3R - 261

REPORTS

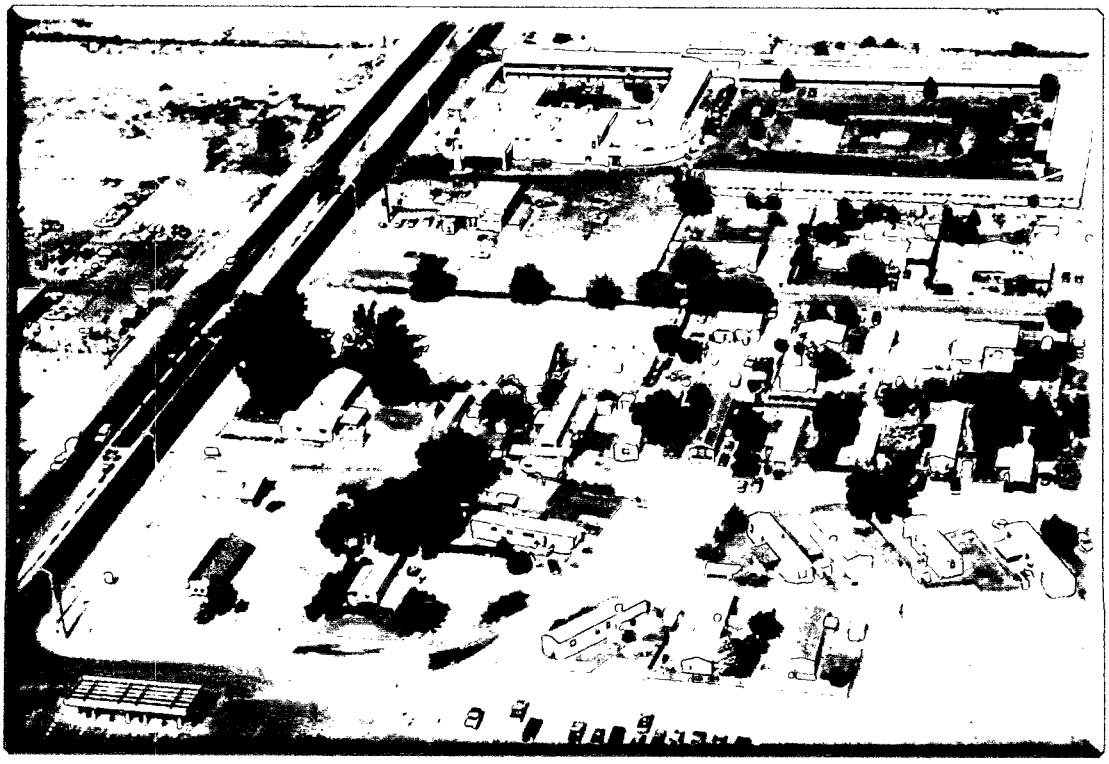
DATE:

June 7, 2000

ANNUAL GROUNDWATER REPORT

Wellex Facility
2600 Bloofield Highway
Farmington, NM

June 7, 2000



ENTACT
4040 W. Royal Ln. Suite 136 Irving, TX. 75063

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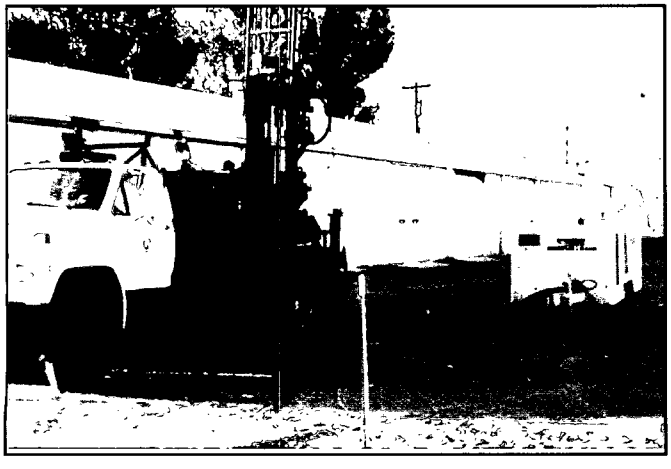
1.0 INTRODUCTION

ENTACT, Inc. was retained by Halliburton Energy Services, Inc. to conduct a quarterly groundwater sampling investigation for a period of one year to address potential environmental issues at the former Wellex facility (the Site) located at 2600 Bloomfield Highway in Farmington, New Mexico. Specifications concerning these activities were described by ENTACT, Inc. in the *Work Plan for Source Removal and Groundwater Monitoring Well Installation* (the Work Plan) dated January 27, 1998. Soil remediation and groundwater assessment activities were conducted by ENTACT in 1998. The objective of the soil remediation activities were to excavate and dispose of soil contaminated by historic releases from an oil/water separator. To assess vertical extent and potential impacts to the upper groundwater aquifer, four monitor wells were installed approximately 45 feet below ground surface (bgs). These monitor wells were monitored for the period of one year to evaluate the subsurface condition and determine if the closure criteria had been obtained.

The New Mexico Energy, Minerals, and Natural Resources Department of the Oil Conservation Division (OCD) requested, in a letter dated January 22, 1999, that quarterly sampling be initiated at the Site until groundwater was below New Mexico Water Quality Control Commission (WQCC) standards for four consecutive quarters. The OCD Project Manager further requested that groundwater collected from the monitor wells be analyzed for concentrations of WQCC metals, including major cations and anions, total dissolved solids (TDS), total petroleum hydrocarbon (TPH), and benzene, toluene, ethylbenzene, xylenes (BTEX). The OCD request stated that after the initial sampling, if the WQCC metals and TDS sample results were below regulatory standards, then groundwater collected during subsequent sampling events could be analyzed for concentrations of BTEX and TPH, only. The OCD correspondence is presented in Appendix A.



The start of the quarterly sampling events was conducted on March 15, 1999 and finished on February 1, 2000. This report describes the following:

- A description of all quarterly monitoring activities which have occurred including conclusions and recommendations;
- A quarterly water table potentiometric map showing the location of the former disposal area, monitor wells and any other pertinent site features as well as the direction and magnitude of the hydraulic gradient;
- Summary tables of all past and present groundwater quality sampling results and copies of all laboratory analytical data sheets and associated quality assurance/ quality control (QA/QC) data taken within the past year;
- Quarterly isopleth maps for contaminants of concern; and
- The disposition of all wastes generated.

GROUNDWATER INVESTIGATION ACTIVITIES AND RESULTS 2.0

This annual groundwater sampling report summarizes activities, results and conclusions of activities conducted, at the former Wellex facility. ENTACT, installed four monitor wells, MW-01 through MW-04, to further vertically delineate potential impacts to the upper groundwater aquifer. The following sections describe the location, installation, and sampling the monitor wells and provides analytical results for groundwater samples collected from the wells. The general site layout and locations of all monitor wells are shown on Figure 2-1.

Monitor Well Installation Activities

Monitor wells MW-01, MW-02, and MW-04 were installed at the facility from June 9 through 12, 1998, prior to soil removal activities. These monitor wells were installed north (MW-01), west (MW-02), and south (MW-04) of the former oil/water separator area. Monitor well MW-03 was installed on July 14, 1998, downgradient of the eastern part of the excavation, after the soil removal activities were completed to ensure that the well construction was not undermined by the excavation activities.

All monitor wells were constructed with 15 to 20 feet of 2 inch diameter, 0.010-inch slot, PVC monitor well screen and completed to surface with 2-inch diameter Schedule 40 PVC casing. Screw fit bottom caps were placed at the base of each monitor well and an expandable locking cap was installed on top of the PVC riser. A filter pack consisting of 20/40 quartz sand was placed in the borehole between the annular seal and the monitor well screen approximately 2 feet above the monitor well screen and PVC casing interface. In monitor wells MW-01 through MW-03, a 13 foot bentonite seal, consisting of 1/4 inch bentonite pellets, was placed above the sand filter pack. Bentonite/cement grout was then placed above the bentonite seal to approximately 0.5 to 3 feet below ground surface (bgs). Monitor well MW-04 was completed with a 2 foot bentonite seal placed above the filter sand pack. A 20 foot bentonite/ cement grout was placed above the bentonite seal to approximately 6 feet bgs. Concrete was placed above the bentonite/ cement grout to ground surface in each well. All monitor wells were completed at ground surface and covered with a 8-inch diameter road box set within a 2 foot diameter concrete pad. The concrete pad was raised above ground surface to prevent water runoff into the well. The top of PVC casing elevation (TOC) were surveyed to a common site benchmark. Soil boring lithologic logs and well completion diagrams are presented in Appendix B.

After installation, all monitor wells were developed using a 'Whaler" direct current submersible pump. During development, a minimum of three well casing volumes of groundwater were purged to remove fine sediment that had become entrained in the sand pack filter during well installation. Dedicated hoses were used at each well to minimize the potential for cross contamination.

Groundwater Sampling Activities

ENTACT has performed four consecutive quarterly groundwater sampling events at the Site since March of 1999. For each sampling event groundwater samples were collected using 2-inch disposable bailers. Prior to sampling, each monitor well was purged and monitored for a suite of field parameters that included pH, conductivity, and temperature. A summary of the field parameter measurements for the four groundwater sampling events are presented on Table 2-1. Field notes are provided in Appendix C.

Laboratory Analytical Parameters

Groundwater samples collected in March 1999 were analyzed for concentrations of BTEX by USEPA Method 8021 protocol, WQCC Metals (TCLP Metals) by USEPA Method 1311, and major cations and anions, including total dissolved solids (TDS) by USEPA Method 600. The samples analyzed for concentrations of BTEX were placed in laboratory supplied 40 milliliter (ml) VOA vials with teflon screw top lids and preserved with 5% Mercuric Chloride. The VOA vials were capped headspace free, labeled and stored in an ice chest cooled to 4 degrees Fahrenheit. The samples analyzed for concentrations of WQCC Metals were collected in 250 ml polypropylene bottles, labeled, and also stored in an ice chest for shipment to the laboratory. Groundwater samples collected for the analyses of major cations and anions were stored in a single 500 ml polypropylene bottle. Groundwater samples collected in June, November 1999, and February 2000 were analyzed for BTEX by USEPA Method 8021 protocol and USEPA Method 8015B for TPH.

Water Level Elevations and Groundwater Flow Directions

Depth to water and water levels were measured in each well prior to purging, developing, and sampling. Due to the potential of artificially depressed water levels from pressure buildup inside each tightly capped well, each well was opened and allowed to pressure equilibrate before the water level measurements were collected. The depth to water and water elevations are presented on Table 2-2 for each well and sampling event. Hydrographs for each well are presented in Appendix D. Groundwater flow maps for March, June, November 1999 and February 2000 are presented as Figures 2-2, 2-3, 2-4, and 2-5, respectively.

TABLE 2-1
SUMMARY OF FIELD PARAMETERS

WELL	SAMPLE DATE	pH	CONDUCTIVITY	TEMPERATURE
MW-01	MARCH 99	7.31	1200	64.7
	JUNE 99	8.17	600	24
	NOVEMBER 99	6.79	601	16
	FEBRUARY 00	7.7	0.47	55.2
MW-02	MARCH 99	7.24	1200	62.8
	JUNE 99	6.53	600	24
	NOVEMBER 99	6.85	688	16
	FEBRUARY 00	7.6	0.41	59.9
MW-03	MARCH 99	7.20	1200	63.8
	JUNE 99	7.45	600	32
	NOVEMBER 99	6.93	640	16
	FEBRUARY 00	7.7	0.44	57.4
MW-04	MARCH 99	6.98	1200	62.1
	JUNE 99	8.22	500	21
	NOVEMBER 99	6.88	744	16
	FEBRUARY 00	7.6	0.56	63.6

TABLE 2-2
SUMMARY OF DEPTH TO WATER AND WATER ELEVATIONS

Well	Top of Casing Elevation, MSL	MARCH 99		JUNE 99		NOVEMBER 99		FEBRUARY 00	
		Depth to water	Water Elevation	Depth to water	Water Elevation	Depth to water	Water Elevation	Depth to water	Water Elevation
MW-01	99.81	38.61	61.2	32.3	67.51	31.8	68.01	36.24	63.57
MW-02	100.1	38.82	61.28	32.55	67.55	32.15	67.95	36.53	63.57
MW-03	99.69	38.61	61.08	32.35	67.34	32.18	67.51	36.21	63.48
MW-04	99.41	38.28	61.13	32.0	67.41	32.45	66.96	35.92	63.49

The groundwater flow direction across the Site has consistently been to the southeast and south-southeast. The hydraulic gradients in March 1999, June 1999, November 1999, and February 2000 were 0.0041 feet/feet (MW-02 and MW-03), 0.0205 feet/feet (MW-02 and MW-03), 0.0143 feet/feet (MW-01 and MW-03), and 0.00257 feet/feet (MW-01 and MW-03), respectively. The fluctuations in the hydraulic gradient are due to the decrease/ increase in water elevation over time.

Groundwater Sampling Results

TPH

The analytical results for TPH are presented on Table 2-3 for the four groundwater sampling events. Copies of the laboratory analytical reports for March 1999 are presented in Appendix E, June 1999 in Appendix F, November 1999 in Appendix G, and January 2000 in Appendix H. A copy of the cummulative concentration graphs are presented in Appendix I

For the March 1999 sampling event, analytical results indicated all TPH concentrations below the laboratory detection limit. The analytical results for groundwater samples collected in June 1999 indicated TPH concentrations ranged from 1.0 mg/l in MW-03 to 0.4 mg/l in MW-04. During the November 1999 sampling event, TPH concentrations decreased and ranged from 0.2 mg/l in MW-01 to 0.3 mg/l in MW-02, MW-03, and MW-04. In February 2000, TPH concentrations, in all monitor wells, were below the laboratory detection limit.

BTEX

The analytical results for BTEX are presented on Table 2-4. In each sampling event, concentrations of BTEX were below regulatory limits. In March 1999, total BTEX concentrations ranged from 0.0041 mg/l in MW-04 to 0.014 mg/l in MW-01. Analytical results indicated BTEX concentrations ranged from 0.006 mg/l in monitor well MW-02 to 0.102 mg/l in monitor well MW-01. In November 1999, total BTEX concentrations ranged from 0.0022 mg/l in MW-03 to 0.0050 mg/l in MW-02. For February 2000 analytical results indicated BTEX concentrations ranged from 0.0135 mg/l in MW-04 to 0.0241 mg/l in MW-01.

WQCC Metals, TDS, Anion and Cation

The analytical results for WQCC metals are presented on Table 2-5 for the March 1999 sampling event. Table 2-6 presents the analytical results for TDS, anion and cations for the March 1999 sampling event. The March 1999 results, for WQCC metals, TDS, anion and cations were either below the laboratory detection limit and/or the regulatory limit, therefore, WQCC metals, TDS, anion and cations were not considered contaminants of concern (COC) and were not analyzed in the subsequent groundwater sampling events.

TABLE 2-3
CUMMULATIVE ANALYTICAL DATA FOR TPH mg/l

WELL	SAMPLE DATE	TPH Concentrations		
		C5 – C10	C10 – C28	Total
MW-01	MARCH 99	<0.2	<0.1	<0.2
	JUNE 99	<0.2 (<0.2)	0.9 (0.9)	0.9 (0.9)
	NOVEMBER 99	<0.2 (<0.2)	0.2 (0.2)	0.2 (0.2)
	FEBRUARY 00	<0.2	<0.1	<0.2
MW-02	MARCH 99	<0.2	<0.1	<0.2
	JUNE 99	<0.2	0.9	0.9
	NOVEMBER 99	<0.2	0.3	0.3
	FEBRUARY 00	<0.2	<0.1	<0.2
MW-03	MARCH 99	<0.2	<0.1	<0.2
	JUNE 99	<0.2	1.0	1.0
	NOVEMBER 99	<0.2	0.3	0.3
	FEBRUARY 00	<0.2 (<0.2)	<0.1 (<0.1)	<0.2 (<0.2)
MW-04	MARCH 99	<0.2	<0.1	<0.2
	JUNE 99	<0.2	0.4	0.4
	NOVEMBER 99	<0.2	0.3	0.3
	FEBRUARY 00	<0.2	<0.1	<0.2

TABLE 2-6
SUMMARY GROUNDWATER SAMPLE RESULTS FOR ANIONS, CATIONS, AND TOTAL DISSOLVED SOLIDS

PARAMETER	UNIT	MW-01	MW-02	MW-03	MW-04	REGULATORY LIMIT
		MARCH 99	MARCH 99	MARCH 99	MARCH 99	
pH	s.u.	7.03	7.17	7.23	7.25	6.0-9.0
CONDUCTIVITY @ 25 DEGREES	umhos/cm	1,430	1,255	1,265	1,205	NA*
TOTAL DISSOLVED SOLIDS @ 180C	mg/L	715	625	632	600	1,000
TOTAL DISSOLVED SOLIDS (CALC)	mg/L	711	615	627	596	NA*
SAR	ratio	1.1	1.0	0.8	0.9	NA*
TOTAL ALKALINITY AS CaCO3	mg/L	134	270	276	256	NA*
TOTAL HARDNESS AS CaCO3	mg/L	456	396	416	392	NA*
BICARBONATE AS HCO3	mg/L	134	270	276	256	NA*
CARBONATE AS CO3	mg/L	<1	<1	<1	<1	NA*
HYDROXIDE AS OH	mg/L	<1	<1	<1	<1	NA*
NITRATE NITROGEN	mg/L	2.0	2.0	2.4	2.3	10
NITRITE NITROGEN	mg/L	0.005	0.005	0.014	0.007	NA*
CHLORIDE	mg/L	182	34.0	32.0	36.0	250
FLUORIDE	mg/L	0.87	0.93	0.96	0.91	1.6
PHOSPHATE	mg/L	0.4	<0.1	0.8	0.2	NA*
SULFATE	mg/L	202	210	216	207	600
IRON	mg/L	0.101	0.001	0.025	0.021	1
CALCIUM	mg/L	182	158	166	144	NA*
MAGNESIUM	mg/L	<0.1	<0.1	<0.1	7.81	NA*
POTASSIUM	mg/L	4.5	2.5	2.1	2.6	NA*
SODIUM	mg/L	56.0	44.0	39.0	39.5	NA*
CATIONS	meq/L	11.63	9.86	10.03	9.61	NA*
ANIONS	meq/L	11.63	9.84	10.04	9.61	NA*
CATION/ANION DIFFERENCE	%	0.05	0.25	0.05	0.00	NA*

