
Mobile B-57 Drilling

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description



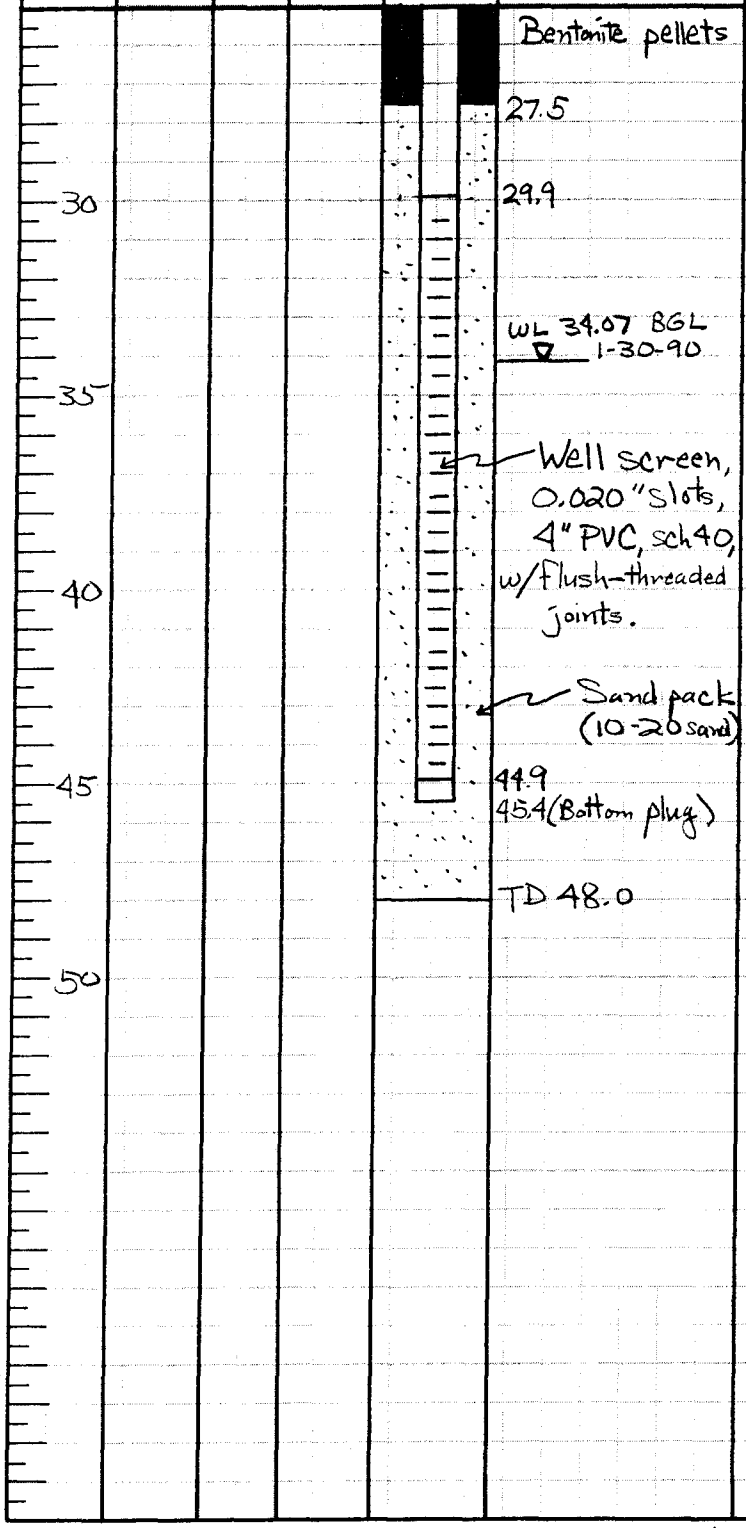
Ground Surface

NOTE: See Well 27503 for lithologic description. Wells 27503 and 27504 are approx. 9 ft apart.

Borehole/Well No. : 27504 **Project/Task No's. :** NWBCS IRA/3800

Date Started : 1-30-90 **Date Completed :** 1-30-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description



NOTE: See Well 27503 for lithologic description.

Borehole/Well No. : 27505 **Project/Task No's. :** NWBCS IRA / 3800

Date Started : 1-17-90 **Date Completed :** 1-17-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc.

Surveyed Location : N 189723.24 E 2173142.36

Surveyed Elevation : GS 5130.15 ft. TOC 5131.64 ft.

Total Depth Drilled : 45.0 ft.

Static Water Level Depth : TOC, 36.1 ft. 1-17-90

Drilling Type : Hollow-Stem Auger Mobile B-57 Drill Rig

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
	Blow Counts						Location is 8.5' S of well 27009. Lithologic log is from 27009.
					8" Steel protective casing set in grout with concrete pad		**Ground Surface**
5	30/12"	Split Spoon			Grout Portland Type I w/ 4% bentonite gel.		Sand, clayey; fine to med. grained, moist. Interbedded with sandy clay zones.
10	40/12"				Blank 4" ID PVC sch 40		
					Borehole Diameter 10.5"		Sand, clean; fine to med. grained, moist, dense
15	17/12"						
20							Clay, sandy, slightly calcareous; moist.
25	30/12"				24.0 Bentonite Pellets		Sand and Gravel; v. coarse grained Sand, clean

Borehole/Well No. : 27505 **Project/Task No's. :** NWBCS/3800

Date Started : 1-17-90 **Date Completed :** 1-17-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
25					Bentonite Pellets		Sand and Gravel; v. coarse grained sand, clean.
					26.5		
					28.5		Clay, sandy; interbedded sand and clay layers. Sand is coarse grained
30	17/12"				Well Screen 0.020" Slots 4" PVC, sch. 40		Gravel and Sand, v. coarse grained sand and gravel, moist to wet.
					▽ 34.4 BGL 36.1 TOC 1-17-90		
35	33/12"	Split Spoon			Sand Pack (10-20 Sand)		Sand w/ some Gravel, v. coarse grained sand, pea gravel, dense, wet.
40	23/12"						
					43.5		
					44.0 (Bottom Plug)		
45	23/12"				Cavings		Sand, clayey; inferred from sampling well 27009. Very slow recovery after pumping dry.
					TD 45' (27505)		
50	18/12"						Top of Denver @ 50.5' Claystone; blue gray, dry.
55	50/12"						TD 55.5' (Well 27009)

Borehole/Well No. : 27506 **Project/Task No's. :** NWRCS IRA/3800

Date Started : 1-25-90 **Date Completed :** 1-25-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc.

Surveyed Location : N 189460.21
E 2173437.86

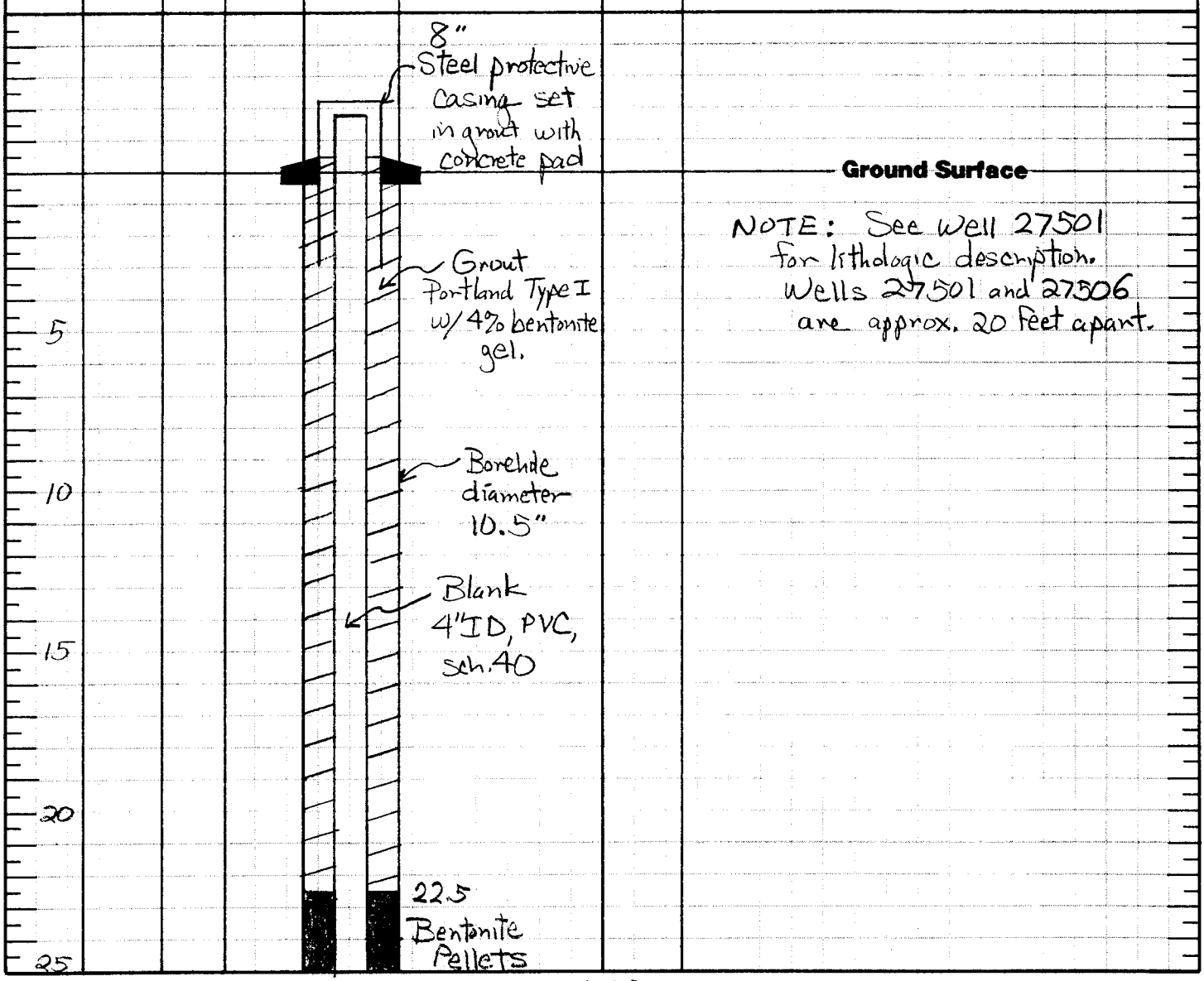
Surveyed Elevation : GS 5129.36 ft.
TOC 5130.96 ft.

Total Depth Drilled : _____ ft.

Static Water Level Depth : TOC, 34.83 ft. (2-12-90)

Drilling Type : Hollow-Stem Auger
Mobile B-57 Drill Rig

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description



NOTE: See Well 27501 for lithologic description. Wells 27501 and 27506 are approx. 20 feet apart.

Borehole/Well No. : 27506 **Project/Task No's. :** NWBCS IRA/3800

Date Started : 1-25-90 **Date Completed :** 1-25-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
30			WL 33.0 BGL 1-25-90	25.5 28.2 Well screen 0.020" slots, 4" PVC, sch 40 Sand pack (10-20 sand) 43.2 43.7 (Bottom plug) TD 45.0			NOTE: See Well 27501 for lithologic description.
35							
40							
45							

Borehole/Well No. : 27507 **Project/Task No's. :** NWBCS IRA/3403

Date Started : 3-19-90 **Date Completed :** 3-19-90

Drilling Inspector : B. Charles

Drilling Company : Geotechnical Services, Inc.

Surveyed Location : N 190323.82 E 2173667.29

Surveyed Elevation : GS 5127.67 ft. TOC 5129.61 ft.

Total Depth Drilled : 49.0 ft.