NA- Not Analyzed NA*- Not Applicable for constituents Reference: USEPA, 600/4-79-020, "Method for Chemical Analysis of Water and Wastes", 1983. Water and Waste Water", 18th ed., 1992

TABLE 2-5
CUMMULATIVE GROUNDWATER SAMPLE RSULTS FOR METALS, mg/l

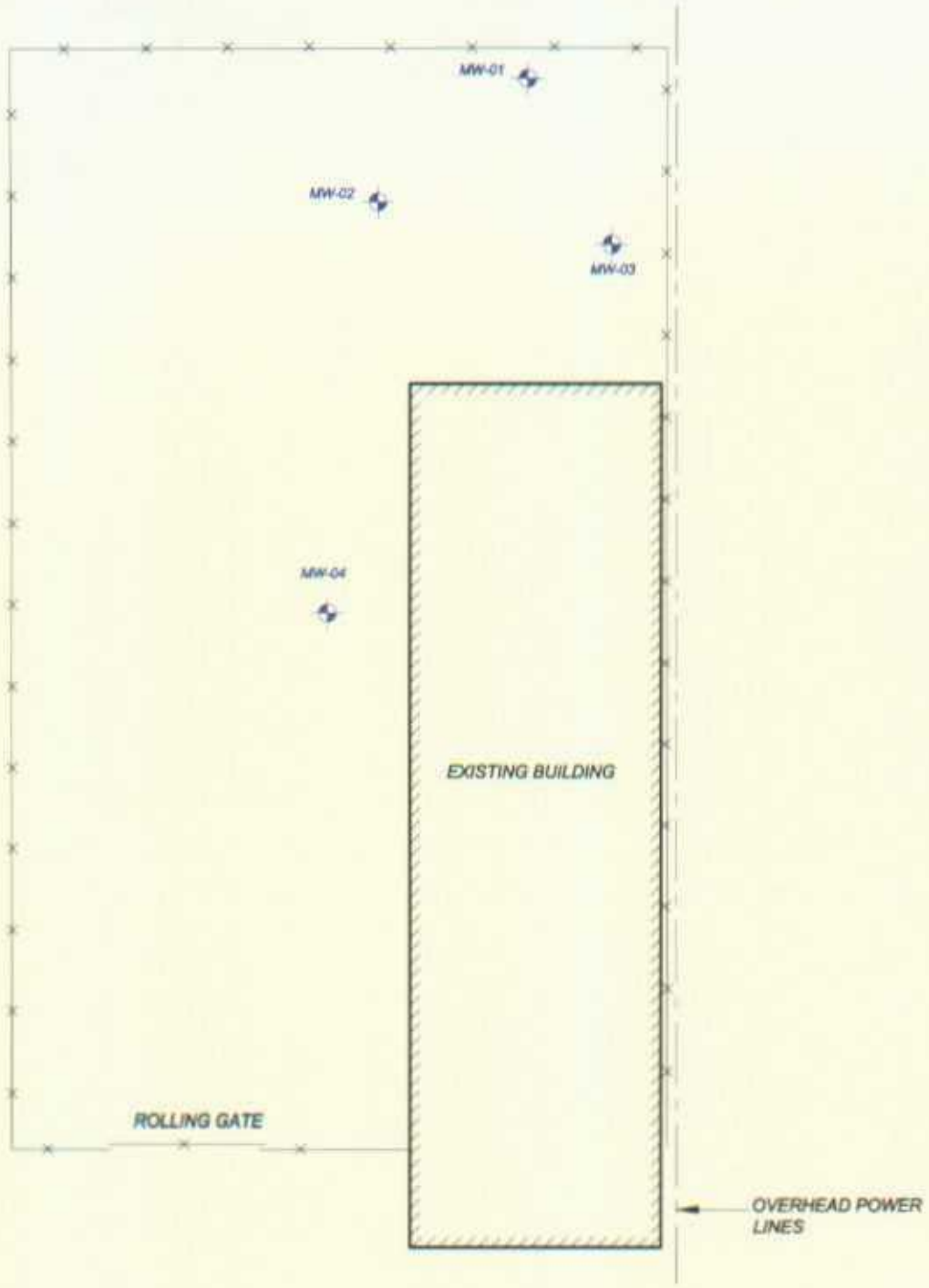
WELL	SAMPLE DATE	ARSENIC	BARIUM	CADMIUM	CHROMIUM	LEAD	MERCURY	SELENIUM	SILVER
MW-01	MARCH 99	0.0104	0.0027	0.0012	0.0008	<0.0001	<0.0001	0.0021	<0.0001
MW-02	MARCH 99	0.0065	0.0058	0.0040	0.0023	<0.0001	<0.0001	0.0032	<0.0001
MW-03	MARCH 99	0.0120	0.0037	0.0005	0.0018	<0.0001	<0.0001	0.0031	<0.0001
MW-04	MARCH 99	0.0037	0.0059	0.0010	0.0016	<0.0001	<0.0001	0.0005	<0.0001
REGULATORY LIMIT		**0.1**	**1**	**0.01**	**0.05**	**0.05**	**0.002**	**0.05**	**0.05**

NA- not analyzed EPA Method 1311 TCLP

TABLE 2-6
SUMMARY GROUNDWATER SAMPLE RESULTS FOR ANIONS, CATIONS, AND TOTAL DISSOLVED SOLIDS

PARAMETER	UNIT	MW-01	MW-02	MW-03	MW-04	REGULATORY LIMIT
		MARCH 99	MARCH 99	MARCH 99	MARCH 99	
pH	su.	7.03	7.17	7.23	7.25	6.0-9.0
CONDUCTIVITY @ 25 DEGREES	umhos/cm	1,430	1,255	1,265	1,205	NA*
TOTAL DISSOLVED SOLIDS @ 180C	mg/L	715	625	632	600	1,000
TOTAL DISSOLVED SOLIDS (CALC)	mg/L	711	615	627	596	NA*
SAR	ratio	1.1	1.0	0.8	0.9	NA*
TOTAL ALKALINITY AS CaCO3	mg/L	134	270	276	256	NA*
TOTAL HARDNESS AS CaCO3	mg/L	466	396	416	392	NA*
BICARBONATE AS HCO3	mg/L	134	270	276	256	NA*
CARBONATE AS CO3	mg/L	<1	<1	<1	<1	NA*
HYDROXIDE AS OH	mg/L	<1	<1	<1	<1	NA*
NITRATE NITROGEN	mg/L	2.0	2.0	2.4	2.3	10
NITRITE NITROGEN	mg/L	0.005	0.005	0.014	0.007	NA*
CHLORIDE	mg/L	182	34.0	32.0	36.0	250
FLUORIDE	mg/L	0.87	0.93	0.96	0.91	1.6
PHOSPHATE	mg/L	0.4	<0.1	0.8	0.2	NA*
SULFATE	mg/L	202	210	216	207	600
IRON	mg/L	0.101	0.001	0.025	0.021	1
CALCIUM	mg/L	182	158	166	144	NA*
MAGNESIUM	mg/L	<0.1	<0.1	<0.1	7.81	NA*
POTASSIUM	mg/L	4.5	2.5	2.1	2.6	NA*
SODIUM	mg/L	56.0	44.0	39.0	39.5	NA*
CATIONS	meq/L	11.63	9.86	10.03	9.61	NA*
ANIONS	meq/L	11.63	9.84	10.04	9.61	NA*
CATION/ANION DIFFERENCE	%	0.05	0.25	0.05	0.00	NA*

NA- Not Analyzed NA*- Not Applicable for constituents Reference: USEPA, 600/4-79-020, "Method for Chemical Analysis of Water and Wastes", 1983. Water and Waste Water", 18th ed., 1992



LEGEND

MONITORING WELL

FENCE

N

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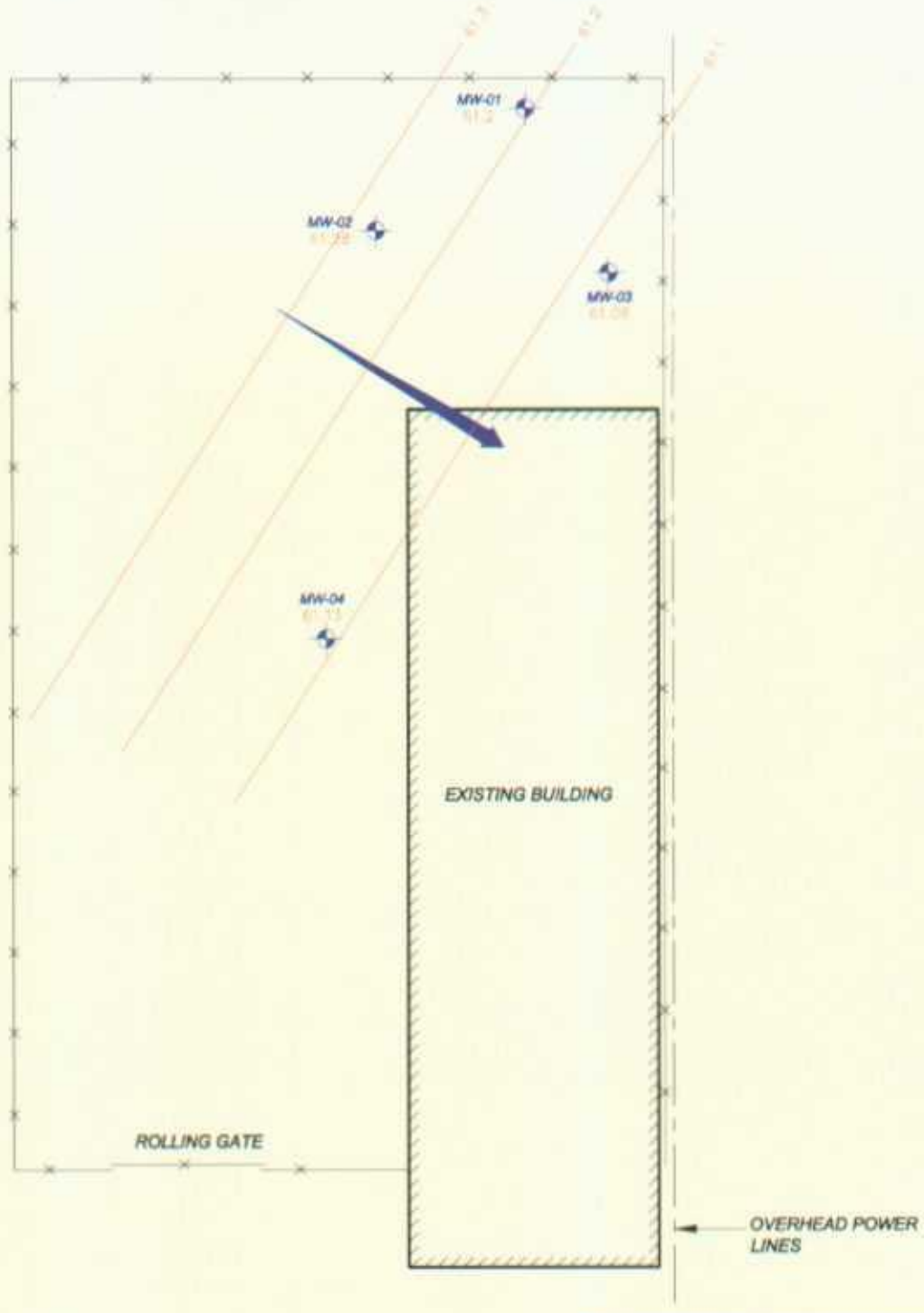
FIGURE: GENERAL SITE LAYOUT	DATE: JUNE 2000
SCALE: APPROX. 1" = 35'	FIGURE: FIGURE 2-1



LEGEND

- MONITORING WELL
- FENCE
- GRADIENT LINE
- GROUNDWATER FLOW DIRECTION

HYDRAULIC GRADIENT 0.0041 ft/ft (MW-02 & MW-03)

N

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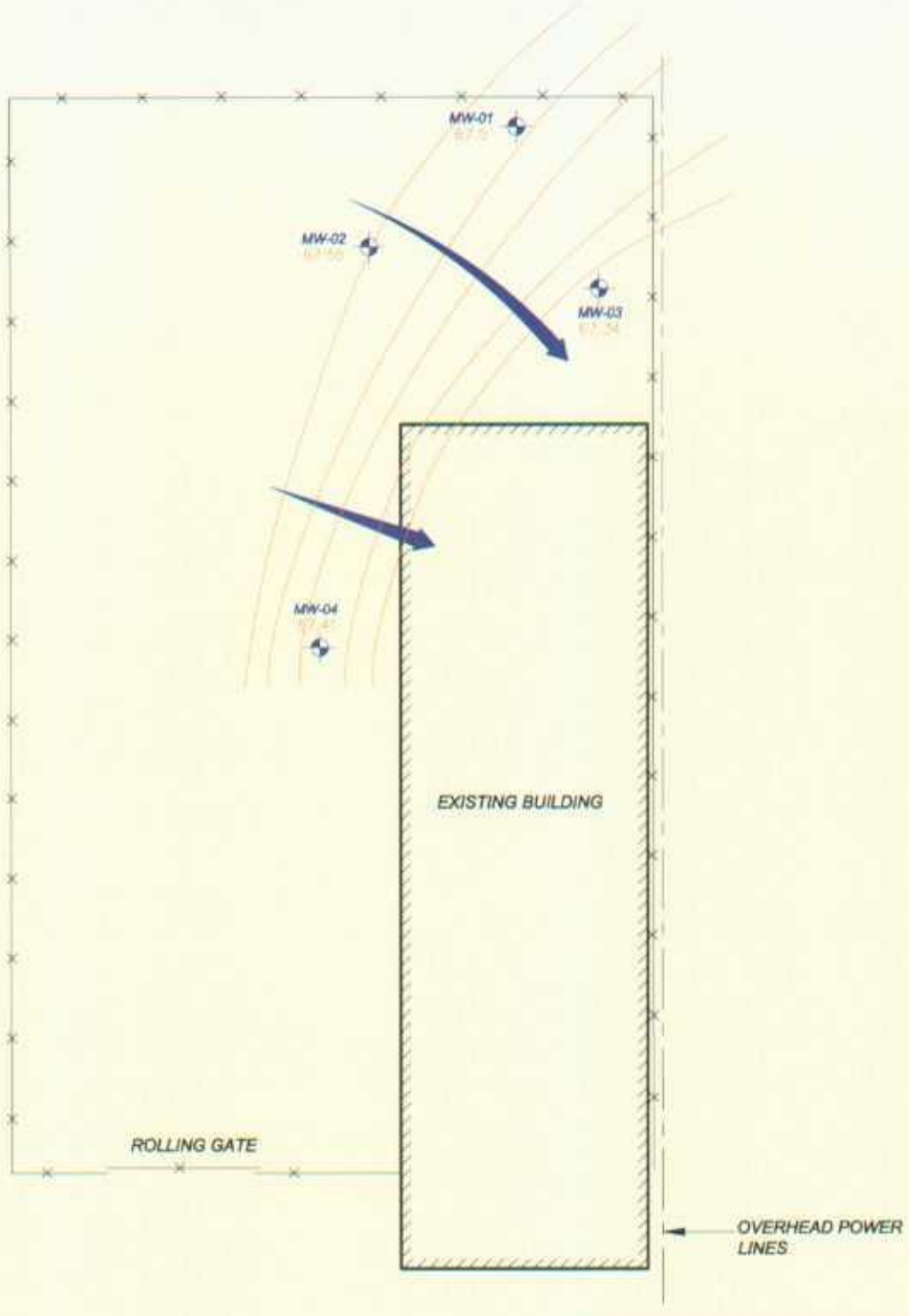
FIGURE: GROUNDWATER FLOW DIRECTION	DATE: MARCH 99
SCALE: APPROX. 1" = 35'	FIGURE: FIGURE 2-2



LEGEND

- MONITORING WELL
- FENCE
- GRADIENT LINE
- GROUNDWATER FLOW DIRECTION

HYDRAULIC GRADIENT 0.0205 ft/ft (MW-02 & MW-03)

N

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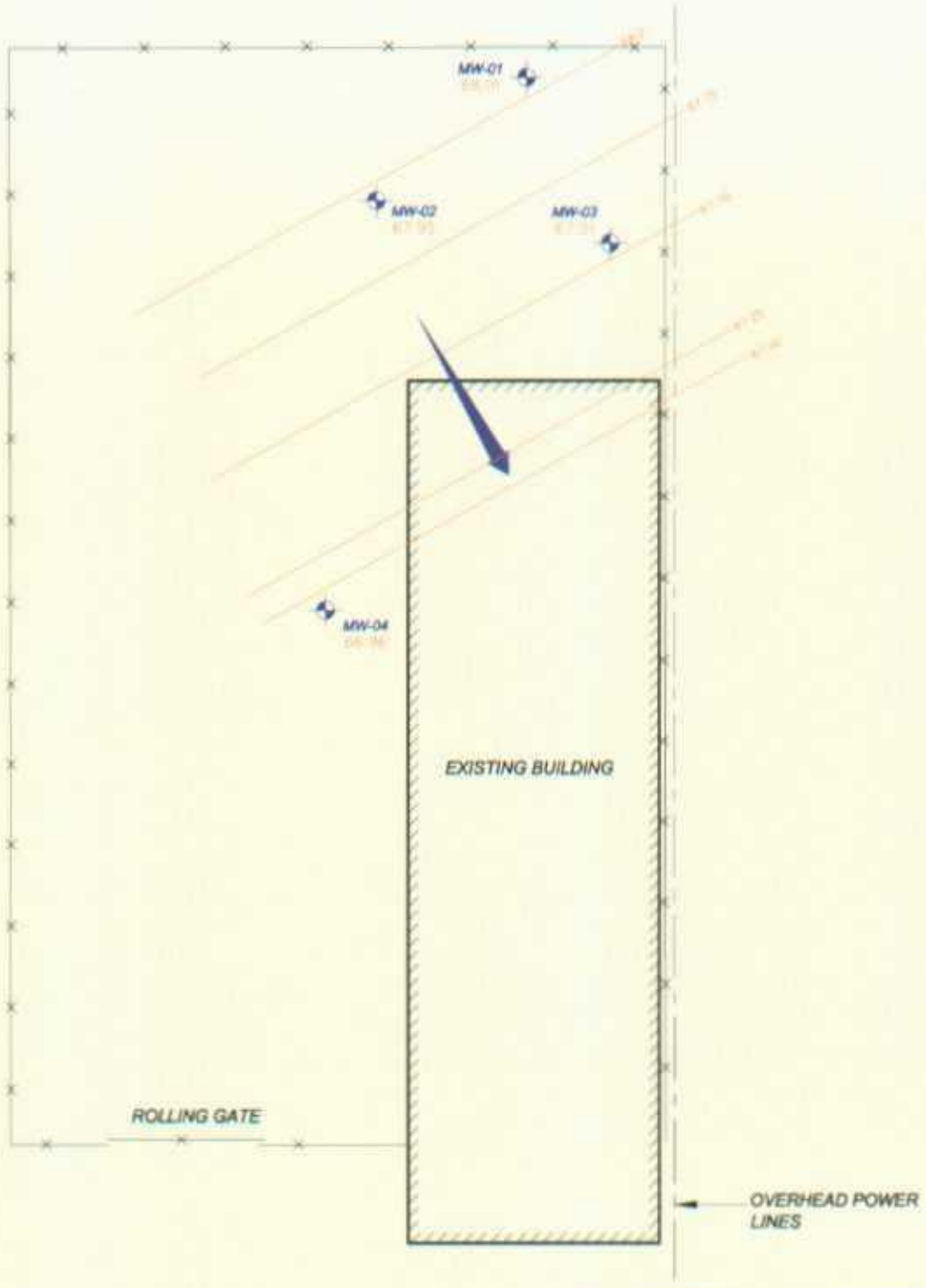
FIGURE: GROUNDWATER FLOW DIRECTION	DATE: JUNE 99
SCALE: APPROX. 1" = 35'	FIGURE: FIGURE 2-3



LEGEND

- MONITORING WELL
- FENCE
- GRADIENT LINE
- GROUNDWATER FLOW DIRECTION

HYDRAULIC GRADIENT 0.0143 ft/ft (MW-01 & MW-03)

N

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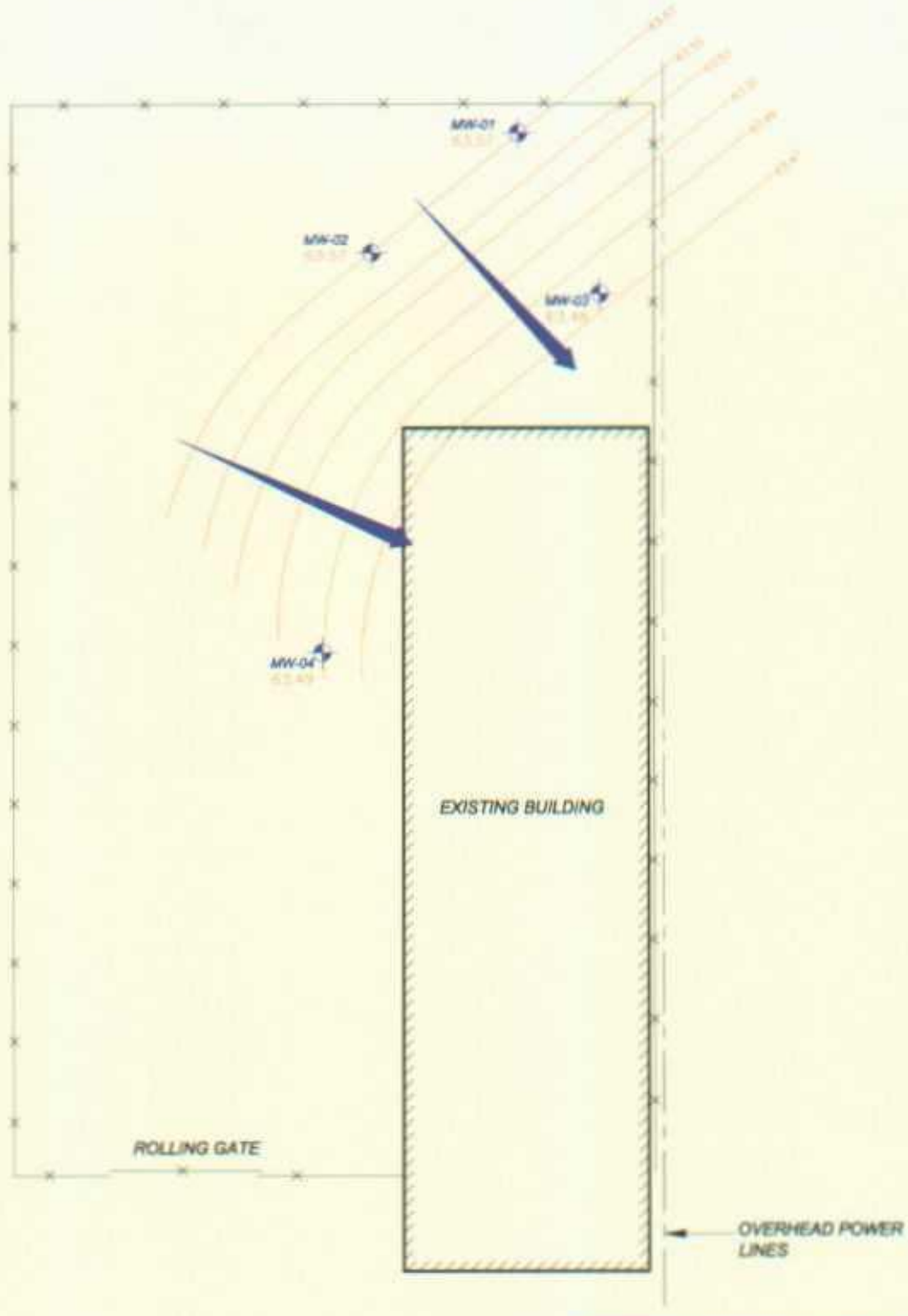
FIGURE: GROUNDWATER FLOW DIRECTION	DATE: NOVEMBER 99
SCALE: APPROX. 1" = 35'	FIGURE: FIGURE 2-4



N

LEGEND

- MONITORING WELL
- FENCE
- GRADIENT LINE
- GROUNDWATER FLOW DIRECTION

HYDRAULIC GRADIENT 0.00257 ft/ft
(MW-01 & MW-03)

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FIGURE: GROUNDWATER FLOW DIRECTION	DATE: FEBRUARY 2000
SCALE: APPROX. 1" = 35'	FIGURE: FIGURE 2-5

CONCLUSIONS 3.0

Based upon the Site quarterly sampling activities and analytical data collected during the Site investigation, ENTACT has reached the following conclusions regarding this former Wellex facility:

- Total petroleum hydrocarbon concentrations were detected above the laboratory detection limit in two quarterly sampling events (June and November 1999).

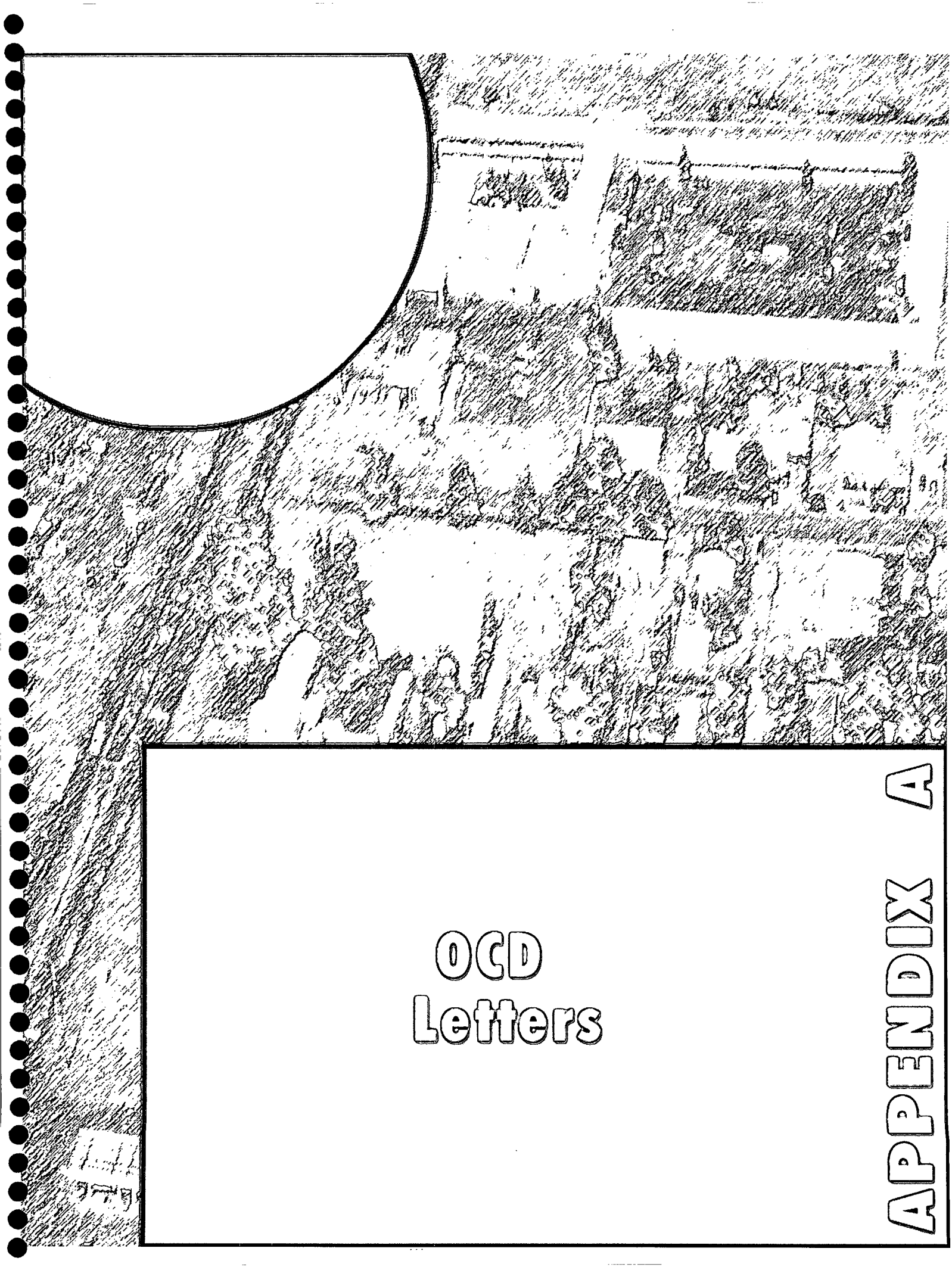
- Benzene, toluene, ethylbenzene, xylene (BTEX) concentrations were all below the regulatory limit throughout all sampling events.

- New Mexico Water Quality Control Commission (WQCC) metals and cations and anions concentrations detected were all below regulatory limits.

- The groundwater flow direction was southwest to south-southwest, with a hydraulic gradient of 0.0041 feet/feet (March 1999), 0.0205 feet/feet (June 1999), 0.0143 feet/feet (November 1999), and 0.00257 feet/feet (February 2000).

- The water produced during the sampling events was drummed and transported for offsite disposal.

Based on Site investigation information, no further action is warranted.



APPENDIX A

OCD Letters

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

January 22, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-598

Mr. Joe Larkin
Halliburton Energy Services
4100 Clinton Dr., Bldg 3, 1107E
Houston, Texas 77020

RE: OLD WELLEX FACILITY
FARMINGTON, NEW, MEXICO

Dear Mr. Larkin:

The New Mexico Oil Conservation Division (OCD) has reviewed Halliburton Energy Services (HES) September 25, 1998 "FORMER WELLEX FACILITY, FARMINGTON, NEW MEXICO" which was submitted on behalf of HES by their consultant ENTACT. This document contains the results of HES's investigation and remediation of contamination related to a waste disposal pit at the old Wellex/Otis Engineering facility in Farmington, New Mexico. The document also contains HES's request for closure of the site remedial actions.

The investigation and remediation actions taken to date are satisfactory. However, the OCD has the following comments and requests:

1. The OCD's March 26, 1998 approval of HES's work plan required that ground water also be sampled for New Mexico Water Quality Control Commission (WQCC) metals and cations and anions due to their presence in the sump area. The above referenced document does not contain this data. Please provide the OCD with this data.

2. Due to the elevated levels of total petroleum hydrocarbons remaining in the base of the excavation, the OCD requires that HES demonstrate that ground water from the monitor wells be show to be below WQCC standards for 4 consecutive quarters prior to issuing final closure approval. Please provide a ground water monitoring plan to achieve this requirement.

The OCD requires that HES provide the OCD with the above items by April 1, 1999. Please submit these items to the OCD Santa Fe Office with a copy provided to the OCD Aztec District Office.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Marty Cox, ENTACT

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

May 17, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-660

Mr. Joe Larkin
Halliburton Energy Services
4100 Clinton Dr., Bldg 3, 1107E
Houston, Texas 77020

RE: OLD WELLEX FACILITY
FARMINGTON, NEW, MEXICO

Dear Mr. Larkin:

The New Mexico Oil Conservation Division (OCD) has reviewed Halliburton Energy Services (HES) March 31, 1999 "FORMER WELLEX FACILITY, FARMINGTON, NEW MEXICO" which was submitted on behalf of HES by their consultant ENTACT. This document contains the results of HES's monitoring of ground water quality adjacent to a remediated waste disposal pit at the old Wellex/Otis Engineering facility in Farmington, New Mexico. The document also contains HES's long term ground water sampling plan.

The above referenced ground water sampling plan is **approved with the following conditions**:

1. Ground water from the monitor wells shall be sampled and analyzed using EPA approved methods and quality assurance/quality control (QA/QC) procedures.

2. HES shall submit the results of the quarterly ground water monitoring to the OCD in an annual report. The report shall be submitted to the OCD Santa Fe Office by June 1, 2000 with a copy provided to the OCD Aztec District Office. The annual report shall contain:

   a. A description of all quarterly monitoring activities which have occurred including conclusions and recommendations.

   b. A quarterly water table potentiometric map showing the location of the former disposal area, monitor wells and any other pertinent site features as well as the direction and magnitude of the hydraulic gradient.

c. Summary tables of all past and present ground water quality sampling results and copies of all laboratory analytical data sheets and associated QA/QC data taken within the past year.

d. Quarterly isopleth maps for contaminants of concern.

e. The disposition of all wastes generated.

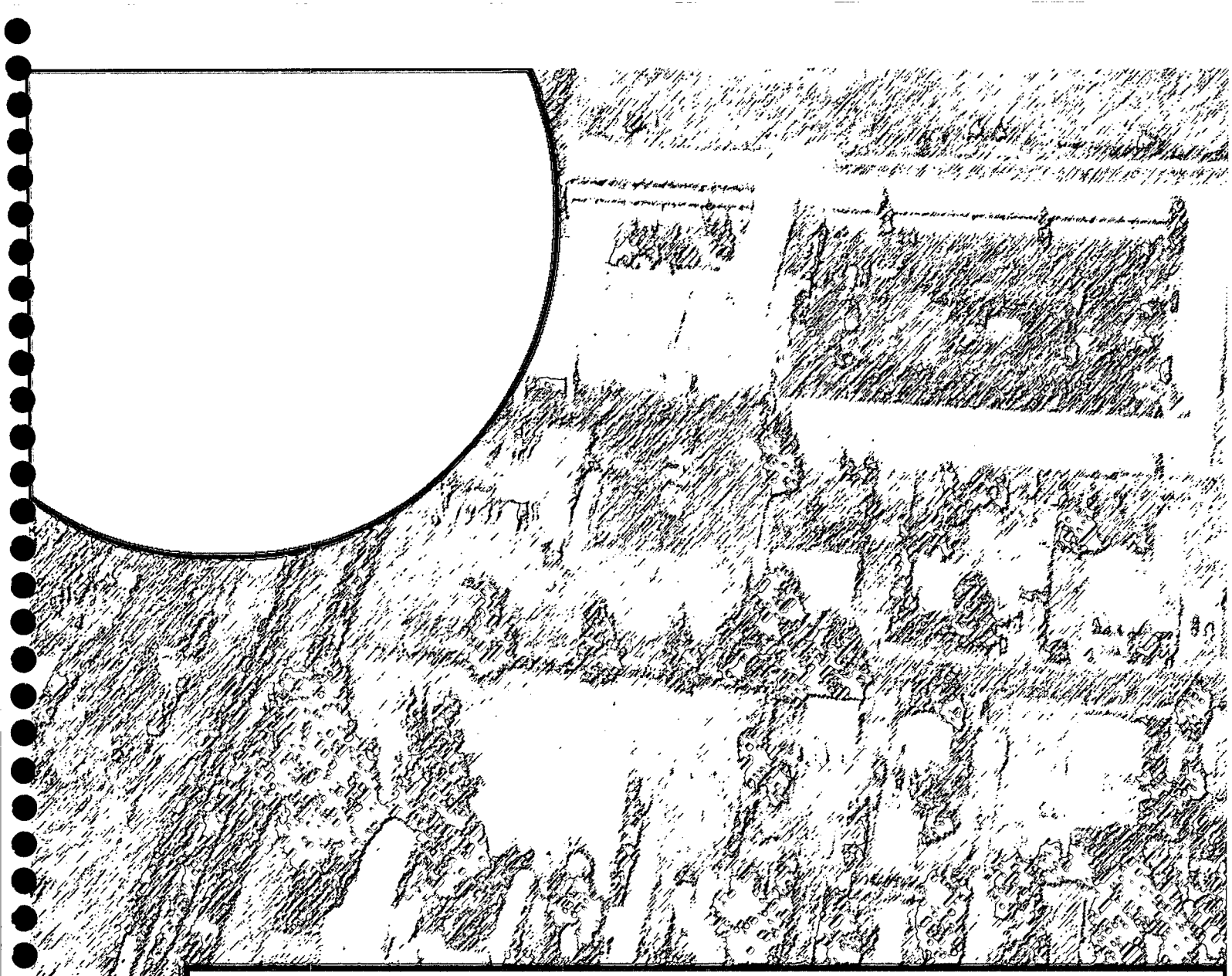
Please be advised that OCD approval does not relieve HES of liability should the sampling plan fail to adequately monitor contamination related to HES's activities, or if contamination exists which is outside the scope of the work plan. In addition, OCD approval does not relieve HES of responsibility for compliance with any other federal, state or local laws and regulations.