Static Water Level Depth : TOC 36.0 ft. 3-20-90

Drilling Type : Hollow-Stem Auger Mobile B-61 Drill rig

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
				8" Steel protective casing set in grout w/concrete pad.			Ground Surface
							Clay, sandy; med. brown, soft, moist.
5				Blank 4" ID, PVC sch.40, w/ flush-threaded joints.			Clay, sandy; lt. brown, caliche zones, stiff, slightly moist.
10		Cuttings		Grout Portland Type I w/ 4% bentonite gel.			Clay, sandy; lt. brown, soft to firm, slightly moist.
15				Borehole diameter 10.5"			Silt, sandy; tan, v. fine grained sand, interbedded w/thin sandy clay zones and clayey silt zones, dry.
20							Sand, silty; lt-med. brown, fine to med. grained, sli. moist.

Borehole/Well No. : 27507 **Project/Task No's. :** NWBCS IRA/3403

Date Started : 3-19-90 **Date Completed :** 3-19-90

Sample Information				Well Construction		Subsurface Information	
Depth Below Ground Surface (ft.)	Blow Count/ Feed Pressure	Sample Type	Sample Depth/% Recovery	Well Schematic	Material Description	Borehole Schematic	Lithologic and Hydrologic Description
	Blow Counts	Split Spoon and Cuttings			Grout 26.0 Bentonite Pellets (Hole plug) 30.0		Sand and gravel, silty; coarse grained sand, pebbles to 2" dia., moist.
30	8/18"				32.1 Adapter 32.75 WL 34.0 BGL (3-20-90)		Sand, v. silty; lt. brown, fine to med. grained, weakly cemented, sli. moist.
35	5/6/4 18"				Well Screen, 0.036" continuous slots, 4" PVC Certain Teed snap-joints.		Sand and gravel; v. coarse gr. sand, pebbles ½" dia, dry to v. sli. moist.
							Clay, slightly sandy; gray, mottled, iron stain, soft, moist.
							Sand and Gravel; v. coarse sand, ½" dia pebbles, saturated
40	2/6/14 18"				Sand pack (8-12 sand)		Clay, silty and sandy; gray to brown, iron staining, very soft, moist.
							Sand and Gravel, sli. silty; iron staining, v. coarse sand, ½" dia. pebbles, saturated.
45	7/30/15 14"						Top of Denver Fm. @ 45.5
					48.5 48.8 (Bottom plug) TD 49.0		Sandstone, slightly silty; olive green, fine grained, well sorted, abundant heavy minerals, uncemented, wet.
50							Siltstone; tan to green, friable.

APPENDIX B

MK-ES Survey Data

- Table B-1 MK-ES Survey of New Wells
- Table B-2 MK-ES Survey of Existing Wells

TABLE B-1 MK-ES SURVEY OF NEW WELLS

====== COGO ====== Friday March 16. 1990 7:40 AM

Description: ALL NORTHWEST BOUNDARY WELL LOCATION FILES COMBINED

FROM TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING

LIST POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCR
1	189481.354	2173434.493	5129.680	WELL 27501
2	0.000	0.000	5131.580	27501 TOC
3	190079.786	2173959.137	5126.250	WELL 27502
4	0.000	0.000	5127.840	27502 TOC
5	190679.073	2174489.086	5127.300	WELL 27503
6	0.000	0.000	5129.080	27503 TOC
7	190687.000	2174484.222	5127.370	WELL 27504
8	0.000	0.000	5129.330	27504 TOC
9	189723.238	2173142.355	5130.150	WELL 27505
10	0.000	0.000	5131.640	27505 TOC
11	189460.207	2173437.859	5129.360	WELL 27506
12	0.000	0.000	5130.960	27506 TOC
13	191231.857	2174480.015	5121.660	WELL 22501
14	0.000	0.000	5123.680	22501 TOC
15	191965.648	2175950.002	5132.900	WELL 22502
16	0.000	0.000	5135.060	22502 TOC
17	192624.445	2176500.294	5134.490	22503 DRY
19	192981.469	2176505.716	5136.710	WELL 22504
20	0.000	0.000	5138.460	22504 TOC
21	193124.686	2176635.171	5141.580	WELL 22505
22	0.000	0.000	5143.380	22505 TOC
23	193269.167	2176765.561	5146.060	WELL 22506
24	0.000	0.000	5147.800	22506 TOC
25	191238.907	2174486.892	5121.650	WELL 22507
26	0.000	0.000	5123.580	22507 TOC

Description: COORDINATES FOR THE NEW WELL AT NORTHWEST BOUNDARY AND TWO NEARBY WELLS

FROM TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING

LIST POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCR
1	190316.477	2173659.893		27085
2	190301.308	2173644.631		27006
3	190323.821	2173667.286	5127.670	27507
4	0.000	0.000	5129.610	27507 TOC

Coordinates stored Thursday March 29. 1990 6:39 AM

TABLE B-2 MK-ES SURVEY OF EXISTING ARMY WELLS

Well ID	Top of PVC Casing (ft msl)
22003	5124.80
22004	5137.41
22005	5129.06
22007	5146.96
22008	5132.78
22009	5124.08
22010	5124.77
22015	5132.71
22016	5131.86
22017	5132.18
22018	5126.57
22019	5123.18
22020	5123.30
22021	5123.52
22022	5123.63
22023	5124.10
22024	5123.89
22025	5156.82
22026	5123.37
22033	5123.03
22034	5123.18
22035	5125.25
22036	5126.45
22037	5123.53
22038	5123.58
22039	5123.56
22040	5123.97
22041	5122.87
22042	5124.28
22043	5126.16
22044	5141.16
22045	5128.99
22049	5147.70
22050	5143.18
22051	5137.42
22052	5136.16
22053	5137.85

Well ID	Top of PVC Casing (ft msl)
22056	5127.00
22057	5124.46
22059	5134.11
22060	5136.95
22061	5126.63
22062	5130.15
22063	5127.57
22064	5132.04
22065	5129.99
22066	5132.02
22067	5131.24
22069	5134.30
22070	5133.73
22071	5135.42
22072	5135.30
22073	5133.83
22075	5131.56
22076	5126.35
22077	5124.41
22078	5125.22
27002	5136.43
27003	5146.03
27004	5127.85
27005	5129.98
27006	5130.11
27007	5129.74
27008	5132.05
27009	5133.96
27010	5128.30
27011	5130.03
27044	5136.04
27062	5135.63
27063	5131.97
27064	5134.00
27065	5133.48
27066	5132.87
27068	5133.68
27069	5133.60
27070	5134.25
27071	5134.95
27072	5132.81
27086	5128.03
28002	5127.80

Well ID	Top of PVC Casing (ft msl)
28003	5134.64
28004	5141.11
28005	5136.25
28006	5135.27
28007	5135.99
28008	5138.03
28009	5132.88
28023	5134.30
28024	5134.29
28025	5134.78
28026	5134.70

Note: msl = mean sea level

APPENDIX C

NWBS Water Level Measurements in Alluvial Monitoring Wells
February 12 and 13, 1990

APPENDIX C

NWBS WATER LEVEL MEASUREMENTS
IN ALLUVIAL MONITORING WELLS
FEBRUARY 12 AND 13, 1990

Well ID	TOC Elevation (ft msl)	Depth to Water (ft)	Water Level Elevation (ft msl)
22003	5124.80*	32.60	5092.20
22004	5137.41	30.97	5106.44
22005	5129.06*	36.48	5092.58
22007	5146.96	39.12	5107.84
22008	5132.78	40.51	5092.27
22009	5124.08*	32.80	5091.28
22010	5124.77*	32.41	5092.36
22015	5132.71*	39.84	5092.87
22016	5131.86*	39.24	5092.62
22017	5132.18*	39.58	5092.60
22018	5126.57*	33.74	5092.83
22019	5123.18*	31.60	5091.58
22020	5123.30*	31.43	5091.87
22034	5123.18*	31.22	5091.96
22035	5125.25*	33.00	5092.25
22040	5123.97*	32.22	5091.75
22042	5124.28*	34.68	5089.60
22043	5126.16*	34.17	5091.99
22044	5141.16	33.80	5107.36
22045	5128.99*	37.60	5091.39
22049	5147.70	37.70	5110.40
22050 DF	5143.18*	36.67	5106.51
22051	5137.42*	45.58	5091.84
22052	5136.16*	44.43	5091.73
22053	5137.85*	45.40	5092.45
22056	5127.00*	34.39	5092.61
22057	5124.46*	31.67	5092.79
22059	5134.11	41.45	5092.66
22060	5136.95	32.50	5104.45
22061	5126.63*	35.09	5091.54
22062	5130.15*	38.86	5091.29
22063	5127.57	36.88	5090.69
22064	5132.04*	41.35	5090.69
22065	5129.99*	39.04	5090.95
22066	5132.02*	40.49	5091.53
22067	5131.24*	38.81	5092.43
22069	5134.30*	43.06	5091.24

04/05/90

Well ID	TOC Elevation (ft msl)	Depth to Water (ft)	Water Level Elevation (ft msl)
22070	5133.73	41.17	5092.56
22071	5135.42	31.51	5103.91
22072	5135.30	33.53	5101.77
22073	5133.83*	41.41	5092.42
22075	5131.56*	37.39	5094.17
22076	5126.35*	33.46	5092.89
22077	5124.41*	31.91	5092.50
22078	5125.22*	32.86	5092.36
22501	5123.68	31.32	5092.36
22502	5135.06	43.24 (2/18/90)	5091.82
22504	5138.46	31.34 (2/18/90)	5107.12
22505	5143.38	35.35 (2/18/90)	5108.03
22506	5147.80	40.34 (2/18/90)	5107.46
22507	5123.58	31.35	5092.23
27002	5136.43*	41.70	5094.73
27003	5146.03	48.34	5097.69
27004	5127.85*	34.82	5093.03
27005	5129.98*	36.60	5093.38
27006	5130.11	36.10	5094.01
27007	5129.74*	35.11	5094.63
27009	5133.96	38.56	5095.40
27010	5128.30	35.89	5092.41
27011	5130.03	37.49	5092.54
27044	5136.04	36.09	5099.95
27045	5138.23 NS	44.29	5093.94
27053	5157.21 NS	54.90	5102.31
27062	5135.63*	42.51	5093.12
27063	5131.97*	38.80	5093.17
27064	5134.00*	40.64	5093.36
27066	5132.87*	39.26	5093.61
27070	5134.25	40.24	5094.01
27071	5134.95*	40.66	5094.29
27072	5132.81	37.14	5095.67
27073	5145.44 NS	47.61	5097.83
27074	5138.31 NS	41.80	5096.51
27075	5145.83 NS	50.14	5095.69
27076	5145.90*	50.60	5095.30
27077	5145.34 NS	50.20	5095.14
27078	5144.22 NS	49.43	5094.79
27085	5129.00 NS	35.30	5093.70
27086	5128.03	35.46	5092.57
27501	5131.58	35.30	5096.28
27502	5127.84	33.19	5094.65
27503	5129.08	36.15	5092.93
27504	5129.33	36.39	5092.94
27505	5131.64	36.11	5095.53
27506	5130.96	34.83	5096.13
27507	5129.61	35.95 (3/22/90)	5093.66

04/05/90

Well ID	TOC Elevation (ft msl)	Depth to Water (ft)	Water Level Elevation (ft msl)
28002	5127.80*	31.54	5096.26
28003	5134.64*	38.07	5096.57
28004	5141.11*	44.10	5097.01
28005	5136.25*	38.74	5097.51
28006	5135.27*	37.33	5097.94
28007	5135.99*	37.72	5098.27
28008	5138.03*	39.54	5098.49
28009	5132.88*	33.65	5099.23
28011	5139.99 NS	40.27	5099.72
28023	5134.30*	36.26	5098.04
28024	5134.29*	36.25	5098.04
37330	5126.75 NS	34.35	5092.40
37331	5126.79 NS	34.22	5092.57
37332	5136.58 NS	45.13	5091.45
37333	5129.24 NS	37.05	5092.19
37334	5133.04 NS	41.15	5091.89
37335	5122.71 NS	33.40	5089.31
37382	5123.40 NS	34.63	5088.77
37385	5116.70 NS	31.81	5084.89
37386	5134.20 NS	43.08	5091.12