If you have any questions or comments, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Marty Cox, ENTACT



APPENDIX B

Boring Logs

ENTACT
4040 West Royal Lane • Suite 136
Irving, Texas 75063 • 972.580.1323

LOG OF BORING MW-01

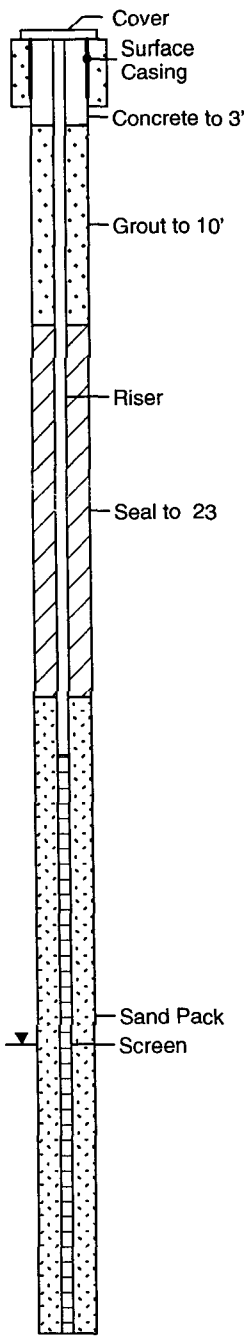
Phase 2
Halliburton - Farmington
2600 Bloomfield Highway
Farmington, New Mexico
D 536

Date Completed	: 6/10/98	Top of Casing	: 99.79
Hole Diameter	: *6 Inches*		
Drilling Method	: Odex		
Sampling Method	: Split-Spoon		
Company Rep.	: Bob Rogers- Envirodrill		

Depth in Feet	DESCRIPTION
0	Rock - coarse
4	At 4 feet cobble, less sand
12	At 12 feet, sand, fine to medium grained granite
13	At 13 feet, sand and cobble
20	Cobble
32-34	At 32-34 feet moist
45	

GRAPHIC

Well: MW-01
Elev.: 99.79



Well Construction Information

WELL CONSTRUCTION

Date Compl.	: 6/10/98
Hole Diameter	: 6 inches
Drilling Method	: Odex
Company Rep.	: Bob Rogers-Envirodrill

WELL CASING

Material	: PVC
Diameter	: 2 inches
Joints	: threaded

WELL SCREEN

Material	: PVC
Diameter	: 2 inches
Joints	: threaded
Opening	: *.010 slot*
SAND PACK	: 20/40 quartz
ANNULUS SEAL	: bentonite pellets : and portland cem. : grout

NOTES
End of boring at 45 feet

05-15-2000 P:\PROJECTS\HALLIBU0\FARMING\MW-01.BOR

ENTACT
4040 West Royal Lane • Suite 136
Irving, Texas 75063 • 972.580.1323

LOG OF BORING MW-02

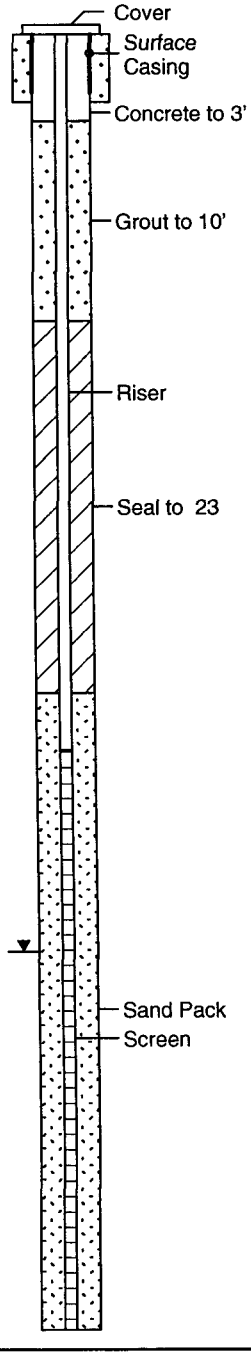
Phase 2
Halliburton - Farmington
2600 Bloomfield Highway
Farmington, New Mexico
D 536

Date Completed	: 6/11/98	Top of Casing	: 100.12
Hole Diameter	: 6 inches		
Drilling Method	: Odex		
Sampling Method	: Split-Spoon		
Company Rep.	: Bob Rogers- Envirodrill		

Depth in Feet	DESCRIPTION
0	CLAY, Reddish-Brown, sandy
	SAND & Cobble
5	Cobble
10	At 11 feet sand and cobble
15	
20	SANDS, poorly graded at 20.5 feet
	Cobble
25	
30	At 32 feet water
35	
40	At 38-40 feet, Soft Zone
45	

GRAPHIC

Well: MW-02
Elev.: 100.12



Well Construction Information

WELL CONSTRUCTION

Date Compl.	: 6/11/98
Hole Diameter	: 6 inches
Drilling Method	: Odex
Company Rep.	: Bob Rogers-Envirodrill

WELL CASING

Material	: PVC
Diameter	: 2 inches
Joints	: threaded

WELL SCREEN

Material	: PVC
Diameter	: 2 inches
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/40 quartz
ANNULUS SEAL	: bentonite pellets : and portland cem. : grout

NOTES
End of boring at 45 feet

05-15-2000 P:\PROJECTS\HALLIBU\FARMING\MW-02.BOR

ENTACT
4040 West Royal Lane • Suite 136
Irving, Texas 75063 • 972.580.1323

LOG OF BORING MW-03

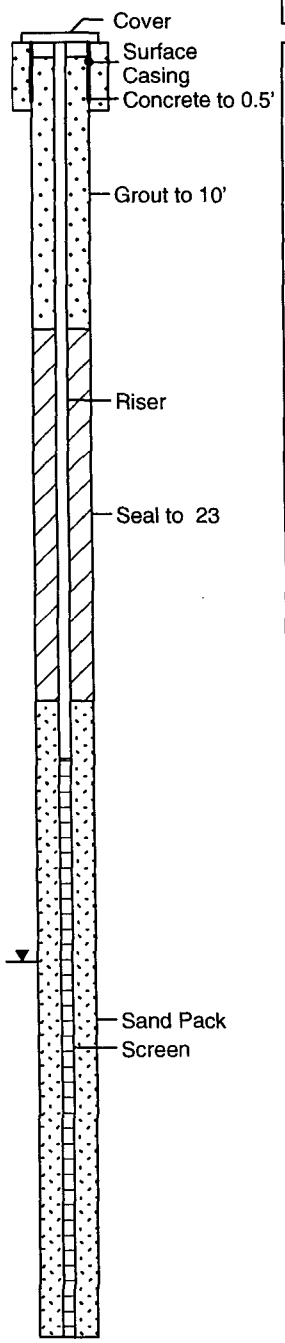
Phase 2
Halliburton - Farmington
2600 Bloomfield Highway
Farmington, New Mexico
D 536

Date Completed : 7/14/98
Hole Diameter : 8 inches
Drilling Method : Odex
Sampling Method : Split-Spoon
Company Rep. : Total Support

Top of Casing : 99.69

Well: MW-03
Elev.: 99.69

Depth in Feet	DESCRIPTION
0	Concrete
	CLAYEY SAND, backfill
5	
10	
15	
	Cobles & Sand
20	
25	
30	Water at 32 feet, brownish in color
35	
40	
45	



Well Construction Information

WELL CONSTRUCTION
Date Compl. : 7/14/98
Hole Diameter : 8 inches
Drilling Method : Odex
Company Rep. : Total Support

WELL CASING
Material : PVC
Diameter : 2 inches
Joints : Screw-Coupled

WELL SCREEN
Material : PVC
Diameter : 2 inches
Joints : threaded
Opening : .010 slot

SAND PACK : 20/40 quartz

ANNULUS SEAL : bentonite pellets : and portland cem. : grout : Cement Grout

NOTES
End of boring at 45 feet

05-15-2000 P:\PROJECTS\HALLIBU0\FARMING\MW-03.BOR

ENTACT
4040 West Royal Lane • Suite 136
Irving, Texas 75063 • 972.580.1323

LOG OF BORING MW-04

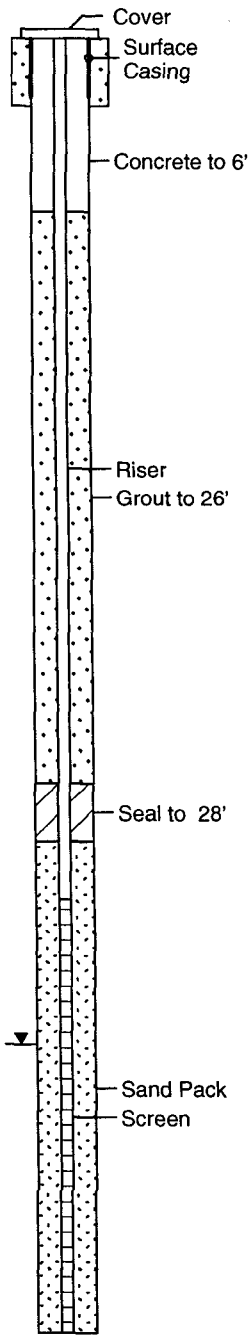
Phase 2
Halliburton - Farmington
2600 Bloomfield Highway
Farmington, New Mexico
D 536

Date Completed : 6/09/98
Hole Diameter : 6 inches
Drilling Method : Odex
Sampling Method : Split-Spoon
Company Rep. : Bob Rogers-Envirodrill

Top of Casing : 99.44

Depth in Feet	DESCRIPTION
0	
5	At 5 feet, hard drilling, granitic rock fragments
	At 7 feet, REDDISH-BROWN sand and cobble
10	At 11-11.5 feet moitst sand
15	Cobble
20	
25	At 26.5-27.5 feet, sand and cobble
30	
35	At 33-34 feet, moist sand and cobble
40	
45	

GRAPHIC



Well Construction Information

WELL CONSTRUCTION

Date Compl.	: 6/9/98
Hole Diameter	: 6 inches
Drilling Method	: Odex
Company Rep.	: Bob Rogers-Envirodrill

WELL CASING

Material	: PVC
Diameter	: 2 inches
Joints	: threaded

WELL SCREEN

Material	: PVC
Diameter	: 2 inches
Joints	: threaded
Opening	: .010 slot
SAND PACK	: 20/40 quartz
ANNULUS SEAL	: bentonite pellets : and portland cem. : grout

NOTES
End of boring at 45 feet

05-15-2000 P:\PROJECTS\HALLIBU0\FARMING\MW-04.BOR

APPENDIX C

Field Records

ENVIROTECH INC.
FARMINGTON, NM 5796 HIGHWAY 64
MONITOR WELL DATA

Date: 9-15-99 Project No: 806103

Project Name: ENTACT Chain of Custody No: _____

Location: WELEX SITE, FARMINGTON

Project Manager: HB Sampler: MW

MONITOR WELL DATA

WELL #	TIME	OVM ppm	pH	COND. µS	TEMP. °F	DEPTH TO WATER FT.	TOTAL DEPTH FT.	WATER COLUMN FT.	BAILED Water Gal.	PRODUCT ft.	WATER LEVEL FT.
MW01	11:45	-	7.31	1200	64.7	38.61	44.32	5.71	2.9		
MW02	13:15	-	7.24	1200	62.8	38.82	44.01	5.19	2.6		
MW03	14:00	-	7.20	1200	63.8	38.61	44.91	6.30	3.2		
MW04	15:15	-	6.96	1200	62.1	38.28	44.05	5.77	2.9		

Notes: TOC = Top of Casing
Bailed = 3 well volumnes:
1.25" well = 0.19 gal/ft.
2.00" well = 0.49 gal/ft.
4.00" well = 1.96 gal/ft.
Note well diameter if not one of the above.

3-15-99

MW 01 - CLOUDY GREY ; NO ODOR

MW 02 - SLIGHTLY CLOUDY BROWN ; NO ODOR

MW 03 - CLEAR TO VERY SLIGHTLY BROWN ; NO ODOR

MW 04 - CLEAR ; NO ODOR

ENVIROTECH INC.
FARMINGTON, NM 5796 HIGHWAY 64
MONITOR WELL DATA

Date: 6-23-99 Project No: 98061-03

Project Name: Entact Chain of Custody No: _____

Location: Velex Site

Project Manager: HmB Sampler: CW

MONITOR WELL DATA

WELL #	TIME	OVM ppm	pH	COND. µS	TEMP. °F	DEPTH TO WATER FT.	TOTAL DEPTH FT.	WATER COLUMN FT.	BAILED Water Gal.	PRODUCT Ft.	WATER LEVEL FT.
MW01	15:00	—	8.17	700	22°	32.30	44.32	12	6		
MW02	13:30	—	6.53	600	24°	32.55	44.01	12	6		
MW03	14:45	—	7.45	600	32°	32.35	44.91	12	6		
MW04	15:15	—	8.22	500	21°	32.00	44.05	12	6		

Notes: TOC = Top of Casing
Bailed = 3 well volumnes:
1.25" well = 0.19 gal/ft.
2.00" well = 0.49 gal/ft.
4.00" well = 1.96 gal/ft.
Note well diameter if not one of the above.

ENVIROTECH INC.
FARMINGTON, NM 5796 HIGHWAY 64
MONITOR WELL DATA

Date: 11-2-99 Project No: 98061

Project Name: Weller Site Chain of Custody No: _____

Location: Farmington

Project Manager: HMB Sampler: KM/SB

MONITOR WELL DATA

WELL #	TIME	OVM ppm	pH	COND. µS	TEMP. °C	DEPTH TO WATER FT.	TOTAL DEPTH FT.	WATER COLUMN FT.	BAILED Water Gal.	PRODUCT Ft.	WATER LEVEL FT.
MW-4	12:33	—			16	31.80	44	13	8		
MW-3	12:50				16	32.15	44	12	8		
MW-1	1310				16	32.15	45	13	8		
MW-2	1325				16	32.45	44	12	8		
MW-1	Dupe	1310									

Notes: TOC = Top of Casing
Bailed = 3 well volumnes:
1.25" well = 0.19 gal/ft.
2.00" well = 0.49 gal/ft.
4.00" well = 1.96 gal/ft.
Note well diameter if not one of the above.

Groundwater Sampling Record

Site	FARMINGTON, NEW MEXICO	Technician	MARTY COX	Method used	Low Flow
Client	Halliburton	Well Number	MW-01	Time 1425	
Project Number	D543	Equipment Number		Date 2-1-2005	
				Weather 34°F	

Field Equipment decontaminated, prior to use?												
Well Condition: Locked?	Steel casing condition?		Inner PVC casig condition?									
Well Depth												
TOC Elevation												
Water Level Prior to Purging*	36.24											
Depth of Line Placement*												
Water Level After Sampling*												
* Measured from the top of the PVC casing												
Time	1430	1435	1442									
Clarity of Water												
pH	7.7	7.6	7.7									
Conductivity (mS/cm)	0.45	0.47	0.47									
Temperature (C)	57.1	57.4	55.2									
Turbidity (NTU)												
Salinity (%)												
DO (mg/l)												

Amount Purged:	2.5 gal					
Type of Containers used	Plastic	Amber Glass	2X40 ml vials w/ Teflon lined septum caps			
On-Site Sample Preservation:	Added in the field, what method and containers?		Added by Laboratory to containers?			
Container Handling:	Container Sides Labeled amd Labels Taped					
	Container Lids Taped					
	Containers Placed in Ice Chest					

Comments/ Notes:

Groundwater Sampling Record

Site	FARMINGTON, NEW MEXICO	Technician	MARTY COX	Method used	Low Flow
Client	Halliburton	Well Number	MW-02	Time 1452	
Project Number	D543	Equipment Number		Date 2-1-2005	
				Weather 36° F	

Field Equipment decontaminated, prior to use?												
Well Condition: Locked?	Steel casing condition?	Inner PVC casig condition?										
Well Depth												
TOC Elevation												
Water Level Prior to Purging*	36.53											
Depth of Line Placement*												
Water Level After Sampling*												
* Measured from the top of the PVC casing												
Time	1406	1412	1417									
Clarity of Water												
pH	7.6	7.6	7.6									
Conductivity (mS/cm)	0.57	0.56	0.41									
Temperature (C)	59.5	60.0	59.9									
Turbidity (NTU)												
Salinity (%)												
DO (mg/l)												

Amount Purged:

Type of Containers used	Plastic	Amber Glass	2X40 ml vials w/ Teflon lined septum caps			

On-Site Sample Preservation: Added in the field, what method and containers? Added by Laboratory to containers?