NOTES: All wells were surveyed by MK-ES unless noted otherwise

DF = Denver Formation

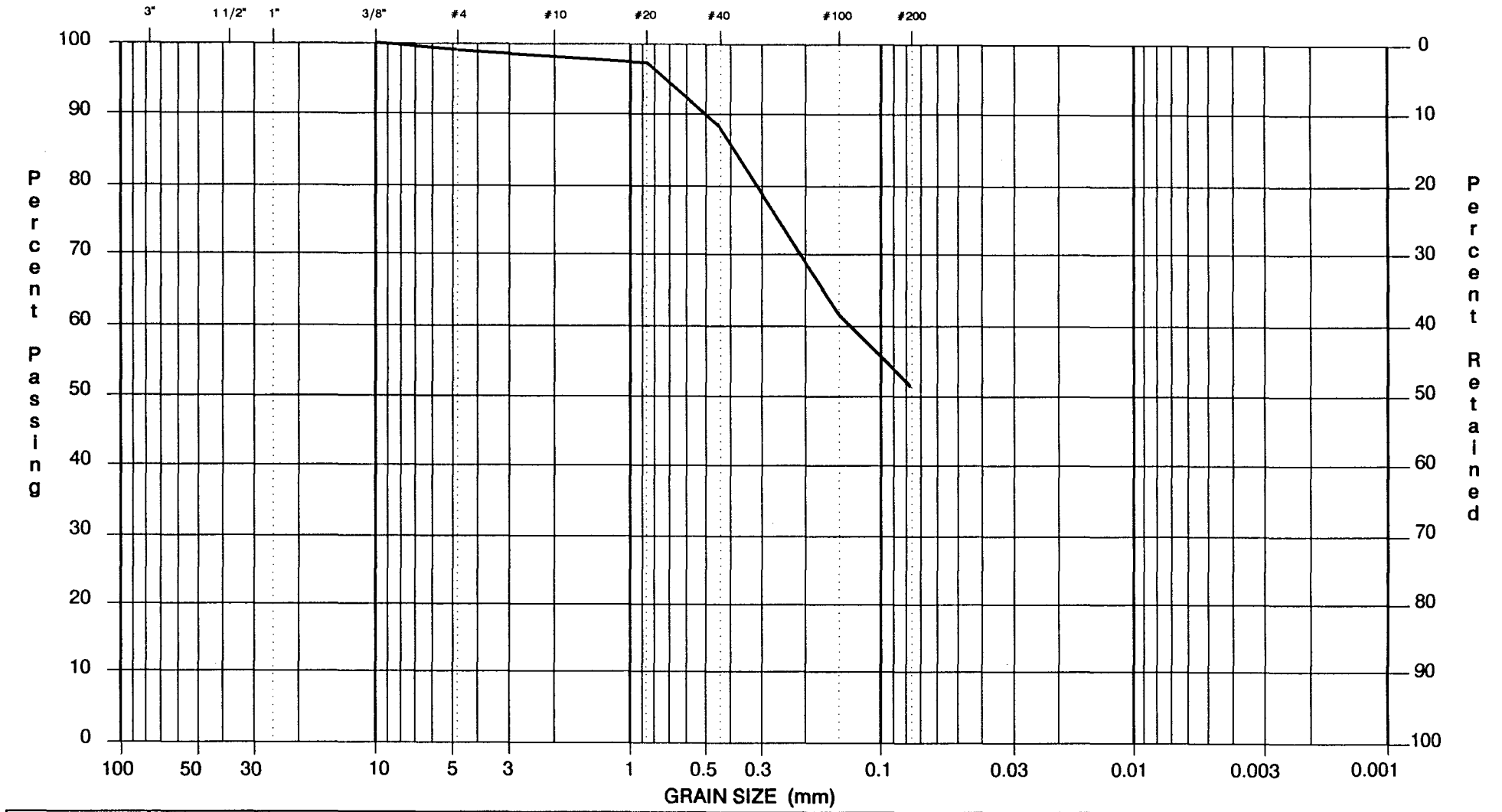
NS = Not surveyed by MK-ES

*MK-ES TOC elevation was different than elevation listed in RMA database. Most discrepancies were a few tenths of a foot or less

msl = mean sea level

APPENDIX D

Results of Physical Properties Testing of Soil Samples



UNIFIED	GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	FINES

Sample Identification	Sample Description	Lab No.
27501 @ 0 - 5 feet	Clay, very sandy, silty (CL)	Den.

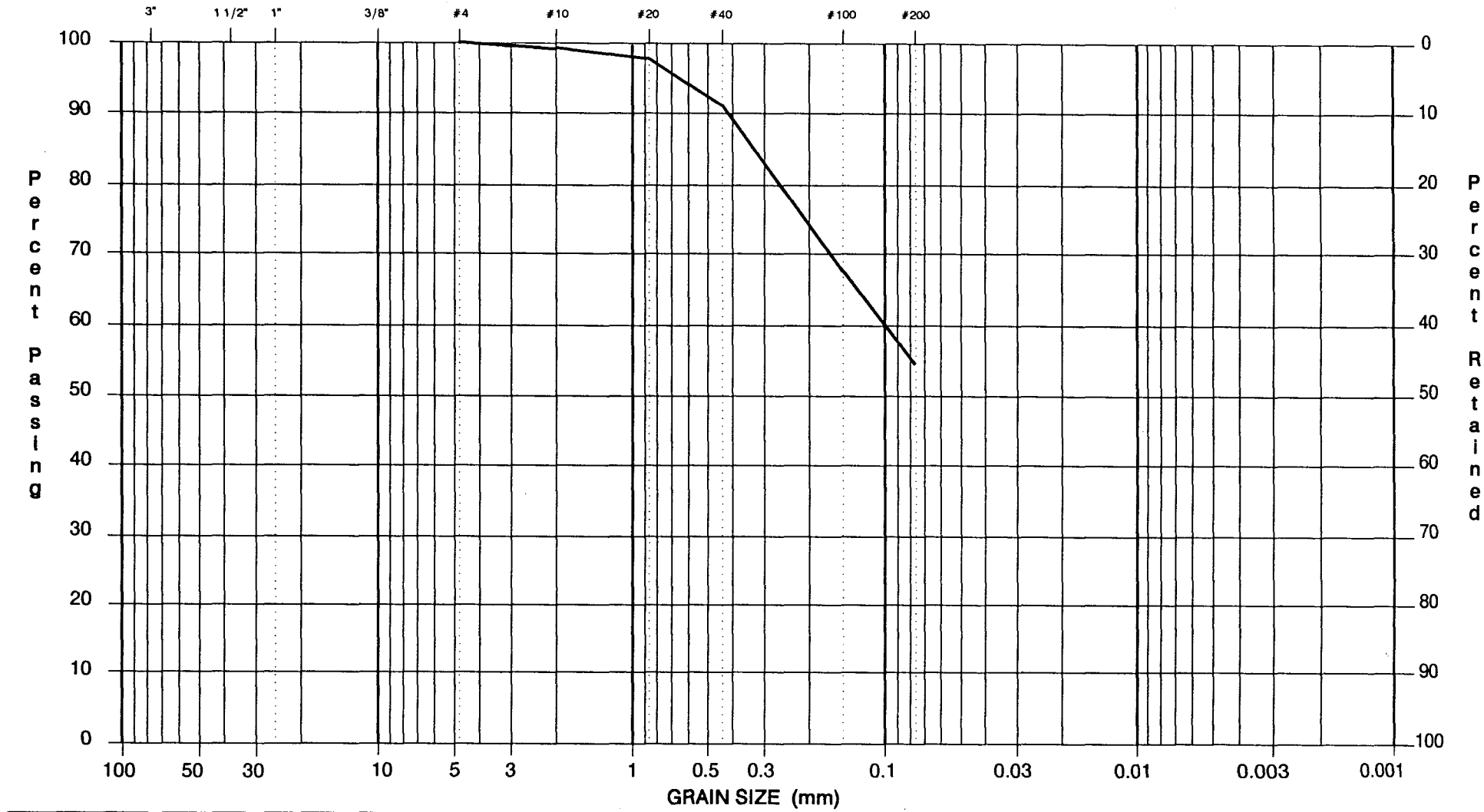
Geotechnical Services Inc.

GRAIN SIZE REPORT

Project	Northwest Boundary
Location	Rocky Mountain Arsenal, Colorado
Job No.	909BD17
Date	February 12, 1990

Form 210 12/88

D-1



UNIFIED	GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	FINES

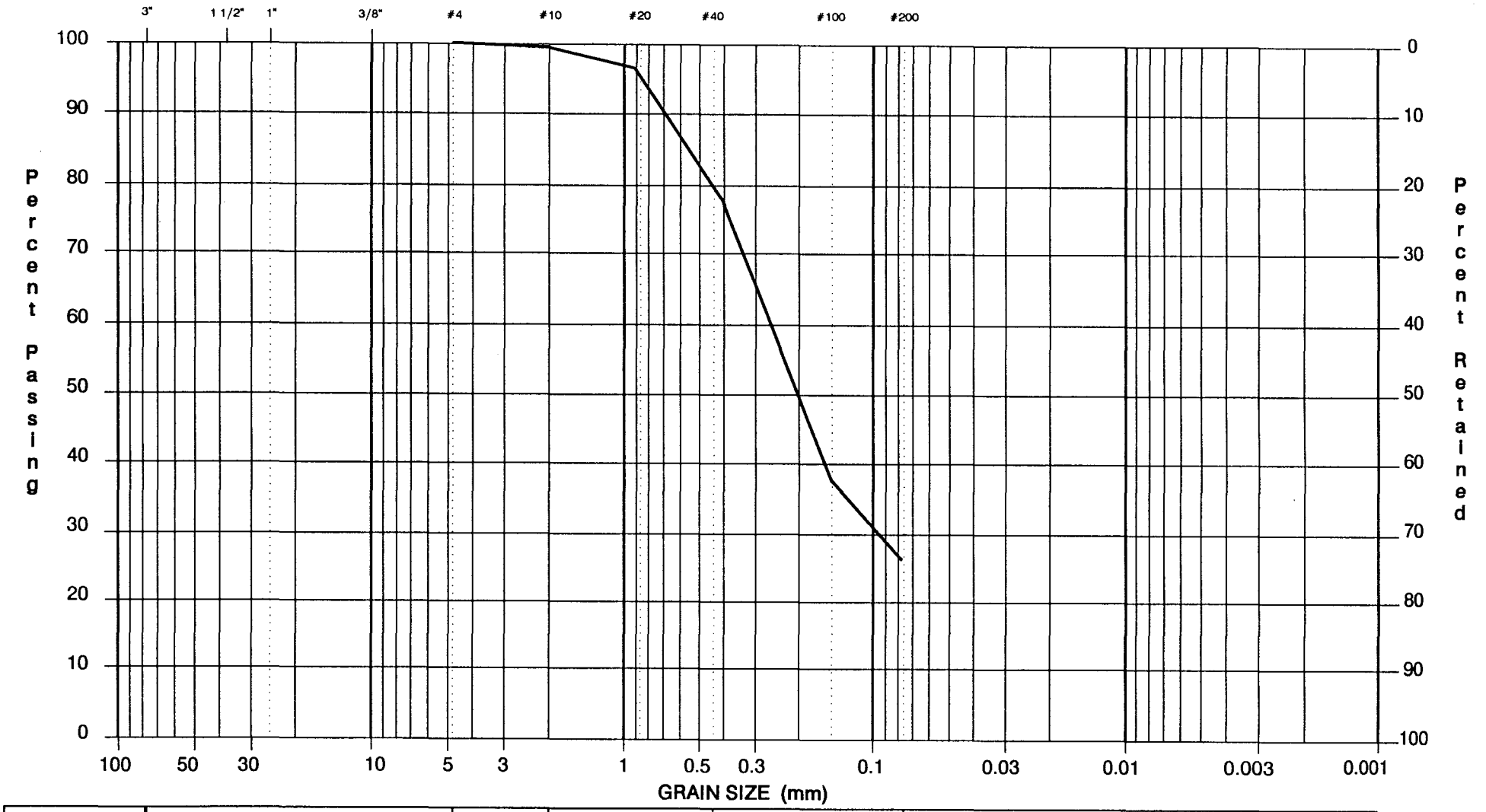
Sample Identification	Sample Description	Lab No.
27501 @ 5 - 10 feet	Clay, very sandy, silty (CL)	Den.

Geotechnical Services Inc.

GRAIN SIZE REPORT

Project	Northwest Boundary
Location	Rocky Mountain Arsenal, Colorado
Job No.	909BD17
Date	February 12, 1990

Form 210 12/88



UNIFIED	GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	FINES

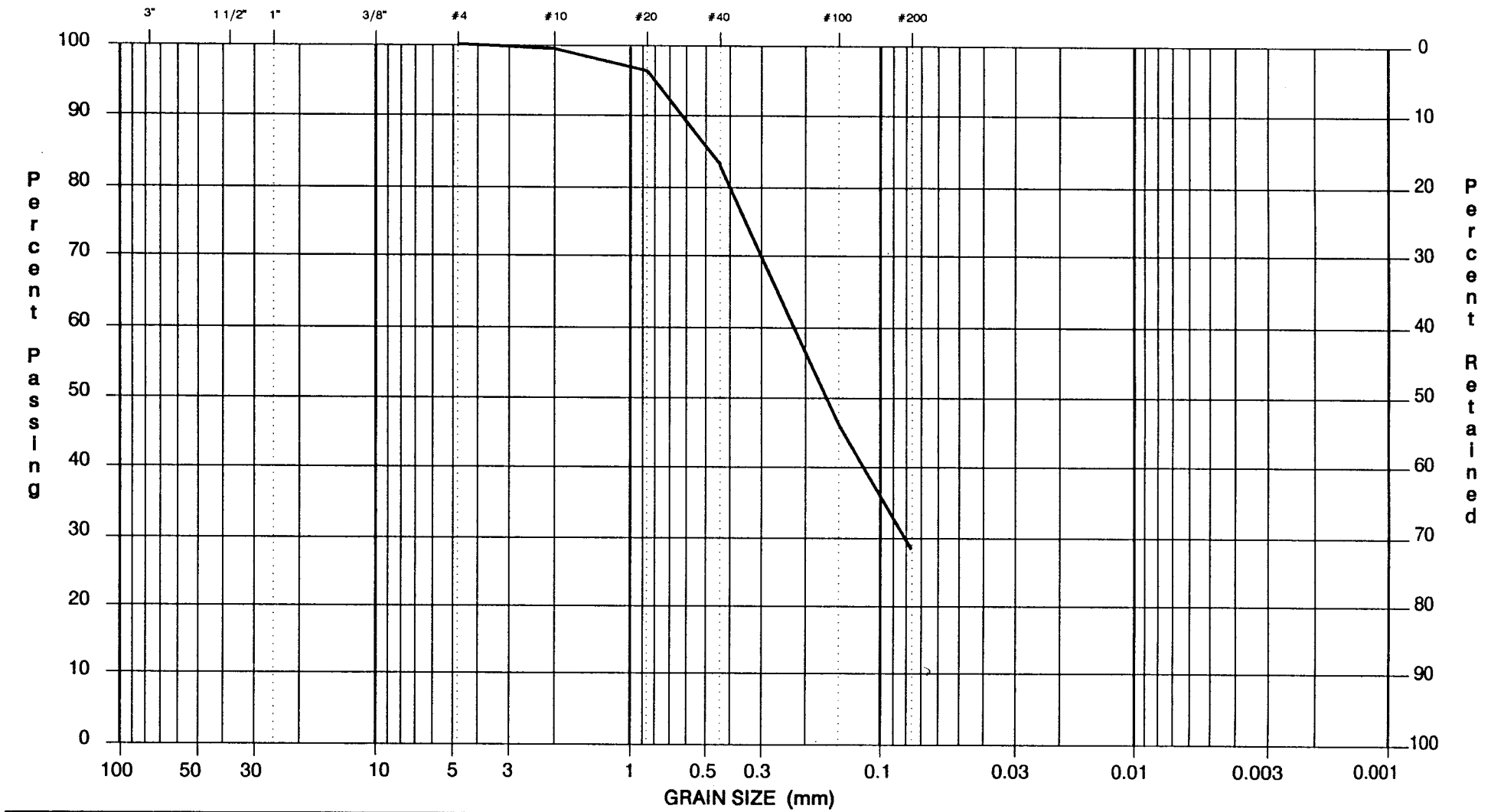
Sample Identification	Sample Description	Lab No.
27502 @ 0 - 10'	Sand, silty and clayey (SC-SM)	Den.

Geotechnical Services Inc.

GRAIN SIZE REPORT

Project	Northwest Boundary
Location	Rocky Mountain Arsenal, Colorado
Job No.	909BD17
Date	February 12, 1990

Form 210 12/88



UNIFIED	GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	FINES

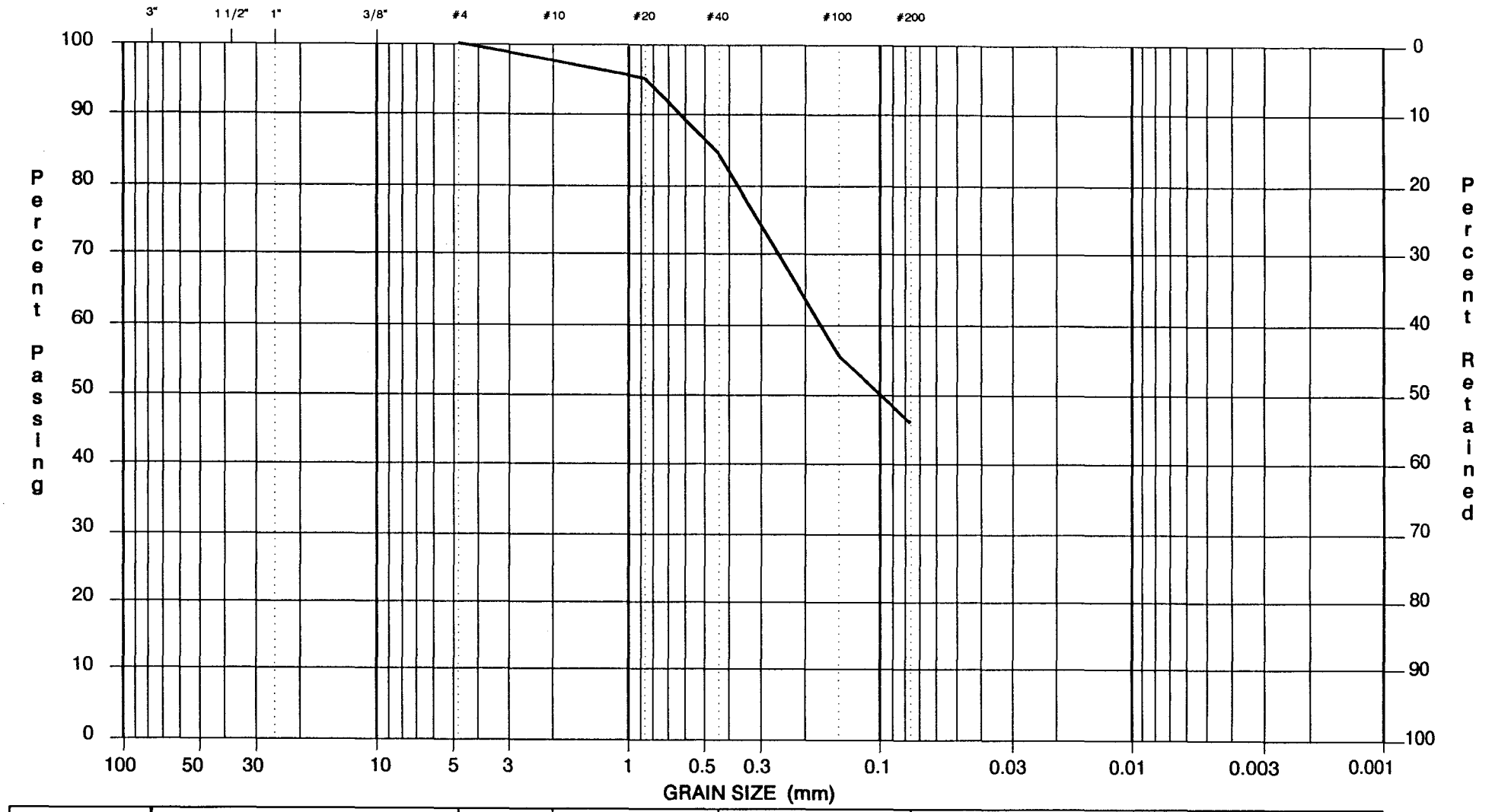
Sample Identification	Sample Description	Lab No.
27503 @ 0 - 5 feet	Sand, silty, and clayey (SC-SM)	Den.

Geotechnical Services Inc.

GRAIN SIZE REPORT

Project	Northwest Boundary
Location	Rocky Mountain Arsenal, Colorado
Job No.	909BD17
Date	February 12, 1990

Form 210 12/88



UNIFIED	GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	FINES

Sample Identification	Sample Description	Lab No.
27503 @ 5 - 10'	Sand, clayey, slightly silty (SC)	Den.

Geotechnical Services Inc.

GRAIN SIZE REPORT

Project	Northwest Boundary
Location	Rocky Mountain Arsenal, Colorado
Job No.	909BD17
Date	February 12, 1990

Form 210 12/88

SAMPLE IDENTIFICATION	SAMPLE DEPTH (ft)	SAMPLE DIA. (in)	SAMPLE HGT. (in)	WATER CONTENT (%)	DENSITY		VOID RATIO (e)	SAT. (%)	UNCONFINED COMPRESSION		ATTERBERG LIMITS			CONS TEST *	% PASS #200 SIEVE	CLASSIFICATION
					WET (pcf)	DRY (pcf)			QU (tsf)	STRAIN (%)	LL	PL	PI			
27501	0' - 5'										33.1	12.7	20.4		51.0	Clay, very sandy, silty (CL)
27501	5' - 10'										36.8	11.6	25.2		54.4	Clay, very sandy, silty (CL)
27502	0' - 10'										22.6	15.3	7.3		27.1	Sand, silty and clayey (SC-SM)
27503	0' - 5'										23.0	16.5	6.5		29.1	Sandy, silty and clayey (SC-SM)
27503	5' - 10'										29.6	11.1	18.5		47.1	Sand, clayey, slightly silty (SC)

Geotechnical Services Inc.

SUMMARY OF SOIL TESTS

Project: Northwest Boundary

Location: Rocky Mountain Arsenal, Colorado

Job No.: 909BD17

Date: February 12, 1990

APPENDIX E

Analytical Data QA/QC

- Table E-1 NWBS Analytical Program Certified Reporting Limits (CRLs) and Methods

APPENDIX E

ANALYTICAL DATA QA/QC

A total of 27 monitoring wells were sampled in February 1990 and analyzed for organochlorine pesticides (OCPs), aromatic and halogenated volatiles, DIMP, DMMP, and DBCP. PM/RMA-certified analytical methods were used; the analyte list, certified reporting limits, and method numbers are shown on Table E-1. Appendix F contains the analytical data.

Evaluation of the analytical and field QC data indicates that sampling procedures were adequate and the results reproducible. No sample extraction or analysis holding times were exceeded; thus, only the sample dates are included in Appendix F.