Container Handling:	Container Sides Labeled amd Labels Taped
	Container Lids Taped
	Containers Placed in Ice Chest

Comments/ Notes:

Groundwater Sampling Record

Site	FARMINGTON, NEW MEXICO	Technician	MARTY COX	Method used	Low Flow
Client	Halliburton	Well Number	MW-03	Time	1447
Project Number	D543	Equipment Number		Date	2-1-2011
				Weather	37° F

Field Equipment decontaminated, prior to use?												
Well Condition: Locked?	Steel casing condition?	Inner PVC casig condition?										
Well Depth												
TOC Elevation												
Water Level Prior to Purging*	36.21											
Depth of Line Placement*												
Water Level After Sampling*												
* Measured from the top of the PVC casing												
Time	1451	1457	1503	1518								
Clarity of Water	clear											
pH	7.8	7.7	7.8	7.7								
Conductivity (mS/cm)	0.56	0.45	0.44	0.44								
Temperature (C)	46.5	51.3	55.8	57.4								
Turbidity (NTU)												
Salinity (%)												
DO (mg/l)												

Amount Purged:	3.0 gal					
Type of Containers used	Plastic	Amber Glass	2X40 ml vials w/ Teflon lined septum caps			
On-Site Sample Preservation: Added in the field, what method and containers?			Added by Laboratory to containers?			
Container Handling:	Container Sides Labeled amd Labels Taped					
	Container Lids Taped					
	Containers Placed in Ice Chest					

Comments/ Notes:

Groundwater Sampling Record

Site	FARMINGTON, NEW MEXICO	Technician	MARTY COX	Method used WHALE	Low Flow
Client	Halliburton	Well Number	MW-04	Time 1312	
Project Number	D543	Equipment Number		Date 2/1/2005	
				Weather 36°F	

Field Equipment decontaminated, prior to use?			
Well Condition: Locked?	Steel casing condition?	Inner PVC casig condition?	
Well Depth			
TOC Elevation			
Water Level Prior to Purging*	35.92		
Depth of Line Placement*			
Water Level After Sampling*			
* Measured from the top of the PVC casing			

Time	1330	1337	1344										
Clarity of Water	SLIGHTLY TURBID	TURBID											
pH	7.8	7.6	7.6										
Conductivity (mS/cm)	0.53	0.56	0.56										
Temperature (C)	63°F	61.9	63.6										
Turbidity (NTU)													
Salinity (%)													
DO (mg/l)													

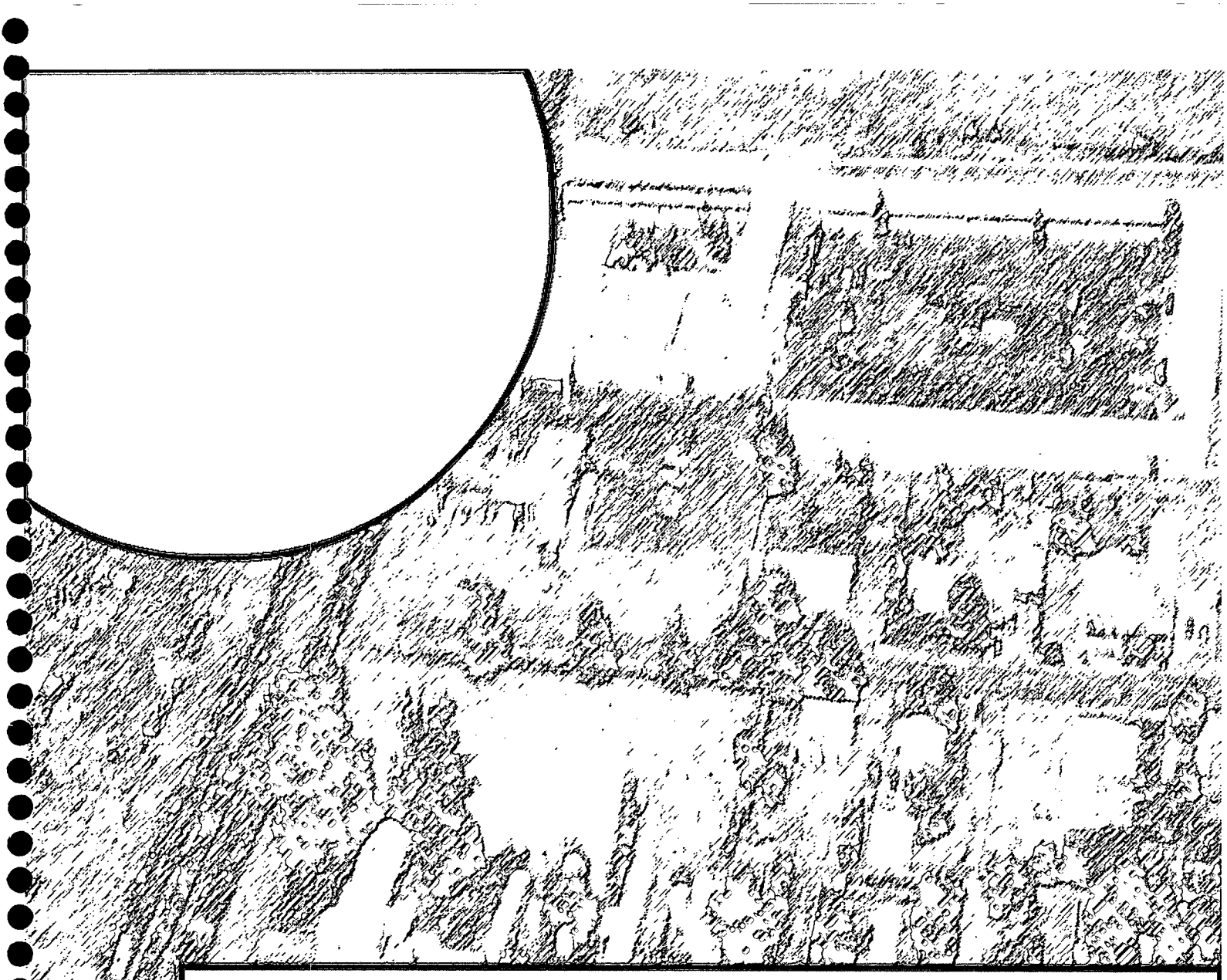
Amount Purged: 2 gal

Type of Containers used	Plastic	Amber Glass	2X40 ml vials w/ Teflon lined septum caps			

On-Site Sample Preservation: Added in the field, what method and containers? Added by Laboratory to containers?

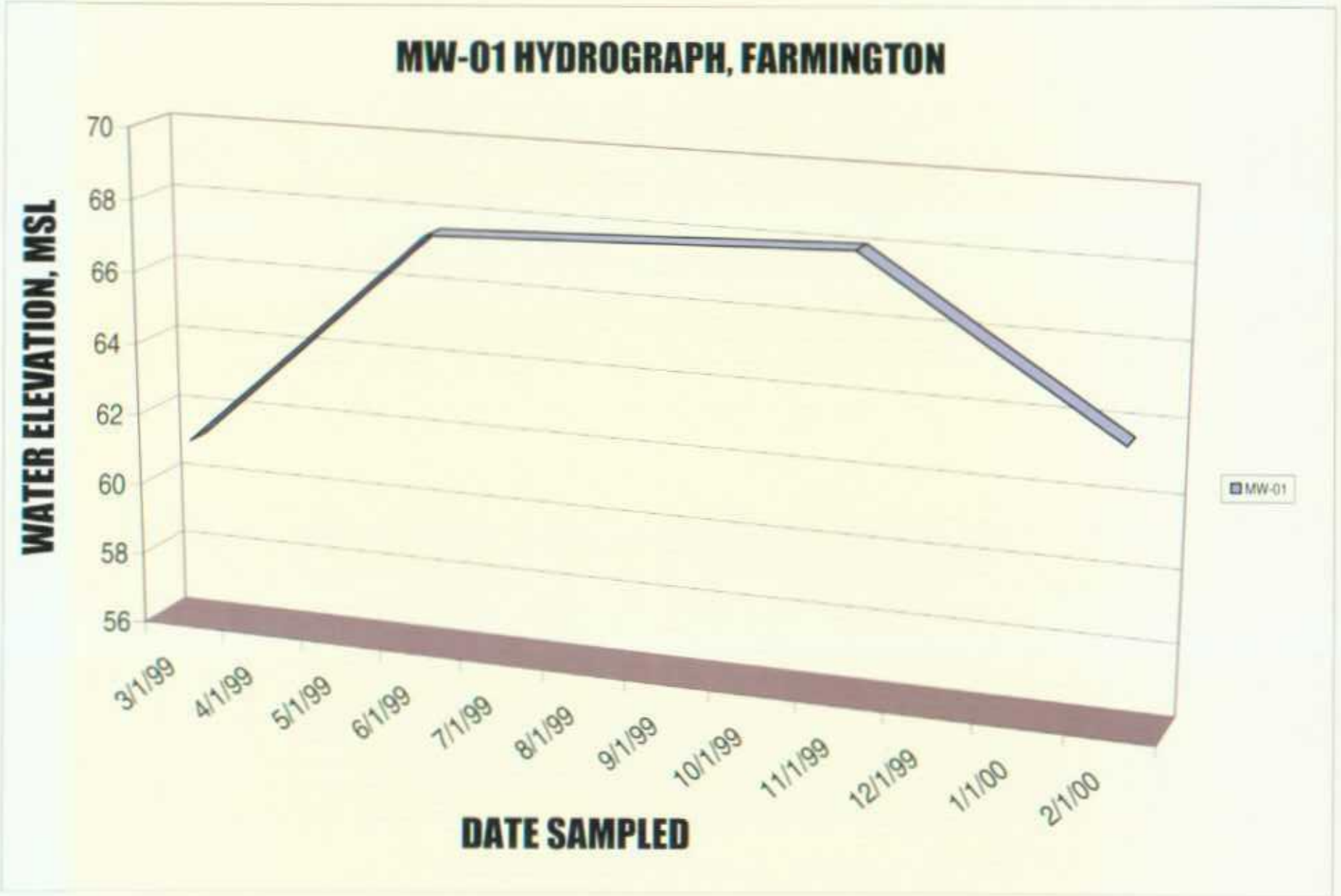
Container Handling:	Container Sides Labeled amd Labels Taped
	Container Lids Taped
	Containers Placed in Ice Chest

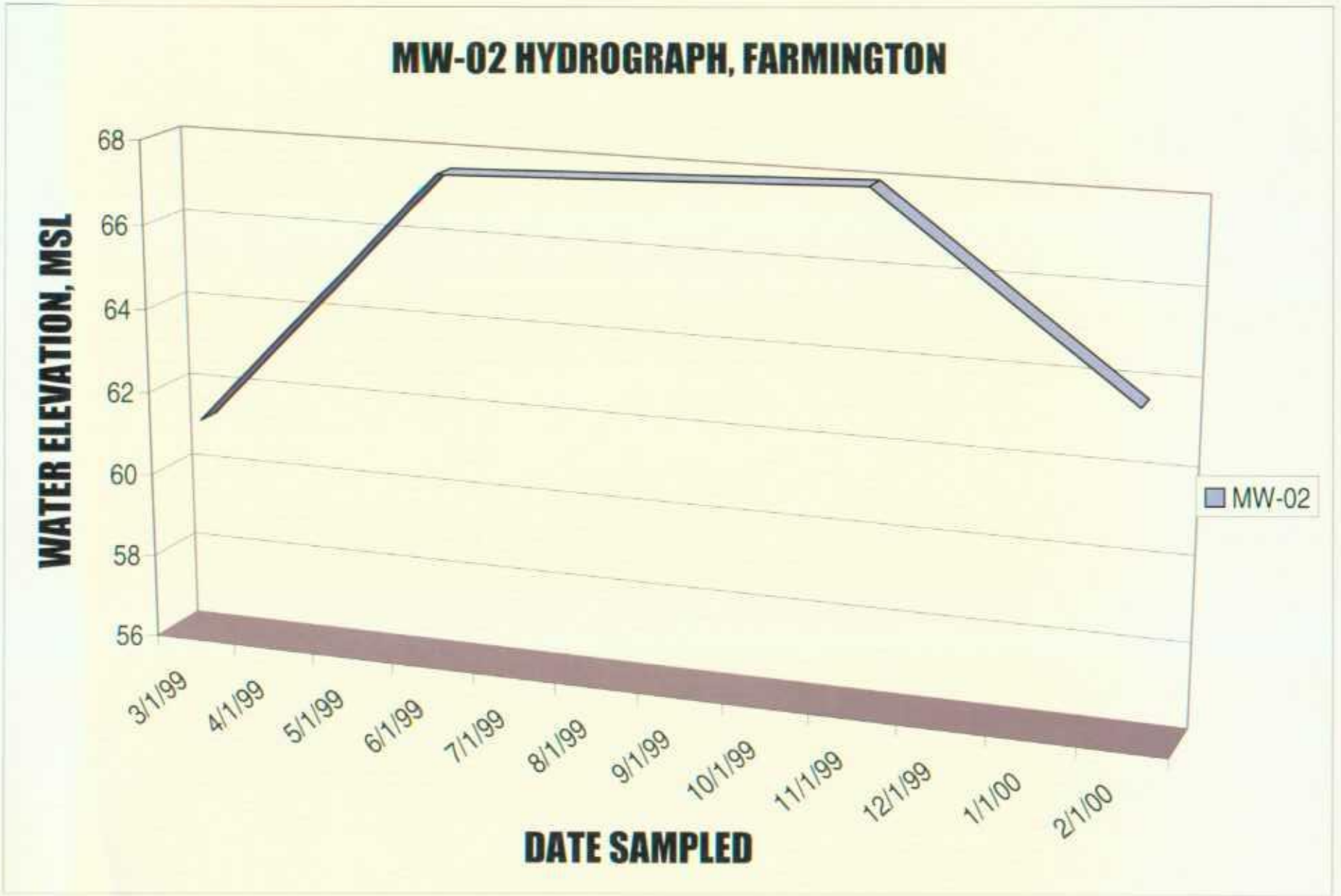
Comments/ Notes:

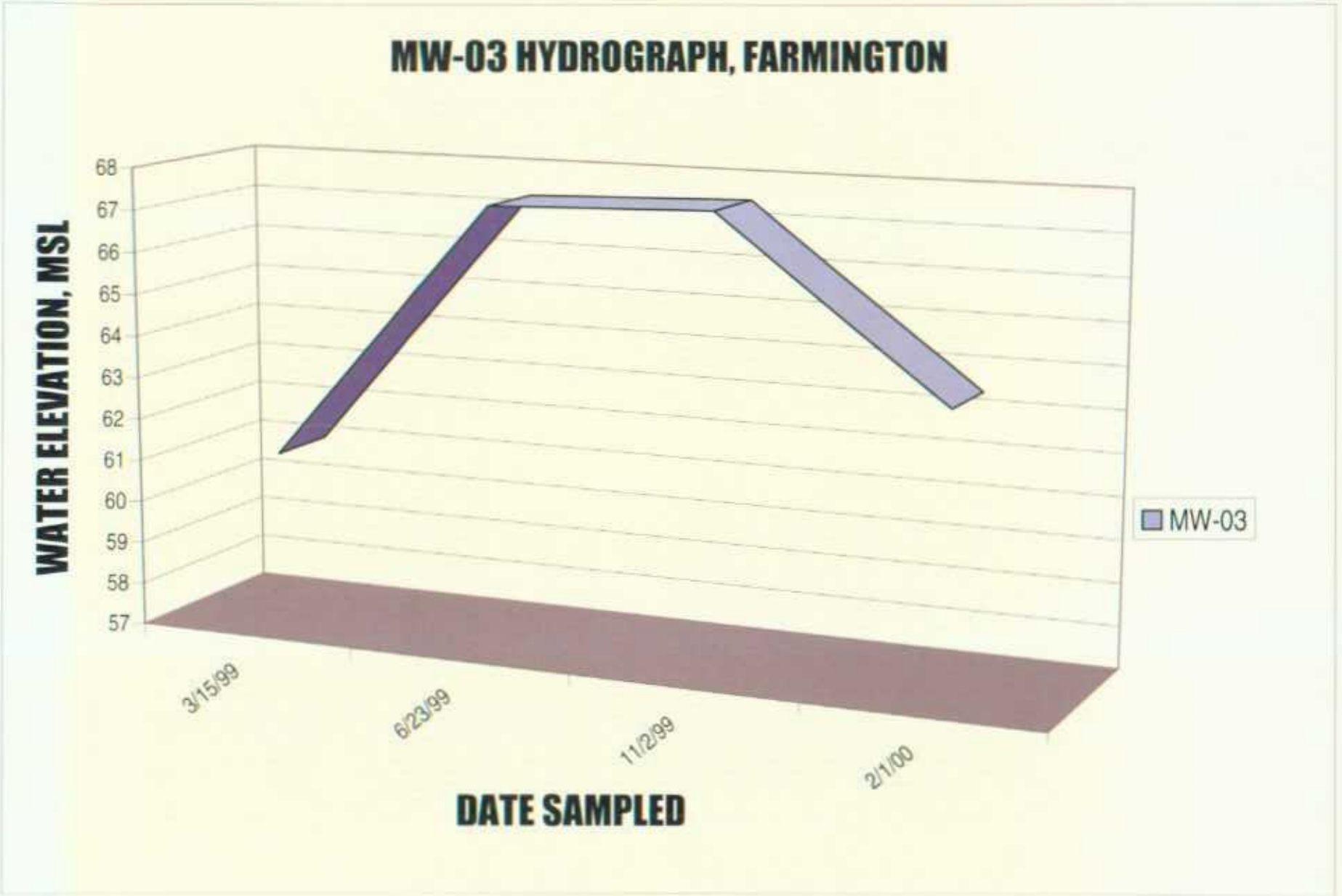


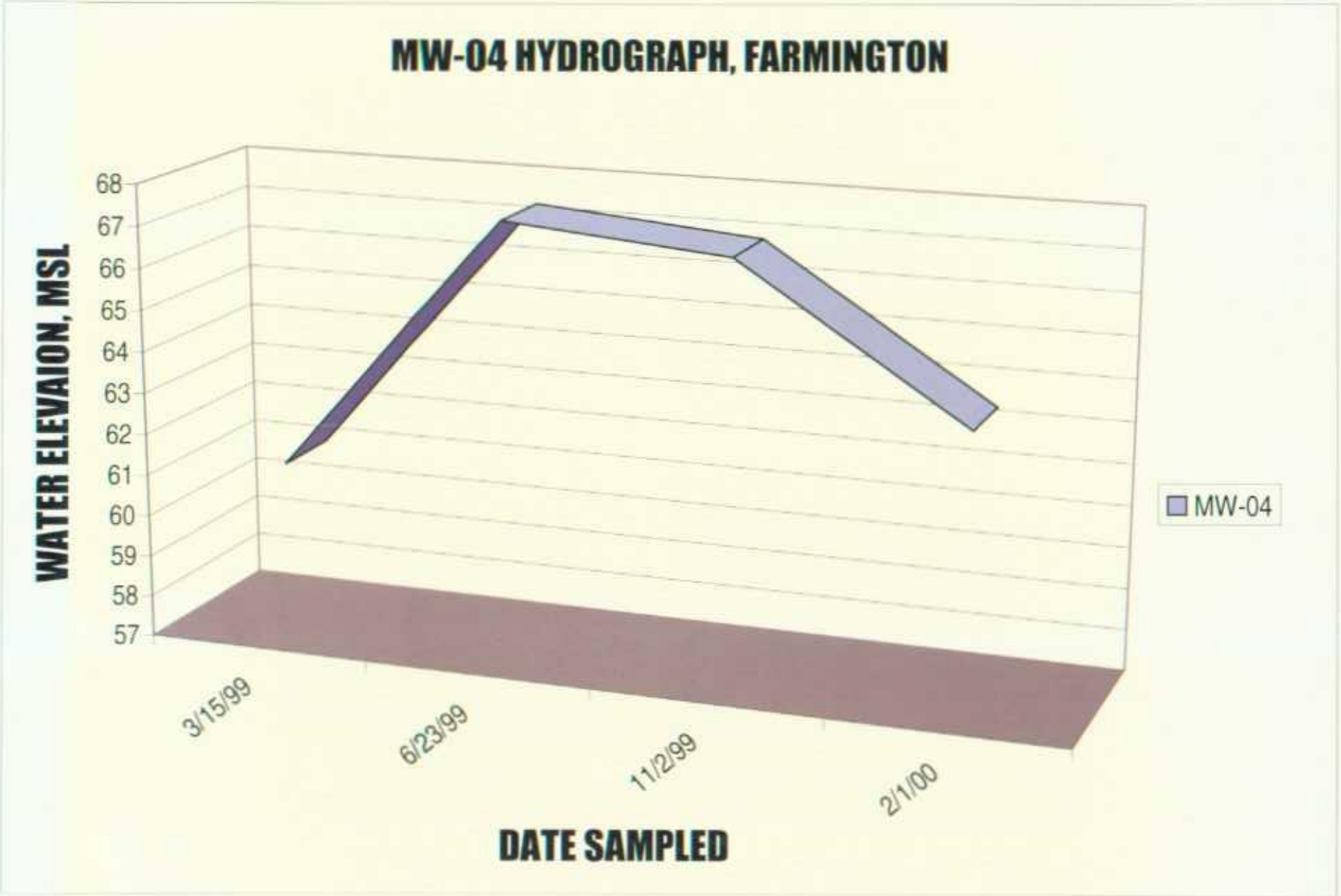
APPENDIX D

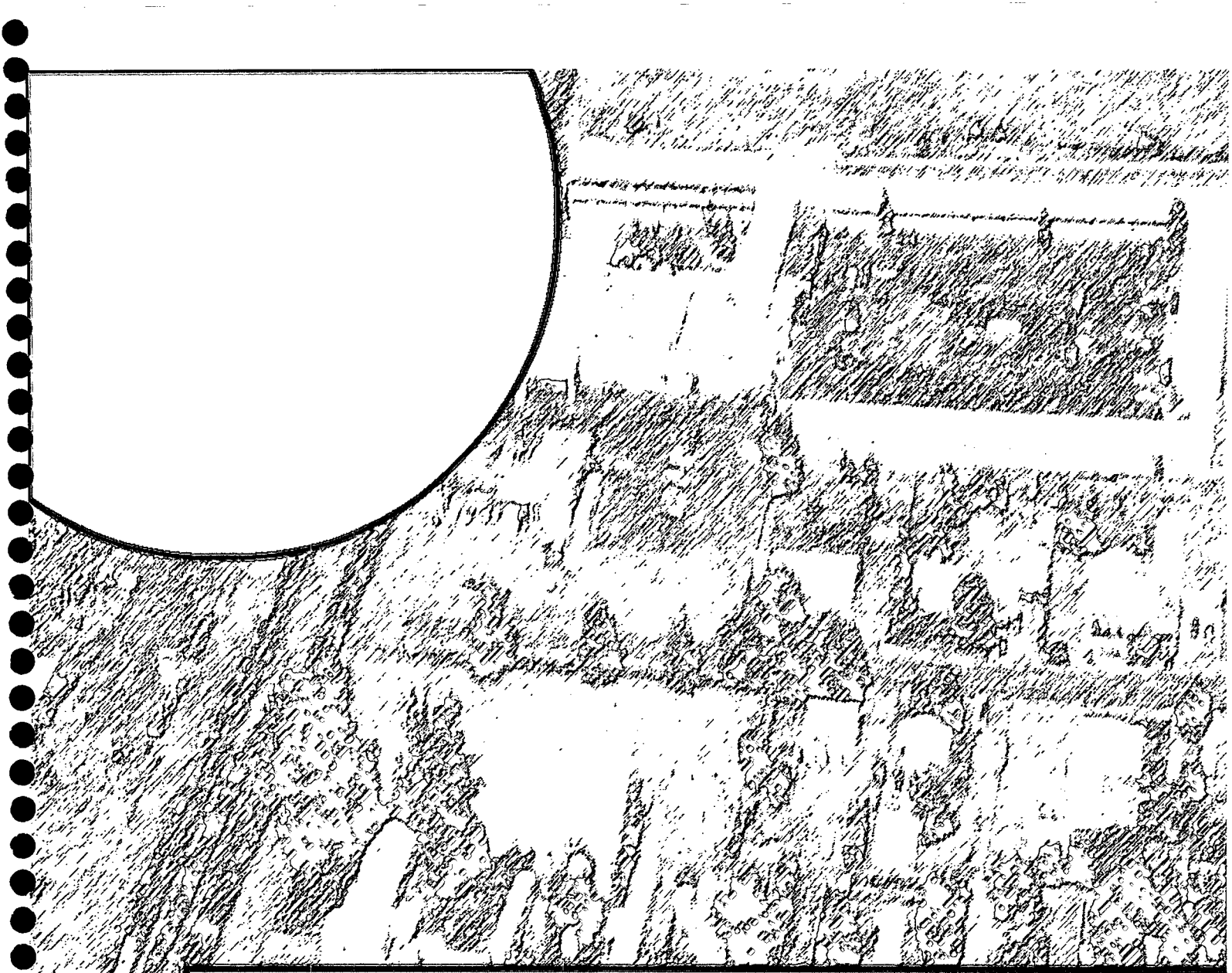
Hydrographs


MW-01 HYDROGRAPH, FARMINGTON
WATER ELEVATION, MSL
70
68
66
64
62
60
58
56
3/1/99
4/1/99
5/1/99
6/1/99
7/1/99
8/1/99
9/1/99
10/1/99
11/1/99
12/1/99
1/1/00
2/1/00
DATE SAMPLED
MW-01


MW-02 HYDROGRAPH, FARMINGTON
WATER ELEVATION, MSL
68
66
64
62
60
58
56
3/1/99
4/1/99
5/1/99
6/1/99
7/1/99
8/1/99
9/1/99
10/1/99
11/1/99
12/1/99
1/1/00
2/1/00
DATE SAMPLED
MW-02


MW-03 HYDROGRAPH, FARMINGTON
WATER ELEVATION, MSL
68
67
66
65
64
63
62
61
60
59
58
57
3/15/99
6/23/99
11/2/99
2/1/00
DATE SAMPLED
MW-03


MW-04 HYDROGRAPH, FARMINGTON
WATER ELEVAION, MSL
68
67
66
65
64
63
62
61
60
59
58
57
3/15/99
6/23/99
11/2/99
2/1/00
DATE SAMPLED
MW-04



Analytical Results for March 1999

APPENDIX E

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	ENTACT	Project #:	806103
Sample ID:	MW 01	Date Reported:	03-23-99
Laboratory Number:	E815	Date Sampled:	03-15-99
Chain of Custody No:	6754	Date Received:	03-22-99
Sample Matrix:	Water	Date Extracted:	03-23-99
Preservative:	Cool	Date Analyzed:	03-23-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Welex site, Farmington.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	ENTACT	Project #:	806103
Sample ID:	MW 02	Date Reported:	03-23-99
Laboratory Number:	E816	Date Sampled:	03-15-99
Chain of Custody No:	6754	Date Received:	03-22-99
Sample Matrix:	Water	Date Extracted:	03-23-99
Preservative:	Cool	Date Analyzed:	03-23-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Welex Site, Farmington.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	ENTACT	Project #:	806103
Sample ID:	MW 03	Date Reported:	03-23-99
Laboratory Number:	E817	Date Sampled:	03-15-99
Chain of Custody No:	6754	Date Received:	03-22-99
Sample Matrix:	Water	Date Extracted:	03-23-99
Preservative:	Cool	Date Analyzed:	03-23-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Welex Site, Farmington.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	ENTACT	Project #:	806103
Sample ID:	MW 04	Date Reported:	03-23-99
Laboratory Number:	E818	Date Sampled:	03-15-99
Chain of Custody No:	6754	Date Received:	03-22-99
Sample Matrix:	Water	Date Extracted:	03-23-99
Preservative:	Cool	Date Analyzed:	03-23-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Welex Site, Farmington.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	03-23-TPH QA/QC	Date Reported:	03-23-99
Laboratory Number:	E815	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-23-99
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	03-15-99	4.5896E-002	4.5814E-002	**0.18%**	**0 - 15%**
Diesel Range C10 - C28	03-15-99	3.1578E-002	3.1527E-002	**0.16%**	**0 - 15%**

Blank Conc. (mg/L)	Concentration	Detection Limit
Gasoline Range C5 - C10	**ND**	**0.2**
Diesel Range C10 - C28	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

Duplicate Conc. (mg/L)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	**ND**	**ND**	**0.0%**	**0 - 30%**
Diesel Range C10 - C28	**ND**	**ND**	**0.0%**	**0 - 30%**

Spike Conc. (mg/L)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	**ND**	**25.0**	**25.0**	**100%**	**75 - 125%**
Diesel Range C10 - C28	**ND**	**25.0**	**25.0**	**100%**	**75 - 125%**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples E815 - E818.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ENTACT	Project #:	806103
Sample ID:	MW 01	Date Reported:	03-17-99
Chain of Custody:	6748	Date Sampled:	03-15-99
Laboratory Number:	E815	Date Received:	03-16-99
Sample Matrix:	Water	Date Analyzed:	03-17-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**2.5**	**1**	**0.2**
Toluene	**4.2**	**1**	**0.2**
Ethylbenzene	**ND**	**1**	**0.2**
p,m-Xylene	**3.3**	**1**	**0.2**
o-Xylene	**4.0**	**1**	**0.1**
Total BTEX	**14.0**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**97 %**
	Bromofluorobenzene	**97 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Welex Site, Farmington.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ENTACT	Project #:	806103
Sample ID:	MW 02	Date Reported:	03-17-99
Chain of Custody:	6748	Date Sampled:	03-15-99
Laboratory Number:	E816	Date Received:	03-16-99
Sample Matrix:	Water	Date Analyzed:	03-17-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**4.5**	**1**	**0.2**
Toluene	**0.4**	**1**	**0.2**
Ethylbenzene	**1.9**	**1**	**0.2**
p,m-Xylene	**1.9**	**1**	**0.2**
o-Xylene	**0.7**	**1**	**0.1**
Total BTEX	**9.4**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**100 %**
	Bromofluorobenzene	**100 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Welex Site, Farmington.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ENTACT	Project #:	806103
Sample ID:	MW 03	Date Reported:	03-17-99
Chain of Custody:	6748	Date Sampled:	03-15-99
Laboratory Number:	E817	Date Received:	03-16-99
Sample Matrix:	Water	Date Analyzed:	03-17-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**2.2**	**1**	**0.2**
Toluene	**1.4**	**1**	**0.2**
Ethylbenzene	**1.5**	**1**	**0.2**
p,m-Xylene	**5.9**	**1**	**0.2**
o-Xylene	**1.3**	**1**	**0.1**
Total BTEX	**12.3**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**97 %**
	Bromofluorobenzene	**97 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Welex Site, Farmington.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ENTACT	Project #:	806103
Sample ID:	MW 04	Date Reported:	03-17-99
Chain of Custody:	6748	Date Sampled:	03-15-99
Laboratory Number:	E818	Date Received:	03-16-99
Sample Matrix:	Water	Date Analyzed:	03-17-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**0.5**	**1**	**0.2**
Toluene	**0.2**	**1**	**0.2**
Ethylbenzene	**0.5**	**1**	**0.2**
p,m-Xylene	**2.2**	**1**	**0.2**
o-Xylene	**0.7**	**1**	**0.1**
Total BTEX	**4.1**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**99 %**
	Bromofluorobenzene	**99 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Welex Site, Farmington.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS
QUALITY ASSURANCE REPORT

Client:	N/A	Project #:	N/A
Sample ID:	03-17-BTEX QA/QC	Date Reported:	03-17-99
Laboratory Number:	E815	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-17-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc.	Detect. Limit
Benzene	7.0480E-002	7.0706E-002	0.32%	ND	0.2
Toluene	3.5438E-002	3.5445E-002	0.02%	ND	0.2
Ethylbenzene	4.3145E-002	4.3196E-002	0.12%	ND	0.2
p,m-Xylene	3.9965E-002	3.9973E-002	0.02%	ND	0.2
o-Xylene	3.9081E-002	3.9199E-002	0.30%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	2.5	2.5	0.0%	0 - 30%
Toluene	4.2	4.2	0.0%	0 - 30%
Ethylbenzene	ND	ND	0.0%	0 - 30%
p,m-Xylene	3.3	3.5	6.1%	0 - 30%
o-Xylene	4.0	4.0	0.0%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	2.5	50.0	52.4	100%	39 - 150
Toluene	4.2	50.0	53.9	99%	46 - 148
Ethylbenzene	ND	50.0	50.1	100%	32 - 160
p,m-Xylene	3.3	100.0	103.1	100%	46 - 148
o-Xylene	4.0	50.0	53.7	99%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **QA/QC for samples E815 - E819.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 1311
TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL ANALYSIS

Client:	ENTACT	Project #:	806103
Sample ID:	MW 01	Date Reported:	03-19-99
Laboratory Number:	E815	Date Sampled:	03-15-99
Chain of Custody:	6748	Date Received:	03-16-99
Sample Matrix:	Water	Date Analyzed:	03-19-99
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Analysis Needed:	TCLP metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	**0.0104**	**0.0001**	**5.0**
Barium	**0.0027**	**0.001**	**21**
Cadmium	**0.0012**	**0.0001**	**0.11**
Chromium	**0.0008**	**0.0001**	**0.60**
Lead	**ND**	**0.0001**	**0.75**
Mercury	**ND**	**0.0001**	**0.025**
Selenium	**0.0021**	**0.0001**	**5.7**
Silver	**ND**	**0.0001**	**0.14**

ND - Parameter not detected at the stated detection limit.

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, December 1996.

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA, December 1996.

Methods 7060, 7080, 7131, 7191, 7470, 7421, 7740, 7761 Analysis of Metals by GFAA and Cold Vapor Techniques, SW-846, USEPA. December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: **Welex Site, Farmington.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 1311
TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL ANALYSIS

Client:	ENTACT	Project #:	806103
Sample ID:	MW 02	Date Reported:	03-19-99
Laboratory Number:	E816	Date Sampled:	03-15-99
Chain of Custody:	6748	Date Received:	03-16-99
Sample Matrix:	Water	Date Analyzed:	03-19-99
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Analysis Needed:	TCLP metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	**0.0065**	**0.0001**	**5.0**
Barium	**0.0058**	**0.001**	**21**
Cadmium	**0.0040**	**0.0001**	**0.11**
Chromium	**0.0023**	**0.0001**	**0.60**
Lead	**ND**	**0.0001**	**0.75**
Mercury	**ND**	**0.0001**	**0.025**
Selenium	**0.0032**	**0.0001**	**5.7**
Silver	**ND**	**0.0001**	**0.14**

ND - Parameter not detected at the stated detection limit.

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, December 1996.

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA, December 1996.

Methods 7060, 7080, 7131, 7191, 7470, 7421, 7740, 7761 Analysis of Metals by GFAA and Cold Vapor Techniques, SW-846, USEPA. December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: **Welex Site, Farmington.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 1311
TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL ANALYSIS

Client:	ENTACT	Project #:	806103
Sample ID:	MW 03	Date Reported:	03-19-99
Laboratory Number:	E817	Date Sampled:	03-15-99
Chain of Custody:	6748	Date Received:	03-16-99
Sample Matrix:	Water	Date Analyzed:	03-19-99
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Analysis Needed:	TCLP metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	**0.0120**	**0.0001**	**5.0**
Barium	**0.0037**	**0.001**	**21**
Cadmium	**0.0005**	**0.0001**	**0.11**
Chromium	**0.0018**	**0.0001**	**0.60**
Lead	**ND**	**0.0001**	**0.75**
Mercury	**ND**	**0.0001**	**0.025**
Selenium	**0.0031**	**0.0001**	**5.7**
Silver	**ND**	**0.0001**	**0.14**

ND - Parameter not detected at the stated detection limit.