Laboratory control samples for aldrin and hexachlorocyclopentadiene (CL6CP) experienced low recoveries due to a laboratory glassware problem. The method was considered out of control for aldrin and "hex"; however, natural matrix spike recoveries from two well samples were 114 and 103 percent for aldrin and 70 and 41 percent for "hex." These recoveries are within acceptable ranges; therefore, the analytical results for aldrin and "hex" for the well samples do not appear to have been affected and are considered valid.

Laboratory quality control data were approved for all other analytes by the laboratory and are not included here. A discussion of the field quality control program is included in the paragraphs below.

Field quality control samples collected included duplicate samples (2), field blanks (2), rinse blanks (2), trip blanks (8),

TABLE E-1 NWBS ANALYTICAL PROGRAM CERTIFIED REPORTING LIMITS (CRLs) AND METHODS

ANALYTE	CRL (ug/l)	METHOD
ALDRN	0.0830	MM8A
CL6CP	0.0830	
CLDAN	0.152	
DLDRN	0.0539	
ENDRN	0.0600	
ISODR	0.0560	
PPDDE	0.0460	
PPDDT	0.0590	
111TCE	2.4	UU8
112TCE	1.6	
11DCLE	1.4	
12DCD4	2.6	
12DCE	3.2	
12DCLE	0.72	
13DMB	2.9	
BCHPD	1.8	
C6H6	2.7	
CCL4	4.9	
CD2CL2	5.2	
CHCL3	1.7	
CLC6H5	1.8	
DBCP	5.6	
DCPD	3.7	
DMDS	3.7	
ETBD10	2.3	
ETC6H5	2.4	
MEC6H5	3.5	
MIBK	1.2	
TCLEE	2.9	
TRCLE	2.0	
XYLEN	2.4	
DIMP	10.1	QQ8
DMMP	16.3	
DBCP	0.130	Q8

and natural matrix spikes (all samples for volatiles and 2 samples for the remaining analytes). Duplicate, rinse blank, and natural matrix spike samples were analyzed for all of the contaminants listed above. Field and trip blanks were analyzed for volatiles only.

Of the two duplicate samples collected, one was from Well 22505 and one was from Well 27503. In Well 22505, dieldrin was the only analyte detected; concentrations were 0.325 ug/l and 0.334 ug/l for the sample and duplicate, respectively. The relative percent difference is 2.7 percent and is excellent agreement.

Chloroform was detected in Well 27503 in concentrations of less than 1.7 ug/l and 1.9 ug/l for the sample and duplicate, respectively. This well is located very close to the edge of the detectable chloroform plume; thus, sample variability is possible. The concentration of chloroform measured in adjacent cluster well 27504 was less than 1.7 ug/l.

No detections were reported for the two field blanks.

Chloroform was reported in rinse blank sample 27503R with a concentration of 2.2 ug/l. The concentration of chloroform for the sample and duplicate for Well 27503 were reported as less than 1.7 ug/l and 1.9 ug/l, respectively. The higher concentration of chloroform reported in the rinse blank was probably caused by the presence of chloroform or free chlorine in the potable water used for decontamination.

Dieldrin was detected in rinse blank sample 22506R with a concentration of 0.0807 ug/l. The concentration of dieldrin reported for Well 22506 was 0.130 ug/l.

Bladder and submersible pumps were used for well purging and sampling. Apparently, an inadequate volume of potable and/or deionized water were pumped through the sampling equipment during decontamination, prior to preparation of the rinse blanks. However, the decontamination procedures in conjunction with the higher volumes pumped during well purging and sampling were adequate to provide valid results for the well samples. The distributions of chloroform and dieldrin for this investigation were consistent with historical distributions reported in the CMP and Task 25.

Methylene chloride (CH2CL2) was detected in trip blank 27072T with a concentration of 16 ug/l. Within the same batch of samples, methylene chloride was also reported for four samples ranging in concentration from 12 to 18 ug/l. Methylene chloride has not been detected in any other well samples; therefore, these reported detections are probably due to contamination within the laboratory procedure and are not valid for Wells 27006, 27011, 27072, and 27085.

Natural matrix spikes analyzed for volatiles exhibited excellent recoveries, ranging from 79 to 130 percent. The three volatile compounds used to spike the samples were 1,2-dichloroethane-D4 (12 DCD4), methylene chloride-D2 (CD2CL2), and ethylbenzene-D10 (ETBD10). Average recoveries for these three compounds were 100.8, 107, and 92.5 percent, respectively. Natural matrix spike recoveries for OCPs ranged from 38 to 118 percent, averaging 95 percent. The lower recoveries were exhibited for chlordane and hexachlorocyclopentadiene (CL6CP) but were within an acceptable range. Recoveries for DIMP, DMMP, and DBCP varied from 97 to 110 percent.

APPENDIX F

Analytical Data

6-APR-1990

Final Data Report for MKE Sampling Programs

The data presented herein has been forwarded to USATHAMA for review, approval, and upload into the RMA Database. The concentration values presented herein are correct for moisture, dilution, accuracy, and number of significant figures. Please note, however, that this data has not been formally approved by USATHAMA and is subject to change.

Flagging Code Descriptions:

FC field: (D) duplicate (C) confirmed (R) analyte not certified
(U) unconfirmed (G) quantitation questionable

QC field: (F) field blank (M) method blank (N) natural matrix spike
(R) rinse blank (S) standard spike (T) trip blank

Pertinent Installation Restoration Data Management System Information:
INSTALLATION: RK LABORATORY: ED FILE: CGW PROGRAM: LMK

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22015

Sample Date: 02/21/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSR004 Lab Number: MK-NWB#4

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3		28.	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		9.8	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		9.6	UGL		N	10.000

Method: UU8
Analysis Number: GSR005 Lab Number: MK-NWB#9

Test Name	Corrected Value		Units	FC	QC	QC Spike
12DCD4		8.5	UGL		N	10.000
CD2CL2		10.	UGL		N	10.000
ETBD10		8.8	UGL		N	10.000
111TCE	LT	2.4	UGL		T	
112TCE	LT	1.6	UGL		T	
11DCLE	LT	1.4	UGL		T	
12DCE	LT	3.2	UGL		T	
12DCLE	LT	0.72	UGL		T	
13DMB	LT	2.9	UGL		T	
BCHPD	LT	1.8	UGL		T	
C6H6	LT	2.7	UGL		T	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22015

Sample Date: 02/21/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSR005 Lab Number: MK-NWB#9

Test Name	Corrected Value		Units	FC	QC	QC Spike
CCL4	LT	4.9	UGL		T	
CH2CL2	ND	5.0	UGL	R	T	
CHCL3	LT	1.7	UGL		T	
CLC6H5	LT	1.8	UGL		T	
DBCP	LT	5.6	UGL		T	
DCPD	LT	3.7	UGL		T	
DMDS	LT	3.7	UGL		T	
ETC6H5	LT	2.4	UGL		T	
MEC6H5	LT	3.5	UGL		T	
MIBK	LT	1.2	UGL		T	
TCLEE	LT	2.9	UGL		T	
TRCLE	LT	2.0	UGL		T	
XYLEN	LT	2.4	UGL		T	

Method: QQ8
Analysis Number: QAI007 Lab Number: MK-NWB#4

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Method: Q8
Analysis Number: QKP007 Lab Number: MK-NWB#4

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22015

Sample Date: 02/21/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLG007 Lab Number: MK-NWB#4

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.193	UGL	C		
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22049

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: B
Method: UU8
Analysis Number: GSU009 Lab Number: K-NWB#36

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		9.8	UGL		N	10.000
CD2CL2		9.7	UGL		N	10.000
ETBD10		8.7	UGL		N	10.000

Method: QQ8
Analysis Number: QAK014 Lab Number: K-NWB#36

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22049

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: B
Method: Q8
Analysis Number: QKQ021 Lab Number: K-NWB#36

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: MM8A
Analysis Number: QLJ014 Lab Number: K-NWB#36

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.346	UGL	C		
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22060

Sample Date: 02/22/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSR006 Lab Number: K-NWB#10

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		9.7	UGL		N	10.000
CD2CL2		12.	UGL		N	10.000
ETBD10		8.7	UGL		N	10.000

Method: UU8
Analysis Number: GSR009 Lab Number: K-NWB#14

Test Name	Corrected Value		Units	FC	QC	QC Spike
12DCD4		10.	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		9.5	UGL		N	10.000
111TCE	LT	2.4	UGL		T	
112TCE	LT	1.6	UGL		T	
11DCLE	LT	1.4	UGL		T	
12DCE	LT	3.2	UGL		T	
12DCLE	LT	0.72	UGL		T	
13DMB	LT	2.9	UGL		T	
BCHPD	LT	1.8	UGL		T	
C6H6	LT	2.7	UGL		T	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22060

Sample Date: 02/22/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSR009 Lab Number: K-NWB#14

Test Name	Corrected Value		Units	FC	QC	QC Spike
CCL4	LT	4.9	UGL		T	
CH2CL2	ND	5.0	UGL	R	T	
CHCL3	LT	1.7	UGL		T	
CLC6H5	LT	1.8	UGL		T	
DBCP	LT	5.6	UGL		T	
DCPD	LT	3.7	UGL		T	
DMDS	LT	3.7	UGL		T	
ETC6H5	LT	2.4	UGL		T	
MEC6H5	LT	3.5	UGL		T	
MIBK	LT	1.2	UGL		T	
TCLEE	LT	2.9	UGL		T	
TRCLE	LT	2.0	UGL		T	
XYLEN	LT	2.4	UGL		T	

Method: QQ8
Analysis Number: QAI012 Lab Number: K-NWB#10

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Method: Q8
Analysis Number: QKP012 Lab Number: K-NWB#10

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22060

Sample Date: 02/22/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLG012 Lab Number: K-NWB#10

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.368	UGL	C		
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22071

Sample Date: 02/22/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSR007 Lab Number: K-NWB#11

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		11.	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		10.	UGL		N	10.000

Method: QQ8
Analysis Number: QAI013 Lab Number: K-NWB#11

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22071

Sample Date: 02/22/90
Depth(ft): 0.0 Sampling Technique: P
Method: QQ8
Analysis Number: QAI014 Lab Number: K-NWB#12

Test Name	Corrected Value	Units	FC	QC	QC Spike
DIMP	108.	UGL		N	105.000
DMMP	138.	UGL		N	126.000

Method: Q8
Analysis Number: QKP013 Lab Number: K-NWB#11

Test Name	Corrected Value	Units	FC	QC	QC Spike
DBCP	LT 0.130	UGL			

Method: Q8
Analysis Number: QKP014 Lab Number: K-NWB#12

Test Name	Corrected Value	Units	FC	QC	QC Spike
DBCP	1.07	UGL		N	1.080

Method: MM8A
Analysis Number: QLG013 Lab Number: K-NWB#11

Test Name	Corrected Value	Units	FC	QC	QC Spike
ALDRN	LT 0.0830	UGL			
CL6CP	LT 0.0830	UGL			
CLDAN	LT 0.152	UGL			
DLDRN	0.527	UGL	C		
ENDRN	LT 0.0600	UGL			
ISODR	LT 0.0560	UGL			
PPDDE	LT 0.0460	UGL			
PPDDT	LT 0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22071

Sample Date: 02/22/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLG015 Lab Number: K-NWB#12

Test Name	Corrected Value	Units	FC	QC	QC Spike
ALDRN	0.641	UGL		N	0.563
CL6CP	0.390	UGL		N	0.563
CLDAN	2.13	UGL		N	5.550
DLDRN	0.602	UGL		N	0.563
ENDRN	0.661	UGL		N	0.563
ISODR	0.566	UGL		N	0.563
PPDDE	0.541	UGL		N	0.563
PPDDT	0.583	UGL		N	0.563

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22072

Sample Date: 02/22/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSR010 Lab Number: K-NWB#15

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL		F	
112TCE	LT	1.6	UGL		F	
11DCLE	LT	1.4	UGL		F	
12DCE	LT	3.2	UGL		F	
12DCLE	LT	0.72	UGL		F	
13DMB	LT	2.9	UGL		F	
BCHPD	LT	1.8	UGL		F	
C6H6	LT	2.7	UGL		F	
CCL4	LT	4.9	UGL		F	
CH2CL2	ND	5.0	UGL	R	F	
CHCL3	LT	1.7	UGL		F	
CLC6H5	LT	1.8	UGL		F	
DBCP	LT	5.6	UGL		F	
DCPD	LT	3.7	UGL		F	
DMDS	LT	3.7	UGL		F	
ETC6H5	LT	2.4	UGL		F	
MEC6H5	LT	3.5	UGL		F	
MIBK	LT	1.2	UGL		F	
TCLEE	LT	2.9	UGL		F	
TRCLE	LT	2.0	UGL		F	
XYLEN	LT	2.4	UGL		F	
12DCD4		10.	UGL		N	10.000
CD2CL2		12.	UGL		N	10.000
ETBD10		8.9	UGL		N	10.000

Method: UU8
Analysis Number: GSR008 Lab Number: K-NWB#13

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22072

Sample Date: 02/22/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSR008 Lab Number: K-NWB#13

Test Name	Corrected Value		Units	FC	QC	QC Spike
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		11.	UGL		N	10.000
CD2CL2		9.9	UGL		N	10.000
ETBD10		10.	UGL		N	10.000

Method: QQ8
Analysis Number: QAI015 Lab Number: K-NWB#13

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Method: Q8
Analysis Number: QKP015 Lab Number: K-NWB#13

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22072

Sample Date: 02/22/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLG014 Lab Number: K-NWB#13

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.306	UGL	C		
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22501

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSU003 Lab Number: K-NWB#24

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3		3.1	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		9.7	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		10.	UGL		N	10.000

Method: UU8
Analysis Number: GSU006 Lab Number: K-NWB#33

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL		F	
112TCE	LT	1.6	UGL		F	
11DCLE	LT	1.4	UGL		F	
12DCE	LT	3.2	UGL		F	
12DCLE	LT	0.72	UGL		F	
13DMB	LT	2.9	UGL		F	
BCHPD	LT	1.8	UGL		F	
C6H6	LT	2.7	UGL		F	
CCL4	LT	4.9	UGL		F	
CH2CL2	ND	5.0	UGL	R	F	
CHCL3	LT	1.7	UGL		F	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22501

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSU006 Lab Number: K-NWB#33

Test Name	Corrected Value		Units	FC	QC	QC Spike
CLC6H5	LT	1.8	UGL		F	
DBCP	LT	5.6	UGL		F	
DCPD	LT	3.7	UGL		F	
DMDS	LT	3.7	UGL		F	
ETC6H5	LT	2.4	UGL		F	
MEC6H5	LT	3.5	UGL		F	
MIBK	LT	1.2	UGL		F	
TCLEE	LT	2.9	UGL		F	
TRCLE	LT	2.0	UGL		F	
XYLEN	LT	2.4	UGL		F	
12DCD4		11.	UGL		N	10.000
CD2CL2		12.	UGL		N	10.000
ETBD10		11.	UGL		N	10.000

Method: QQ8
Analysis Number: QAK005 Lab Number: K-NWB#24

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Method: Q8
Analysis Number: QKQ012 Lab Number: K-NWB#24

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22501

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLJ005 Lab Number: K-NWB#24

Test Name		Corrected Value	Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN	LT	0.0539	UGL			
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22505

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSS010 Lab Number: K-NWB#25

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL	D		
112TCE	LT	1.6	UGL	D		
11DCLE	LT	1.4	UGL	D		
12DCE	LT	3.2	UGL	D		
12DCLE	LT	0.72	UGL	D		
13DMB	LT	2.9	UGL	D		
BCHPD	LT	1.8	UGL	D		
C6H6	LT	2.7	UGL	D		
CCL4	LT	4.9	UGL	D		
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL	D		
CLC6H5	LT	1.8	UGL	D		
DBCP	LT	5.6	UGL	D		
DCPD	LT	3.7	UGL	D		
DMDS	LT	3.7	UGL	D		
ETC6H5	LT	2.4	UGL	D		
MEC6H5	LT	3.5	UGL	D		
MIBK	LT	1.2	UGL	D		
TCLEE	LT	2.9	UGL	D		
TRCLE	LT	2.0	UGL	D		
XYLEN	LT	2.4	UGL	D		
12DCD4		12.	UGL	D	N	10.000
CD2CL2		12.	UGL	D	N	10.000
ETBD10		9.6	UGL	D	N	10.000

Method: UU8
Analysis Number: GSS011 Lab Number: K-NWB#26

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22505

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSS011 Lab Number: K-NWB#26

Test Name	Corrected Value		Units	FC	QC	QC Spike
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		12.	UGL		N	10.000
CD2CL2		10.	UGL		N	10.000
ETBD10		9.8	UGL		N	10.000

Method: QQ8
Analysis Number: QAK006 Lab Number: K-NWB#25

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL	D		
DMMP	LT	16.3	UGL	D		

Method: QQ8
Analysis Number: QAK007 Lab Number: K-NWB#26

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22505

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKQ013 Lab Number: K-NWB#25

Test Name	Corrected Value	Units	FC	QC	QC Spike
DBCP	LT 0.130	UGL	D		

Method: Q8
Analysis Number: QKQ014 Lab Number: K-NWB#26

Test Name	Corrected Value	Units	FC	QC	QC Spike
DBCP	LT 0.130	UGL			

Method: MM8A
Analysis Number: QLJ006 Lab Number: K-NWB#25

Test Name	Corrected Value	Units	FC	QC	QC Spike
ALDRN	LT 0.0830	UGL	D		
CL6CP	LT 0.0830	UGL	D		
CLDAN	LT 0.152	UGL	D		
DLDRN	0.334	UGL	D		
ENDRN	LT 0.0600	UGL	D		
ISODR	LT 0.0560	UGL	D		
PPDDE	LT 0.0460	UGL	D		
PPDDT	LT 0.0590	UGL	D		

Method: MM8A
Analysis Number: QLJ007 Lab Number: K-NWB#26

Test Name	Corrected Value	Units	FC	QC	QC Spike
ALDRN	LT 0.0830	UGL			
CL6CP	LT 0.0830	UGL			
CLDAN	LT 0.152	UGL			
DLDRN	0.325	UGL	C		
ENDRN	LT 0.0600	UGL			
ISODR	LT 0.0560	UGL			
PPDDE	LT 0.0460	UGL			
PPDDT	LT 0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22506

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSS012 Lab Number: K-NWB#28

Test Name	Corrected Value		Units	FC	QC	QC Spike
12DCD4		10.	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		8.5	UGL		N	10.000
111TCE	LT	2.4	UGL		R	
112TCE	LT	1.6	UGL		R	
11DCLE	LT	1.4	UGL		R	
12DCE	LT	3.2	UGL		R	
12DCLE	LT	0.72	UGL		R	
13DMB	LT	2.9	UGL		R	
BCHPD	LT	1.8	UGL		R	
C6H6	LT	2.7	UGL		R	
CCL4	LT	4.9	UGL		R	
CH2CL2	ND	5.0	UGL	R	R	
CHCL3	LT	1.7	UGL		R	
CLC6H5	LT	1.8	UGL		R	
DBCP	LT	5.6	UGL		R	
DCPD	LT	3.7	UGL		R	
DMDS	LT	3.7	UGL		R	
ETC6H5	LT	2.4	UGL		R	
MEC6H5	LT	3.5	UGL		R	
MIBK	LT	1.2	UGL		R	
TCLEE	LT	2.9	UGL		R	
TRCLE	LT	2.0	UGL		R	
XYLEN	LT	2.4	UGL		R	

Method: UU8
Analysis Number: GSU004 Lab Number: K-NWB#27

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22506

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSU004 Lab Number: K-NWB#27

Test Name	Corrected Value		Units	FC	QC	QC Spike
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		9.1	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		9.4	UGL		N	10.000

Method: UU8
Analysis Number: GSU007 Lab Number: K-NWB#34

Test Name	Corrected Value		Units	FC	QC	QC Spike
12DCD4		10.	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		9.3	UGL		N	10.000
111TCE	LT	2.4	UGL		T	
112TCE	LT	1.6	UGL		T	
11DCLE	LT	1.4	UGL		T	
12DCE	LT	3.2	UGL		T	
12DCLE	LT	0.72	UGL		T	
13DMB	LT	2.9	UGL		T	
BCHPD	LT	1.8	UGL		T	
C6H6	LT	2.7	UGL		T	
CCL4	LT	4.9	UGL		T	
CH2CL2	ND	5.0	UGL	R	T	
CHCL3	LT	1.7	UGL		T	
CLC6H5	LT	1.8	UGL		T	
DBCP	LT	5.6	UGL		T	
DCPD	LT	3.7	UGL		T	
DMDS	LT	3.7	UGL		T	
ETC6H5	LT	2.4	UGL		T	
MEC6H5	LT	3.5	UGL		T	
MIBK	LT	1.2	UGL		T	
TCLEE	LT	2.9	UGL		T	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22506

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSU007 Lab Number: K-NWB#34

Test Name	Corrected Value		Units	FC	QC	QC Spike
TRCLE	LT	2.0	UGL		T	
XYLEN	LT	2.4	UGL		T	

Method: QQ8
Analysis Number: QAK008 Lab Number: K-NWB#27

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP		43.3	UGL			
DMMP	LT	16.3	UGL			

Method: QQ8
Analysis Number: QAK009 Lab Number: K-NWB#28

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL		R	
DMMP	LT	16.3	UGL		R	

Method: Q8
Analysis Number: QKQ015 Lab Number: K-NWB#27

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: Q8
Analysis Number: QKQ016 Lab Number: K-NWB#28

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL		R	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22506

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLJ008 Lab Number: K-NWB#27

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.130	UGL	C		
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Method: MM8A
Analysis Number: QLJ009 Lab Number: K-NWB#28

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL		R	
CL6CP	LT	0.0830	UGL		R	
CLDAN	LT	0.152	UGL		R	
DLDRN		0.0807	UGL	C	R	
ENDRN	LT	0.0600	UGL		R	
ISODR	LT	0.0560	UGL		R	
PPDDE	LT	0.0460	UGL		R	
PPDDT	LT	0.0590	UGL		R	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22507

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSS013 Lab Number: K-NWB#29

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3		3.0	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		11.	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		8.8	UGL		N	10.000

Method: QQ8
Analysis Number: QAK010 Lab Number: K-NWB#29

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 22507

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKQ017 Lab Number: K-NWB#29

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: MM8A
Analysis Number: QLJ010 Lab Number: K-NWB#29

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN	LT	0.0539	UGL			
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27003

Sample Date: 02/20/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSR003 Lab Number: MK-NWB#1

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		9.6	UGL		N	10.000
CD2CL2		12.	UGL		N	10.000
ETBD10		9.2	UGL		N	10.000

Method: QQ8
Analysis Number: QAI005 Lab Number: MK-NWB#1

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27003

Sample Date: 02/20/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKP005 Lab Number: MK-NWB#1

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: MM8A
Analysis Number: QLG005 Lab Number: MK-NWB#1

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.0827	UGL	C		
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27006

Sample Date: 02/21/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSQ005 Lab Number: MK-NWB#5

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2		14.	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		11.	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		10.	UGL		N	10.000

Method: QQ8
Analysis Number: QAI008 Lab Number: MK-NWB#5

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27006

Sample Date: 02/21/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKP008 Lab Number: MK-NWB#5

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: MM8A
Analysis Number: QLG008 Lab Number: MK-NWB#5

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.0756	UGL	C		
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27009