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, December 1996.

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA, December 1996.

Methods 7060, 7080, 7131, 7191, 7470, 7421, 7740, 7761 Analysis of Metals by GFAA and Cold Vapor Techniques, SW-846, USEPA. December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: **Welex Site, Farmington.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 1311
TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL ANALYSIS

Client:	ENTACT	Project #:	806103
Sample ID:	MW 04	Date Reported:	03-19-99
Laboratory Number:	E818	Date Sampled:	03-15-99
Chain of Custody:	6748	Date Received:	03-16-99
Sample Matrix:	Water	Date Analyzed:	03-19-99
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Analysis Needed:	TCLP metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	**0.0037**	**0.0001**	**5.0**
Barium	**0.0059**	**0.001**	**21**
Cadmium	**0.0010**	**0.0001**	**0.11**
Chromium	**0.0016**	**0.0001**	**0.60**
Lead	**ND**	**0.0001**	**0.75**
Mercury	**ND**	**0.0001**	**0.025**
Selenium	**0.0005**	**0.0001**	**5.7**
Silver	**ND**	**0.0001**	**0.14**

ND - Parameter not detected at the stated detection limit.

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, December 1996.

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA, December 1996.

Methods 7060, 7080, 7131, 7191, 7470, 7421, 7740, 7761 Analysis of Metals by GFAA and Cold Vapor Techniques, SW-846, USEPA. December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: **Welex Site, Farmington.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 1311
TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL ANALYSIS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	03-19-TCM QA/QC	Date Reported:	03-19-99
Laboratory Number:	E807	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Analysis Requested:	TCLP Metals	Date Analyzed:	03-19-99
Condition:	N/A	Date Extracted:	N/A

Blank & Duplicate Conc. (mg/L)	Instrument Blank	Method Blank	Detection Limit	Sample	Duplicate	% Diff.	Acceptance Range
Arsenic	ND	ND	0.0001	0.0175	0.0173	1.1%	0% - 30%
Barium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Cadmium	ND	ND	0.0001	0.0101	0.0100	1.0%	0% - 30%
Chromium	ND	ND	0.0001	ND	ND	0.0%	0% - 30%
Lead	ND	ND	0.0001	0.0096	0.0097	1.0%	0% - 30%
Mercury	ND	ND	0.0001	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.0001	ND	ND	0.0%	0% - 30%
Silver	ND	ND	0.0001	ND	ND	0.0%	0% - 30%

Spike Conc. (mg/L)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Arsenic	0.1000	0.0175	0.117	99.7%	80% - 120%
Barium	1.000	ND	0.998	99.8%	80% - 120%
Cadmium	0.0500	0.0101	0.0602	100.2%	80% - 120%
Chromium	0.0500	ND	0.0498	99.6%	80% - 120%
Lead	0.1000	0.0096	0.110	99.9%	80% - 120%
Mercury	0.0250	ND	0.0249	99.6%	80% - 120%
Selenium	0.1000	ND	0.0997	99.7%	80% - 120%
Silver	0.0500	ND	0.0499	99.8%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, Dec. 1996

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA, December 1996.

Methods 7060B, 7081, 7131A, 7191, 7470A, 7421, 7740, 7761 Analysis of Metals by GFAA and Cold Vapor Techniques, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples E807, E815 - E818 and E797 - E799.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client:	ENTACT	Project #:	806103
Sample ID:	MW 01	Date Reported:	03-17-99
Laboratory Number:	E815	Date Sampled:	03-15-99
Chain of Custody:	6748	Date Received:	03-16-99
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	03-17-99
Condition:	Cool & Intact		

Parameter	Analytical Result	Units		Units
pH	**7.03**	s.u.		
Conductivity @ 25° C	**1,430**	umhos/cm		
Total Dissolved Solids @ 180C	**715**	mg/L		
Total Dissolved Solids (Calc)	**711**	mg/L		
SAR	**1.1**	ratio		
Total Alkalinity as CaCO3	**134**	mg/L		
Total Hardness as CaCO3	**456**	mg/L		
Bicarbonate as HCO3	**134**	mg/L	2.20	meq/L
Carbonate as CO3	**<1**	mg/L	0.00	meq/L
Hydroxide as OH	**<1**	mg/L	0.00	meq/L
Nitrate Nitrogen	**2.0**	mg/L	0.03	meq/L
Nitrite Nitrogen	**0.005**	mg/L	0.00	meq/L
Chloride	**182**	mg/L	5.13	meq/L
Fluoride	**0.87**	mg/L	0.05	meq/L
Phosphate	**0.4**	mg/L	0.01	meq/L
Sulfate	**202**	mg/L	4.21	meq/L
Iron	**0.101**	mg/L		
Calcium	**182**	mg/L	9.08	meq/L
Magnesium	**<0.1**	mg/L	0.00	meq/L
Potassium	**4.5**	mg/L	0.12	meq/L
Sodium	**56.0**	mg/L	2.44	meq/L
Cations			11.63	meq/L
Anions			11.63	meq/L
Cation/Anion Difference			**0.05%**	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983. Water And Waste Water", 18th ed., 1992.

Comments: **Welex Site, Farmington.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client:	ENTACT	Project #:	806103
Sample ID:	MW 02	Date Reported:	03-17-99
Laboratory Number:	E816	Date Sampled:	03-15-99
Chain of Custody:	6748	Date Received:	03-16-99
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	03-17-99
Condition:	Cool & Intact		

Parameter	Analytical Result	Units		Units
pH	**7.17**	s.u.		
Conductivity @ 25° C	**1,255**	umhos/cm		
Total Dissolved Solids @ 180C	**625**	mg/L		
Total Dissolved Solids (Calc)	**615**	mg/L		
SAR	**1.0**	ratio		
Total Alkalinity as CaCO3	**270**	mg/L		
Total Hardness as CaCO3	**396**	mg/L		
Bicarbonate as HCO3	**270**	mg/L	4.43	meq/L
Carbonate as CO3	**<1**	mg/L	0.00	meq/L
Hydroxide as OH	**<1**	mg/L	0.00	meq/L
Nitrate Nitrogen	**2.0**	mg/L	0.03	meq/L
Nitrite Nitrogen	**0.005**	mg/L	0.00	meq/L
Chloride	**34.0**	mg/L	0.96	meq/L
Fluoride	**0.93**	mg/L	0.05	meq/L
Phosphate	**<0.1**	mg/L	0.00	meq/L
Sulfate	**210**	mg/L	4.37	meq/L
Iron	**0.001**	mg/L		
Calcium	**158**	mg/L	7.88	meq/L
Magnesium	**<0.1**	mg/L	0.00	meq/L
Potassium	**2.5**	mg/L	0.06	meq/L
Sodium	**44.0**	mg/L	1.91	meq/L
Cations			9.86	meq/L
Anions			9.84	meq/L
Cation/Anion Difference			**0.25%**	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983. Water And Waste Water", 18th ed., 1992.

Comments: **Welex Site, Farmington.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client:	ENTACT	Project #:	806103
Sample ID:	MW 03	Date Reported:	03-17-99
Laboratory Number:	E817	Date Sampled:	03-15-99
Chain of Custody:	6748	Date Received:	03-16-99
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	03-17-99
Condition:	Cool & Intact		

Parameter	Analytical Result	Units		Units
pH	**7.23**	s.u.		
Conductivity @ 25° C	**1,265**	umhos/cm		
Total Dissolved Solids @ 180C	**632**	mg/L		
Total Dissolved Solids (Calc)	**627**	mg/L		
SAR	**0.8**	ratio		
Total Alkalinity as CaCO3	**276**	mg/L		
Total Hardness as CaCO3	**416**	mg/L		
Bicarbonate as HCO3	**276**	mg/L	4.52	meq/L
Carbonate as CO3	**<1**	mg/L	0.00	meq/L
Hydroxide as OH	**<1**	mg/L	0.00	meq/L
Nitrate Nitrogen	**2.4**	mg/L	0.04	meq/L
Nitrite Nitrogen	**0.014**	mg/L	0.00	meq/L
Chloride	**32.0**	mg/L	0.90	meq/L
Fluoride	**0.96**	mg/L	0.05	meq/L
Phosphate	**0.8**	mg/L	0.03	meq/L
Sulfate	**216**	mg/L	4.50	meq/L
Iron	**0.025**	mg/L		
Calcium	**166**	mg/L	8.28	meq/L
Magnesium	**<0.1**	mg/L	0.00	meq/L
Potassium	**2.1**	mg/L	0.05	meq/L
Sodium	**39.0**	mg/L	1.70	meq/L
Cations			10.03	meq/L
Anions			10.04	meq/L
Cation/Anion Difference			**0.05%**	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983. Water And Waste Water", 18th ed., 1992.

Comments: **Welex Site, Farmington.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client:	ENTACT	Project #:	806103
Sample ID:	MW 04	Date Reported:	03-17-99
Laboratory Number:	E818	Date Sampled:	03-15-99
Chain of Custody:	6748	Date Received:	03-16-99
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	03-17-99
Condition:	Cool & Intact		

Parameter	Analytical Result	Units		Units
pH	**7.25**	s.u.		
Conductivity @ 25° C	**1,205**	umhos/cm		
Total Dissolved Solids @ 180C	**600**	mg/L		
Total Dissolved Solids (Calc)	**596**	mg/L		
SAR	**0.9**	ratio		
Total Alkalinity as CaCO3	**256**	mg/L		
Total Hardness as CaCO3	**392**	mg/L		
Bicarbonate as HCO3	**256**	mg/L	4.20	meq/L
Carbonate as CO3	**<1**	mg/L	0.00	meq/L
Hydroxide as OH	**<1**	mg/L	0.00	meq/L
Nitrate Nitrogen	**2.3**	mg/L	0.04	meq/L
Nitrite Nitrogen	**0.007**	mg/L	0.00	meq/L
Chloride	**36.0**	mg/L	1.02	meq/L
Fluoride	**0.91**	mg/L	0.05	meq/L
Phosphate	**0.2**	mg/L	0.01	meq/L
Sulfate	**207**	mg/L	4.31	meq/L
Iron	**0.021**	mg/L		
Calcium	**144**	mg/L	7.19	meq/L
Magnesium	**7.81**	mg/L	0.64	meq/L
Potassium	**2.6**	mg/L	0.07	meq/L
Sodium	**39.5**	mg/L	1.72	meq/L
Cations			9.61	meq/L
Anions			9.61	meq/L
Cation/Anion Difference			**0.00%**	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983. Water And Waste Water", 18th ed., 1992.

Comments: **Welex Site, Farmington.**

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CHAIN OF CUSTODY RECORD

6748

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
ENTACT	WELEX SITE, FARMINGTON	
Sampler: MARK WEBSTER	Client No. 806103	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	8021 BTEX	TCLP METALS	ANIONS CATIONS DISSOLVED SOLIDS				Remarks
MW 01	3-15-99	11:30	E815	WATER	6	✓	✓	✓				
MW 02	3-15-99	13:15	E816	WATER	6	✓	✓	✓				
MW 03	3-15-99	14:10	E817	WATER	6	✓	✓	✓				
MW 04	3-15-99	15:15	E818	WATER	6	✓	✓	✓				

	Date	Time		Date	Time
Relinquished by: (Signature) MARK WEBSTER	3-16-99	8:00	Received by: (Signature) Dennis L. Ayers	3.16.99	8:00
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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(505) 632-0615

Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

ENVIROTECH INC.
FARMINGTON, NM 5796 HIGHWAY 64
MONITOR WELL DATA

Date: 9-15-99 Project No: 806103

Project Name: ENTACT Chain of Custody No: _____

Location: WELEX SITE, FARMINGTON

Project Manager: HB Sampler: MW

MONITOR WELL DATA

WELL #	TIME	OVM ppm	pH	COND. µS	TEMP. °F	DEPTH TO WATER FT.	TOTAL DEPTH FT.	WATER COLUMN FT.	BAILED Water Gal.	PRODUCT Ft.	WATER LEVEL FT.
MW01	11:45	-	7.31	1200	64.7	38.61	44.32	5.71	2.9		
MW02	13:15	-	7.24	1200	62.8	38.82	44.01	5.19	2.6		
MW03	14:00	-	7.20	1200	63.8	38.61	44.91	6.30	3.2		
MW04	15:15	-	6.98	1200	62.1	38.28	44.05	5.77	2.9		

Notes: TOC = Top of Casing
Bailed = 3 well volumnes:
1.25" well = 0.19 gal/ft.
2.00" well = 0.49 gal/ft.
4.00" well = 1.96 gal/ft.
Note well diameter if not one of the above.

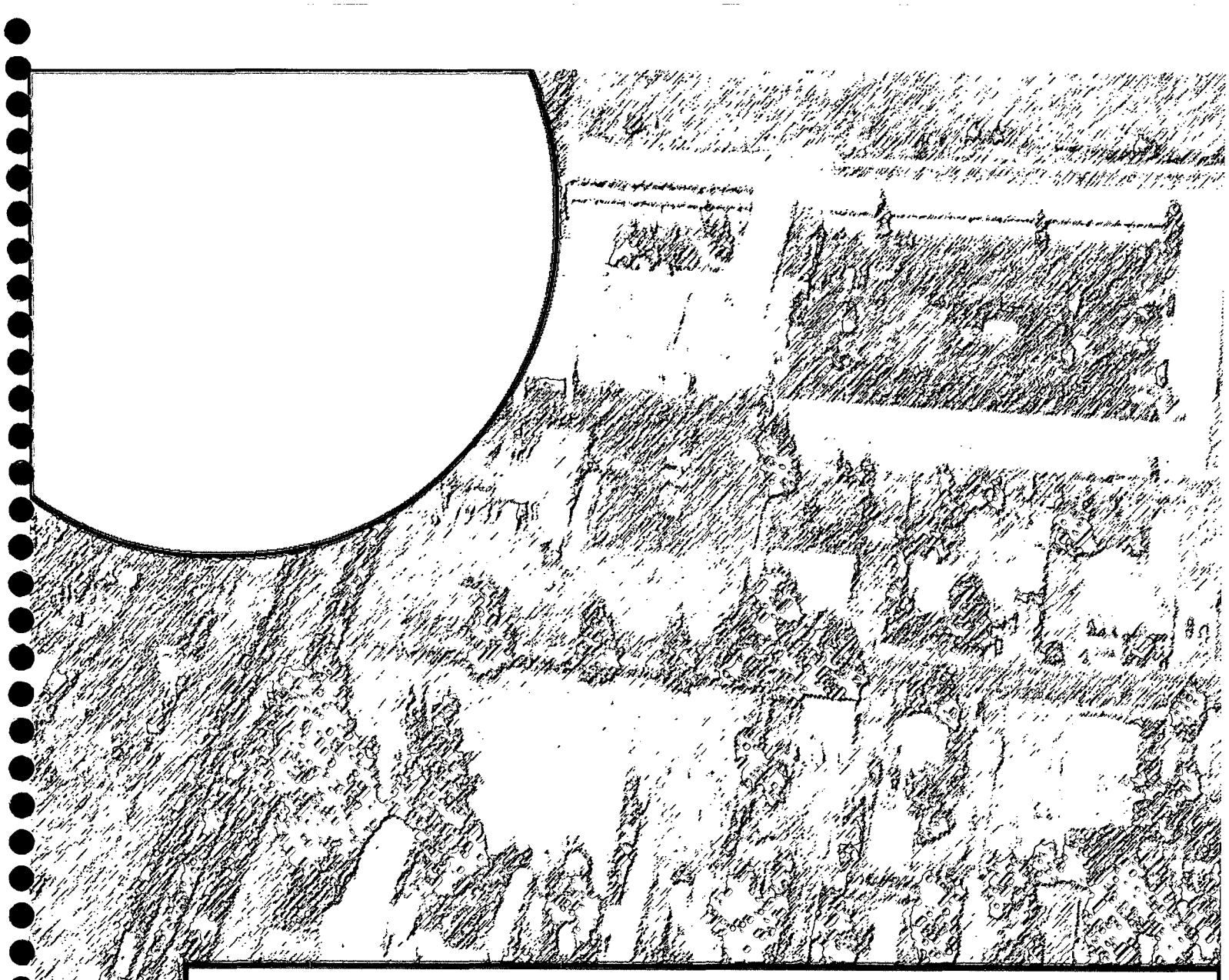
3-15-99

MW01 - CLOUDY GREY ; NO ODOR

MW02 - SLIGHTLY CLOUDY BROWN ; NO ODOR

MW03 - CLEAR TO VERY SLIGHTLY BROWN ; NO ODOR

MW04 - CLEAR ; NO ODOR



Analytical Results for June 1999

APPENDIX F

ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

June 30, 1999

Entact Inc.
Attn: Marty Cox
1616 Corporate Court, Ste #150
Irving, Texas 75038

Re: Sampling of four monitor wells at the Welex Site on East Bloomfield Highway, Farmington, New Mexico.

Dear Marty:

On June 23, 1999 four monitor wells were sampled by Environmental Scientist Christine Walters and Kathleen Murphy at the Welex Site on east Bloomfield Highway, Farmington, New Mexico. Water levels and total depth were recorded prior to purging the wells and the results are attached in the field notes. All wells were purged until a minimum of three well casing volumes had been removed using a D.C. Pump. All four well were monitored in the field for pH, conductivity, and temperature. Samples were collected and analysis run in Envirotech Inc. Laboratory for BTEX per USEPA Method 8021 and TPH per USEPA Method 8015 protocol.

Sampling field notes, Laboratory Analysis, and Laboratory QA/AC certificates are attached.

If you have questions or comment regarding this sampling event please feel free to contact us at 505-632-0615.

Sincerely,
Envirotech Inc.