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: B
Method: UU8
Analysis Number: GSS014 Lab Number: K-NWB#30

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		12.	UGL		N	10.000
CD2CL2		9.7	UGL		N	10.000
ETBD10		9.0	UGL		N	10.000

Method: QQ8
Analysis Number: QAK011 Lab Number: K-NWB#30

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27009

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: B
Method: Q8
Analysis Number: QKQ018 Lab Number: K-NWB#30

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: MM8A
Analysis Number: QLJ011 Lab Number: K-NWB#30

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.0793	UGL	C		
ENDRN		0.118	UGL	C		
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27011

Sample Date: 02/21/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSQ006 Lab Number: MK-NWB#6

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2		14.	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		11.	UGL		N	10.000
CD2CL2		12.	UGL		N	10.000
ETBD10		8.7	UGL		N	10.000

Method: QQ8
Analysis Number: QAI009 Lab Number: MK-NWB#6

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27011

Sample Date: 02/21/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKP009 Lab Number: MK-NWB#6

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: MM8A
Analysis Number: QLG009 Lab Number: MK-NWB#6

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN	LT	0.0539	UGL			
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27072

Sample Date: 02/20/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSQ003 Lab Number: MK-NWB#2

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2		18.	UGL	R		
CHCL3		4.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		11.	UGL		N	10.000
CD2CL2		12.	UGL		N	10.000
ETBD10		10.	UGL		N	10.000

Method: UU8
Analysis Number: GSQ004 Lab Number: MK-NWB#3

Test Name	Corrected Value		Units	FC	QC	QC Spike
12DCD4		11.	UGL		N	10.000
CD2CL2		13.	UGL		N	10.000
ETBD10		9.1	UGL		N	10.000
111TCE	LT	2.4	UGL		T	
112TCE	LT	1.6	UGL		T	
11DCLE	LT	1.4	UGL		T	
12DCE	LT	3.2	UGL		T	
12DCLE	LT	0.72	UGL		T	
13DMB	LT	2.9	UGL		T	
BCHPD	LT	1.8	UGL		T	
C6H6	LT	2.7	UGL		T	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27072

Sample Date: 02/20/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSQ004 Lab Number: MK-NWB#3

Test Name	Corrected Value		Units	FC	QC	QC Spike
CCL4	LT	4.9	UGL		T	
CH2CL2		16.	UGL	R	T	
CHCL3	LT	1.7	UGL		T	
CLC6H5	LT	1.8	UGL		T	
DBCP	LT	5.6	UGL		T	
DCPD	LT	3.7	UGL		T	
DMDS	LT	3.7	UGL		T	
ETC6H5	LT	2.4	UGL		T	
MEC6H5	LT	3.5	UGL		T	
MIBK	LT	1.2	UGL		T	
TCLEE	LT	2.9	UGL		T	
TRCLE	LT	2.0	UGL		T	
XYLEN	LT	2.4	UGL		T	

Method: QQ8
Analysis Number: QAI006 Lab Number: MK-NWB#2

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Method: Q8
Analysis Number: QKP006 Lab Number: MK-NWB#2

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27072

Sample Date: 02/20/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLG006 Lab Number: MK-NWB#2

Test Name		Corrected Value	Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.107	UGL	C		
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27085

Sample Date: 02/21/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSQ007 Lab Number: MK-NWB#7

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2		12.	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		11.	UGL		N	10.000
CD2CL2		10.	UGL		N	10.000
ETBD10		9.6	UGL		N	10.000

Method: QQ8
Analysis Number: QAI010 Lab Number: MK-NWB#7

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27085

Sample Date: 02/21/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKP010 Lab Number: MK-NWB#7

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: MM8A
Analysis Number: QLG010 Lab Number: MK-NWB#7

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.0923	UGL	C		
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT		0.0770	UGL	C		

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27086

Sample Date: 02/21/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSQ008 Lab Number: MK-NWB#8

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		10.	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		9.2	UGL		N	10.000

Method: QQ8
Analysis Number: QAI011 Lab Number: MK-NWB#8

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27086

Sample Date: 02/21/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKP011 Lab Number: MK-NWB#8

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: MM8A
Analysis Number: QLG011 Lab Number: MK-NWB#8

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN	LT	0.0539	UGL			
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27501

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSS015 Lab Number: K-NWB#31

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		9.0	UGL		N	10.000
CD2CL2		12.	UGL		N	10.000
ETBD10		8.5	UGL		N	10.000

Method: QQ8
Analysis Number: QAK012 Lab Number: K-NWB#31

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27501

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKQ019 Lab Number: K-NWB#31

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: MM8A
Analysis Number: QLJ012 Lab Number: K-NWB#31

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN	LT	0.0539	UGL			
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27502

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSS003 Lab Number: K-NWB#16

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		8.3	UGL		N	10.000
CD2CL2		9.3	UGL		N	10.000
ETBD10		7.9	UGL		N	10.000

Method: QQ8
Analysis Number: QAJ005 Lab Number: K-NWB#16

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27502

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: QQ8
Analysis Number: QAJ006 Lab Number: K-NWB#17

Test Name	Corrected Value	Units	FC	QC	QC Spike
DIMP	88.2	UGL		N	84.100
DMMP	99.7	UGL		N	101.000

Method: Q8
Analysis Number: QKQ005 Lab Number: K-NWB#16

Test Name	Corrected Value	Units	FC	QC	QC Spike
DBCP	LT 0.130	UGL			

Method: Q8
Analysis Number: QKQ006 Lab Number: K-NWB#17

Test Name	Corrected Value	Units	FC	QC	QC Spike
DBCP	1.05	UGL		N	1.080

Method: MM8A
Analysis Number: QLI005 Lab Number: K-NWB#16

Test Name	Corrected Value	Units	FC	QC	QC Spike
ALDRN	LT 0.0830	UGL			
CL6CP	LT 0.0830	UGL			
CLDAN	LT 0.152	UGL			
DLDRN	LT 0.0539	UGL			
ENDRN	LT 0.0600	UGL			
ISODR	LT 0.0560	UGL			
PPDDE	LT 0.0460	UGL			
PPDDT	LT 0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27502

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLI006 Lab Number: K-NWB#17

Test Name	Corrected Value	Units	FC	QC	QC Spike
ALDRN	0.578	UGL		N	0.563
CL6CP	0.227	UGL		N	0.563
CLDAN	1.80	UGL		N	1.550
DLDRN	0.635	UGL		N	0.563
ENDRN	0.622	UGL		N	0.563
ISODR	0.490	UGL		N	0.563
PPDDE	0.518	UGL		N	0.563
PPDDT	0.569	UGL		N	0.563

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27503

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSS004 Lab Number: K-NWB#18

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		9.7	UGL		N	10.000
CD2CL2		10.	UGL		N	10.000
ETBD10		8.7	UGL		N	10.000

Method: UU8
Analysis Number: GSS005 Lab Number: K-NWB#19

Test Name	Corrected Value		Units	FC	QC	QC Spike
12DCD4		10.	UGL		N	10.000
CD2CL2		10.	UGL		N	10.000
ETBD10		8.5	UGL		N	10.000
111TCE	LT	2.4	UGL		R	
112TCE	LT	1.6	UGL		R	
11DCLE	LT	1.4	UGL		R	
12DCE	LT	3.2	UGL		R	
12DCLE	LT	0.72	UGL		R	
13DMB	LT	2.9	UGL		R	
BCHPD	LT	1.8	UGL		R	
C6H6	LT	2.7	UGL		R	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27503

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSS005 Lab Number: K-NWB#19

Test Name	Corrected Value		Units	FC	QC	QC Spike
CCL4	LT	4.9	UGL		R	
CH2CL2	ND	5.0	UGL	R	R	
CHCL3		2.2	UGL		R	
CLC6H5	LT	1.8	UGL		R	
DBCP	LT	5.6	UGL		R	
DCPD	LT	3.7	UGL		R	
DMDS	LT	3.7	UGL		R	
ETC6H5	LT	2.4	UGL		R	
MEC6H5	LT	3.5	UGL		R	
MIBK	LT	1.2	UGL		R	
TCLEE	LT	2.9	UGL		R	
TRCLE	LT	2.0	UGL		R	
XYLEN	LT	2.4	UGL		R	

Method: UU8
Analysis Number: GSS008 Lab Number: K-NWB#22

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL	D		
112TCE	LT	1.6	UGL	D		
11DCLE	LT	1.4	UGL	D		
12DCE	LT	3.2	UGL	D		
12DCLE	LT	0.72	UGL	D		
13DMB	LT	2.9	UGL	D		
BCHPD	LT	1.8	UGL	D		
C6H6	LT	2.7	UGL	D		
CCL4	LT	4.9	UGL	D		
CH2CL2	ND	5.0	UGL	R		
CHCL3		1.9	UGL	D		
CLC6H5	LT	1.8	UGL	D		
DBCP	LT	5.6	UGL	D		
DCPD	LT	3.7	UGL	D		
DMDS	LT	3.7	UGL	D		
ETC6H5	LT	2.4	UGL	D		
MEC6H5	LT	3.5	UGL	D		
MIBK	LT	1.2	UGL	D		
TCLEE	LT	2.9	UGL	D		
TRCLE	LT	2.0	UGL	D		
XYLEN	LT	2.4	UGL	D		
12DCD4		9.6	UGL	D	N	10.000

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27503

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSS008 Lab Number: K-NWB#22

Test Name	Corrected Value	Units	FC	QC	QC Spike
CD2CL2	10.	UGL	D	N	10.000
ETBD10	9.3	UGL	D	N	10.000

Method: QQ8
Analysis Number: QAJ011 Lab Number: K-NWB#22

Test Name	Corrected Value	Units	FC	QC	QC Spike
DIMP	LT 10.1	UGL	D		
DMMP	LT 16.3	UGL	D		

Method: QQ8
Analysis Number: QAJ007 Lab Number: K-NWB#18

Test Name	Corrected Value	Units	FC	QC	QC Spike
DIMP	LT 10.1	UGL			
DMMP	LT 16.3	UGL			

Method: QQ8
Analysis Number: QAJ008 Lab Number: K-NWB#19

Test Name	Corrected Value	Units	FC	QC	QC Spike
DIMP	LT 10.1	UGL		R	
DMMP	LT 16.3	UGL		R	

Method: Q8
Analysis Number: QKQ011 Lab Number: K-NWB#22

Test Name	Corrected Value	Units	FC	QC	QC Spike
DBCP	LT 0.130	UGL	D		

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27503

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKQ007 Lab Number: K-NWB#18

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: Q8
Analysis Number: QKQ008 Lab Number: K-NWB#19

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL		R	

Method: MM8A
Analysis Number: QLI011 Lab Number: K-NWB#22

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL	D		
CL6CP	LT	0.0830	UGL	D		
CLDAN	LT	0.152	UGL	D		
DLDRN	LT	0.0539	UGL	D		
ENDRN	LT	0.0600	UGL	D		
ISODR	LT	0.0560	UGL	D		
PPDDE	LT	0.0460	UGL	D		
PPDDT	LT	0.0590	UGL	D		

Method: MM8A
Analysis Number: QLI007 Lab Number: K-NWB#18

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN	LT	0.0539	UGL			
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27503

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLI008 Lab Number: K-NWB#19

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL		R	
CL6CP	LT	0.0830	UGL		R	
CLDAN	LT	0.152	UGL		R	
DLDRN	LT	0.0539	UGL		R	
ENDRN	LT	0.0600	UGL		R	
ISODR	LT	0.0560	UGL		R	
PPDDE	LT	0.0460	UGL		R	
PPDDT	LT	0.0590	UGL		R	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27504

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSS006 Lab Number: K-NWB#20

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		10.	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		9.0	UGL		N	10.000

Method: UU8
Analysis Number: GSS009 Lab Number: K-NWB#23

Test Name	Corrected Value		Units	FC	QC	QC Spike
12DCD4		11.	UGL		N	10.000
CD2CL2		12.	UGL		N	10.000
ETBD10		10.	UGL		N	10.000
111TCE	LT	2.4	UGL		T	
112TCE	LT	1.6	UGL		T	
11DCLE	LT	1.4	UGL		T	
12DCE	LT	3.2	UGL		T	
12DCLE	LT	0.72	UGL		T	
13DMB	LT	2.9	UGL		T	
BCHPD	LT	1.8	UGL		T	
C6H6	LT	2.7	UGL		T	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27504

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSS009 Lab Number: K-NWB#23

Test Name	Corrected Value		Units	FC	QC	QC Spike
CCL4	LT	4.9	UGL		T	
CH2CL2	ND	5.0	UGL	R	T	
CHCL3	LT	1.7	UGL		T	
CLC6H5	LT	1.8	UGL		T	
DBCP	LT	5.6	UGL		T	
DCPD	LT	3.7	UGL		T	
DMDS	LT	3.7	UGL		T	
ETC6H5	LT	2.4	UGL		T	
MEC6H5	LT	3.5	UGL		T	
MIBK	LT	1.2	UGL		T	
TCLEE	LT	2.9	UGL		T	
TRCLE	LT	2.0	UGL		T	
XYLEN	LT	2.4	UGL		T	

Method: QQ8
Analysis Number: QAJ009 Lab Number: K-NWB#20

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Method: Q8
Analysis Number: QKQ009 Lab Number: K-NWB#20

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27504

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLI009 Lab Number: K-NWB#20

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN	LT	0.0539	UGL			
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27505

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSS007 Lab Number: K-NWB#21

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		10.	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		8.7	UGL		N	10.000

Method: QQ8
Analysis Number: QAJ010 Lab Number: K-NWB#21

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27505

Sample Date: 02/23/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKQ010 Lab Number: K-NWB#21

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: MM8A
Analysis Number: QLI010 Lab Number: K-NWB#21

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.106	UGL	C		
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27506

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSU005 Lab Number: K-NWB#32

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		9.9	UGL		N	10.000
CD2CL2		12.	UGL		N	10.000
ETBD10		9.2	UGL		N	10.000

Method: UU8
Analysis Number: GSU008 Lab Number: K-NWB#35

Test Name	Corrected Value		Units	FC	QC	QC Spike
12DCD4		9.5	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		8.9	UGL		N	10.000
111TCE	LT	2.4	UGL		T	
112TCE	LT	1.6	UGL		T	
11DCLE	LT	1.4	UGL		T	
12DCE	LT	3.2	UGL		T	
12DCLE	LT	0.72	UGL		T	
13DMB	LT	2.9	UGL		T	
BCHPD	LT	1.8	UGL		T	
C6H6	LT	2.7	UGL		T	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27506

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSU008 Lab Number: K-NWB#35

Test Name	Corrected Value		Units	FC	QC	QC Spike
CCL4	LT	4.9	UGL		T	
CH2CL2	ND	5.0	UGL	R	T	
CHCL3	LT	1.7	UGL		T	
CLC6H5	LT	1.8	UGL		T	
DBCP	LT	5.6	UGL		T	
DCPD	LT	3.7	UGL		T	
DMDS	LT	3.7	UGL		T	
ETC6H5	LT	2.4	UGL		T	
MEC6H5	LT	3.5	UGL		T	
MIBK	LT	1.2	UGL		T	
TCLEE	LT	2.9	UGL		T	
TRCLE	LT	2.0	UGL		T	
XYLEN	LT	2.4	UGL		T	

Method: QQ8
Analysis Number: QAK013 Lab Number: K-NWB#32

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Method: Q8
Analysis Number: QKQ020 Lab Number: K-NWB#32

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 27506

Sample Date: 02/26/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLJ013 Lab Number: K-NWB#32

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.0959	UGL	C		
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 37330

Sample Date: 02/28/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSV003 Lab Number: K-NWB#40

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3		11.	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		9.0	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		8.7	UGL		N	10.000

Method: UU8
Analysis Number: GSV006 Lab Number: K-NWB#43

Test Name	Corrected Value		Units	FC	QC	QC Spike
12DCD4		11.	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		10.	UGL		N	10.000
111TCE	LT	2.4	UGL		T	
112TCE	LT	1.6	UGL		T	
11DCLE	LT	1.4	UGL		T	
12DCE	LT	3.2	UGL		T	
12DCLE	LT	0.72	UGL		T	
13DMB	LT	2.9	UGL		T	
BCHPD	LT	1.8	UGL		T	
C6H6	LT	2.7	UGL		T	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 37330

Sample Date: 02/28/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSV006 Lab Number: K-NWB#43

Test Name	Corrected Value		Units	FC	QC	QC Spike
CCL4	LT	4.9	UGL		T	
CH2CL2	ND	5.0	UGL	R	T	
CHCL3	LT	1.7	UGL		T	
CLC6H5	LT	1.8	UGL		T	
DBCP	LT	5.6	UGL		T	
DCPD	LT	3.7	UGL		T	
DMDS	LT	3.7	UGL		T	
ETC6H5	LT	2.4	UGL		T	
MEC6H5	LT	3.5	UGL		T	
MIBK	LT	1.2	UGL		T	
TCLEE	LT	2.9	UGL		T	
TRCLE	LT	2.0	UGL		T	
XYLEN	LT	2.4	UGL		T	

Method: QQ8
Analysis Number: QAL007 Lab Number: K-NWB#40

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Method: Q8
Analysis Number: QKR007 Lab Number: K-NWB#40

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 37330

Sample Date: 02/28/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLK007 Lab Number: K-NWB#40

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN	LT	0.0539	UGL			
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 37331

Sample Date: 02/28/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSV004 Lab Number: K-NWB#41

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3		12.	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		12.	UGL		N	10.000
CD2CL2		12.	UGL		N	10.000
ETBD10		10.	UGL		N	10.000

Method: QQ8
Analysis Number: QAL008 Lab Number: K-NWB#41

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 37331

Sample Date: 02/28/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKR008 Lab Number: K-NWB#41

Test Name	Corrected Value	Units	FC	QC	QC Spike
DBCP	LT 0.130	UGL			

Method: MM8A
Analysis Number: QLK008 Lab Number: K-NWB#41

Test Name	Corrected Value	Units	FC	QC	QC Spike
ALDRN	LT 0.0830	UGL			
CL6CP	LT 0.0830	UGL			
CLDAN	LT 0.152	UGL			
DLDRN	LT 0.0539	UGL			
ENDRN	LT 0.0600	UGL			
ISODR	LT 0.0560	UGL			
PPDDE	LT 0.0460	UGL			
PPDDT	LT 0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 37332

Sample Date: 02/27/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSU010 Lab Number: K-NWB#37

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3		13.	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		11.	UGL		N	10.000
CD2CL2		11.	UGL		N	10.000
ETBD10		8.9	UGL		N	10.000

Method: UU8
Analysis Number: GSU012 Lab Number: K-NWB#39

Test Name	Corrected Value		Units	FC	QC	QC Spike
12DCD4		9.6	UGL		N	10.000
CD2CL2		10.	UGL		N	10.000
ETBD10		9.5	UGL		N	10.000
111TCE	LT	2.4	UGL		T	
112TCE	LT	1.6	UGL		T	
11DCLE	LT	1.4	UGL		T	
12DCE	LT	3.2	UGL		T	
12DCLE	LT	0.72	UGL		T	
13DMB	LT	2.9	UGL		T	
BCHPD	LT	1.8	UGL		T	
C6H6	LT	2.7	UGL		T	

Final Data Report for MKE Sampling Programs

Site Identification: WELL 37332

Sample Date: 02/27/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSU012 Lab Number: K-NWB#39

Test Name	Corrected Value		Units	FC	QC	QC Spike
CCL4	LT	4.9	UGL		T	
CH2CL2	ND	5.0	UGL	R	T	
CHCL3	LT	1.7	UGL		T	
CLC6H5	LT	1.8	UGL		T	
DBCP	LT	5.6	UGL		T	
DCPD	LT	3.7	UGL		T	
DMDS	LT	3.7	UGL		T	
ETC6H5	LT	2.4	UGL		T	
MEC6H5	LT	3.5	UGL		T	
MIBK	LT	1.2	UGL		T	
TCLEE	LT	2.9	UGL		T	
TRCLE	LT	2.0	UGL		T	
XYLEN	LT	2.4	UGL		T	

Method: QQ8
Analysis Number: QAL005 Lab Number: K-NWB#37

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Method: Q8
Analysis Number: QKR005 Lab Number: K-NWB#37

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 37332

Sample Date: 02/27/90
Depth(ft): 0.0 Sampling Technique: P
Method: MM8A
Analysis Number: QLK005 Lab Number: K-NWB#37

Test Name		Corrected Value	Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN	LT	0.0539	UGL			
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identificatio : WELL 37333

Sample Date: 02/28/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSV005 Lab Number: K-NWB#42

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3		13.	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		11.	UGL		N	10.000
CD2CL2		10.	UGL		N	10.000
ETBD10		9.4	UGL		N	10.000

Method: QQ8
Analysis Number: QAL009 Lab Number: K-NWB#42

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 37333

Sample Date: 02/28/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKR009 Lab Number: K-NWB#42

Test Name		Corrected Value	Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: MM8A
Analysis Number: QLK009 Lab Number: K-NWB#42

Test Name		Corrected Value	Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN	LT	0.0539	UGL			
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 37334

Sample Date: 02/27/90
Depth(ft): 0.0 Sampling Technique: P
Method: UU8
Analysis Number: GSU011 Lab Number: K-NWB#38

Test Name	Corrected Value		Units	FC	QC	QC Spike
111TCE	LT	2.4	UGL			
112TCE	LT	1.6	UGL			
11DCLE	LT	1.4	UGL			
12DCE	LT	3.2	UGL			
12DCLE	LT	0.72	UGL			
13DMB	LT	2.9	UGL			
BCHPD	LT	1.8	UGL			
C6H6	LT	2.7	UGL			
CCL4	LT	4.9	UGL			
CH2CL2	ND	5.0	UGL	R		
CHCL3	LT	1.7	UGL			
CLC6H5	LT	1.8	UGL			
DBCP	LT	5.6	UGL			
DCPD	LT	3.7	UGL			
DMDS	LT	3.7	UGL			
ETC6H5	LT	2.4	UGL			
MEC6H5	LT	3.5	UGL			
MIBK	LT	1.2	UGL			
TCLEE	LT	2.9	UGL			
TRCLE	LT	2.0	UGL			
XYLEN	LT	2.4	UGL			
12DCD4		9.6	UGL		N	10.000
CD2CL2		10.	UGL		N	10.000
ETBD10		8.9	UGL		N	10.000

Method: QQ8
Analysis Number: QAL006 Lab Number: K-NWB#38

Test Name	Corrected Value		Units	FC	QC	QC Spike
DIMP	LT	10.1	UGL			
DMMP	LT	16.3	UGL			

Final Data Report for MKE Sampling Programs

Site Identification: WELL 37334

Sample Date: 02/27/90
Depth(ft): 0.0 Sampling Technique: P
Method: Q8
Analysis Number: QKR006 Lab Number: K-NWB#38

Test Name	Corrected Value		Units	FC	QC	QC Spike
DBCP	LT	0.130	UGL			

Method: MM8A
Analysis Number: QLK006 Lab Number: K-NWB#38

Test Name	Corrected Value		Units	FC	QC	QC Spike
ALDRN	LT	0.0830	UGL			
CL6CP	LT	0.0830	UGL			
CLDAN	LT	0.152	UGL			
DLDRN		0.0903	UGL	C		
ENDRN	LT	0.0600	UGL			
ISODR	LT	0.0560	UGL			
PPDDE	LT	0.0460	UGL			
PPDDT	LT	0.0590	UGL			