Harlan M. Brown
Staff Geologist / Hydrogeologist
New Mexico Certified Scientist #083

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact	Project #:	806103
Sample ID:	MW - 1	Date Reported:	06-24-99
Chain of Custody:	7149	Date Sampled:	06-23-99
Laboratory Number:	F589	Date Received:	06-23-99
Sample Matrix:	Water	Date Analyzed:	06-24-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		0

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**2.1**	**1**	**0.2**
Toluene	**6.9**	**1**	**0.2**
Ethylbenzene	**4.6**	**1**	**0.2**
p,m-Xylene	**62.2**	**1**	**0.2**
o-Xylene	**26.0**	**1**	**0.1**
Total BTEX	**102**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**99 %**
	Bromofluorobenzene	**99 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Welex Site, Farmington.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact	Project #:	806103
Sample ID:	MW - 1 dupe	Date Reported:	06-24-99
Chain of Custody:	7149	Date Sampled:	06-23-99
Laboratory Number:	F590	Date Received:	06-23-99
Sample Matrix:	Water	Date Analyzed:	06-24-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		0

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**2.0**	**1**	**0.2**
Toluene	**6.8**	**1**	**0.2**
Ethylbenzene	**4.6**	**1**	**0.2**
p,m-Xylene	**62.1**	**1**	**0.2**
o-Xylene	**26.0**	**1**	**0.1**
Total BTEX	**102**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**96 %**
	Bromofluorobenzene	**96 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Welex Site, Farmington.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact	Project #:	806103
Sample ID:	MW - 2	Date Reported:	06-24-99
Chain of Custody:	7149	Date Sampled:	06-23-99
Laboratory Number:	F591	Date Received:	06-23-99
Sample Matrix:	Water	Date Analyzed:	06-24-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		0

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**ND**	**1**	**0.2**
Toluene	**3.5**	**1**	**0.2**
Ethylbenzene	**0.5**	**1**	**0.2**
p,m-Xylene	**0.4**	**1**	**0.2**
o-Xylene	**1.6**	**1**	**0.1**
Total BTEX	**6.0**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**98 %**
	Bromofluorobenzene	**98 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Welex Site, Farmington.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact	Project #:	806103
Sample ID:	MW - 3	Date Reported:	06-24-99
Chain of Custody:	7149	Date Sampled:	06-23-99
Laboratory Number:	F592	Date Received:	06-23-99
Sample Matrix:	Water	Date Analyzed:	06-24-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		0

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**1.8**	**1**	**0.2**
Toluene	**3.8**	**1**	**0.2**
Ethylbenzene	**0.6**	**1**	**0.2**
p,m-Xylene	**4.6**	**1**	**0.2**
o-Xylene	**2.0**	**1**	**0.1**
Total BTEX	**12.8**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**95 %**
	Bromofluorobenzene	**95 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Welex Site, Farmington.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact	Project #:	806103
Sample ID:	MW - 4	Date Reported:	06-24-99
Chain of Custody:	7149	Date Sampled:	06-23-99
Laboratory Number:	F593	Date Received:	06-23-99
Sample Matrix:	Water	Date Analyzed:	06-24-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		0

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**ND**	**1**	**0.2**
Toluene	**1.4**	**1**	**0.2**
Ethylbenzene	**0.4**	**1**	**0.2**
p,m-Xylene	**3.8**	**1**	**0.2**
o-Xylene	**1.7**	**1**	**0.1**
Total BTEX	**7.3**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**98 %**
	Bromofluorobenzene	**98 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Welex Site, Farmington.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS
QUALITY ASSURANCE REPORT

Client:	N/A	Project #:	N/A
Sample ID:	06-24-BTEX QA/QC	Date Reported:	06-24-99
Laboratory Number:	F586	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	06-24-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc.	Detect. Limit
Benzene	5.1692E-003	5.1858E-003	0.32%	ND	0.2
Toluene	5.2087E-003	5.2097E-003	0.02%	ND	0.2
Ethylbenzene	3.4516E-003	3.4557E-003	0.12%	ND	0.2
p,m-Xylene	4.0509E-003	4.0517E-003	0.02%	ND	0.2
o-Xylene	3.9685E-003	3.9804E-003	0.30%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	14.4	14.4	0.0%	0 - 30%
Toluene	82.2	82.9	0.9%	0 - 30%
Ethylbenzene	58.2	58.7	0.9%	0 - 30%
p,m-Xylene	288	300	4.3%	0 - 30%
o-Xylene	113	114	0.7%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	14.4	50.0	64.2	100%	39 - 150
Toluene	82.2	50.0	132	100%	46 - 148
Ethylbenzene	58.2	50.0	108	100%	32 - 160
p,m-Xylene	288	100.0	384	99%	46 - 148
o-Xylene	113	50.0	163	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

* - Administrative Limits set at 80 - 120%.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **QA/QC for samples F586 - F593.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact	Project #:	806103
Sample ID:	MW - 1	Date Reported:	06-24-99
Laboratory Number:	F589	Date Sampled:	06-23-99
Chain of Custody No:	7149	Date Received:	06-23-99
Sample Matrix:	Water	Date Extracted:	06-24-99
Preservative:	Cool	Date Analyzed:	06-24-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**0.9**	**0.1**
Total Petroleum Hydrocarbons	**0.9**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Welex Site, Farmington.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact	Project #:	806103
Sample ID:	MW - 1 dupe	Date Reported:	06-24-99
Laboratory Number:	F590	Date Sampled:	06-23-99
Chain of Custody No:	7149	Date Received:	06-23-99
Sample Matrix:	Water	Date Extracted:	06-24-99
Preservative:	Cool	Date Analyzed:	06-24-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**0.9**	**0.1**
Total Petroleum Hydrocarbons	**0.9**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Welex Site, Farmington.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact	Project #:	806103
Sample ID:	MW - 2	Date Reported:	06-24-99
Laboratory Number:	F591	Date Sampled:	06-23-99
Chain of Custody No:	7149	Date Received:	06-23-99
Sample Matrix:	Water	Date Extracted:	06-24-99
Preservative:	Cool	Date Analyzed:	06-24-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**0.9**	**0.1**
Total Petroleum Hydrocarbons	**0.9**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Welex Site, Farmington.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact	Project #:	806103
Sample ID:	MW - 3	Date Reported:	06-24-99
Laboratory Number:	F592	Date Sampled:	06-23-99
Chain of Custody No:	7149	Date Received:	06-23-99
Sample Matrix:	Water	Date Extracted:	06-24-99
Preservative:	Cool	Date Analyzed:	06-24-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**1.0**	**0.1**
Total Petroleum Hydrocarbons	**1.0**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Welex Site, Farmington.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact	Project #:	806103
Sample ID:	MW - 4	Date Reported:	06-24-99
Laboratory Number:	F593	Date Sampled:	06-23-99
Chain of Custody No:	7149	Date Received:	06-23-99
Sample Matrix:	Water	Date Extracted:	06-24-99
Preservative:	Cool	Date Analyzed:	06-24-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**0.4**	**0.1**
Total Petroleum Hydrocarbons	**0.4**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Welex Site, Farmington.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	06-24-TPH QA/QC	Date Reported:	06-24-99
Laboratory Number:	F589	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	06-24-99
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	06-17-99	7.7804E-002	7.7664E-002	**0.18%**	**0 - 15%**
Diesel Range C10 - C28	06-17-99	9.8381E-002	9.8224E-002	**0.16%**	**0 - 15%**

Blank Conc. (mg/L)	Concentration	Detection Limit
Gasoline Range C5 - C10	**ND**	**0.2**
Diesel Range C10 - C28	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

Duplicate Conc. (mg/L)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	**ND**	**ND**	**0.0%**	**0 - 30%**
Diesel Range C10 - C28	**0.9**	**0.9**	**0.0%**	**0 - 30%**

Spike Conc. (mg/L)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	**ND**	**25.0**	**25.0**	**100%**	**75 - 125%**
Diesel Range C10 - C28	**0.9**	**25.0**	**25.9**	**100%**	**75 - 125%**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples F589 - F593.**

Analyst

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CHAIN OF CUSTODY RECORD

7149

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
Entact	Welex Site, Farmington	
Sampler: CW / KM	Client No. 806103	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	8015 TPH	8021 BTEX					Remarks
MW-1	6.23.99	15:00	F589	Water	2	✓	✓					
MW-1 dup.	"	15:00	F590	"	2	✓	✓					
MW-2	"	13:30	F591	"	2	✓	✓					
MW-3	"	14:45	F592	"	2	✓	✓					
MW-4	"	15:15	F593	"	2	✓	✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Christine Waeter	6/23/99	16:00	Dawn L. Ojeen	6.23.99	1600
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

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Farmington, New Mexico 87401
(505) 632-0615

Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

ENVIROTECH INC.
FARMINGTON, NM 5796 HIGHWAY 64
MONITOR WELL DATA

Date: 6-23-99 Project No: 98061-03

Project Name: Entact Chain of Custody No: _____

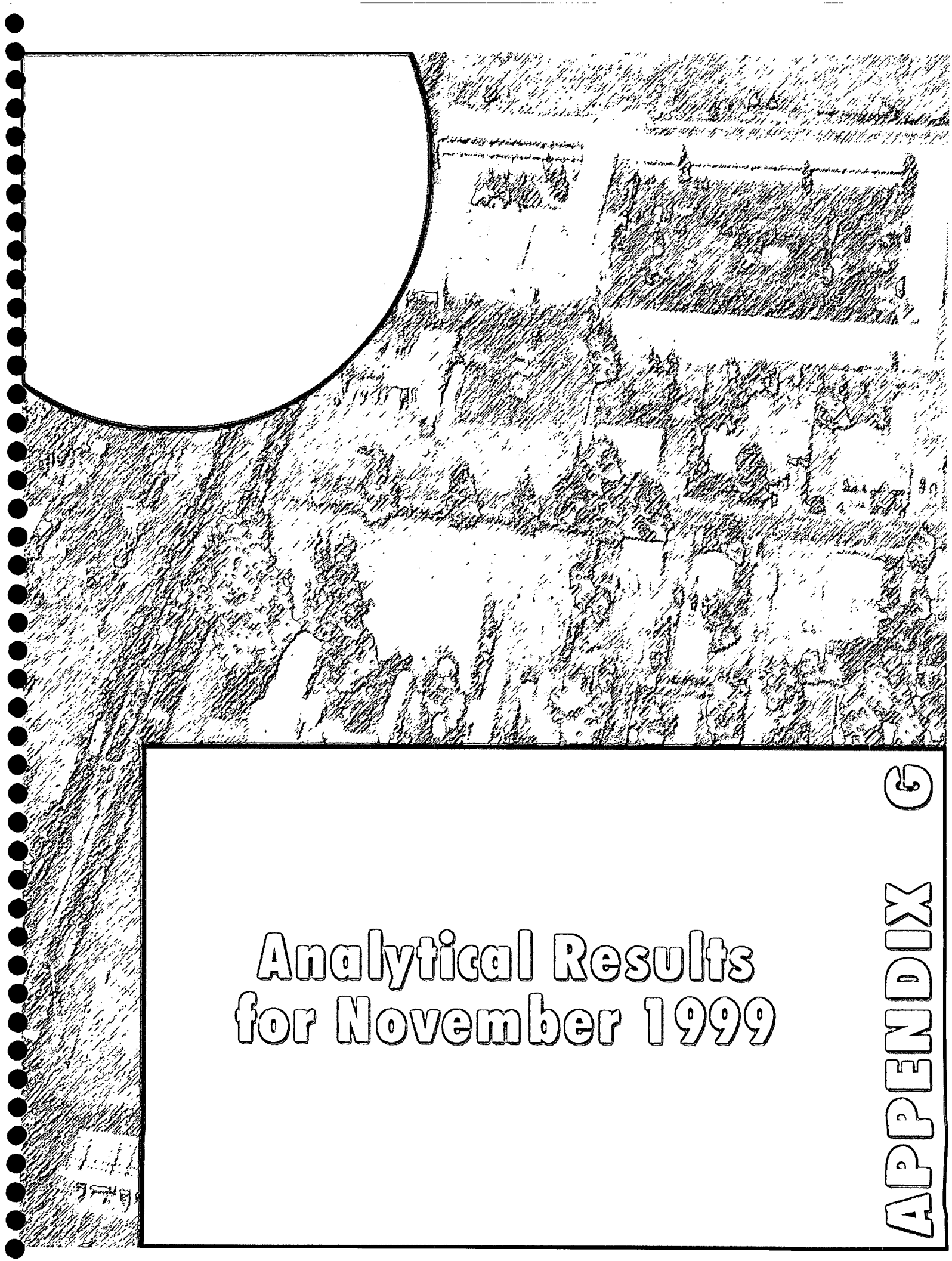
Location: Velex Site

Project Manager: HmB Sampler: CW

MONITOR WELL DATA

WELL #	TIME	OVM ppm	pH	COND. µS	TEMP. °F	DEPTH TO WATER FT.	TOTAL DEPTH FT.	WATER COLUMN FT.	BAILED Water Gal.	PRODUCT Ft.	WATER LEVEL FT.
MW01	15:00	—	8.17	700	22°	32.30	44.32	12	6		
MW02	13:30	—	6.53	600	24°	32.55	44.01	12	6		
MW03	14:45	—	7.45	600	32°	32.35	44.91	12	6		
MW04	15:15	—	8.22	500	21°	32.00	44.05	12	6		

Notes: TOC = Top of Casing
Bailed = 3 well volumnes:
1.25" well = 0.19 gal/ft.
2.00" well = 0.49 gal/ft.
4.00" well = 1.96 gal/ft.
Note well diameter if not one of the above.



APPENDIX G

Analytical Results for November 1999

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

November 8, 1999

Mr. Marty Cox
Entact - Wellex
1616 Corporate Court #150
Irving, Texas 75038

Project No.: 98061-03

Dear Mr. Cox,

Enclosed are the analytical results for the samples collected from the location designated as "Wellex Site". Five water samples were collected by Envirotech personnel on 11/02/99, and received by the Envirotech laboratory on 11/02/99 for Total Petroleum Hydrocarbons (TPH) per USEPA Method 8015, BTEX per USEPA 8021, pH, and Conductivity.

The samples were documented on Envirotech Chain of Custody No. 7549 and assigned Laboratory Nos. G357 (MW - 1), G358 (MW - 2), G359 (MW - 3), G360 (MW- 4) and G361 (MW - 1 Dupe) for tracking purposes.

The samples were analyzed 11/02/99 through 11/03/99 using USEPA or equivalent methods.

Should you have any questions or require additional information, please do not hesitate to contact us at (505) 632-0615.

Respectfully submitted,
Envirotech, Inc.

Christine M. Walters
Environmental Scientist

enc.

CMW/cmw

C:/files/labreports/entact.wpd

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact	Project #:	806103
Sample ID:	MW - 1	Date Reported:	11-07-99
Laboratory Number:	G357	Date Sampled:	11-02-99
Chain of Custody No:	7549	Date Received:	11-02-99
Sample Matrix:	Water	Date Extracted:	11-03-99
Preservative:	Cool	Date Analyzed:	11-03-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**0.2**	**0.1**
Total Petroleum Hydrocarbons	**0.2**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Wellex Site.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact	Project #:	806103
Sample ID:	MW - 2	Date Reported:	11-07-99
Laboratory Number:	G358	Date Sampled:	11-02-99
Chain of Custody No:	7549	Date Received:	11-02-99
Sample Matrix:	Water	Date Extracted:	11-03-99
Preservative:	Cool	Date Analyzed:	11-03-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**0.3**	**0.1**
Total Petroleum Hydrocarbons	**0.3**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Wellex Site.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact	Project #:	806103
Sample ID:	MW - 3	Date Reported:	11-07-99
Laboratory Number:	G359	Date Sampled:	11-02-99
Chain of Custody No:	7549	Date Received:	11-02-99
Sample Matrix:	Water	Date Extracted:	11-03-99
Preservative:	Cool	Date Analyzed:	11-03-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**0.3**	**0.1**
Total Petroleum Hydrocarbons	**0.3**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Wellex Site.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact	Project #:	806103
Sample ID:	MW - 4	Date Reported:	11-07-99
Laboratory Number:	G360	Date Sampled:	11-02-99
Chain of Custody No:	7549	Date Received:	11-02-99
Sample Matrix:	Water	Date Extracted:	11-03-99
Preservative:	Cool	Date Analyzed:	11-03-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**0.3**	**0.1**
Total Petroleum Hydrocarbons	**0.3**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Wellex Site.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact	Project #:	806103
Sample ID:	MW - 1 Dupe	Date Reported:	11-07-99
Laboratory Number:	G361	Date Sampled:	11-02-99
Chain of Custody No:	7549	Date Received:	11-02-99
Sample Matrix:	Water	Date Extracted:	11-03-99
Preservative:	Cool	Date Analyzed:	11-03-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**0.2**	**0.1**
Total Petroleum Hydrocarbons	**0.2**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Wellex Site.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact	Project #:	806103
Sample ID:	MW - 1	Date Reported:	11-07-99
Chain of Custody:	7549	Date Sampled:	11-02-99
Laboratory Number:	G357	Date Received:	11-02-99
Sample Matrix:	Water	Date Analyzed:	11-03-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**0.3**	**1**	**0.2**
Toluene	**2.8**	**1**	**0.2**
Ethylbenzene	**ND**	**1**	**0.2**
p,m-Xylene	**0.7**	**1**	**0.2**
o-Xylene	**ND**	**1**	**0.1**
Total BTEX	**3.8**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**96 %**
	Bromofluorobenzene	**96 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Wellex Site.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact	Project #:	806103
Sample ID:	MW - 2	Date Reported:	11-07-99
Chain of Custody:	7549	Date Sampled:	11-02-99
Laboratory Number:	G358	Date Received:	11-02-99
Sample Matrix:	Water	Date Analyzed:	11-03-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**0.3**	**1**	**0.2**
Toluene	**3.9**	**1**	**0.2**
Ethylbenzene	**ND**	**1**	**0.2**
p,m-Xylene	**0.8**	**1**	**0.2**
o-Xylene	**ND**	**1**	**0.1**
Total BTEX	**5.0**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**97 %**
	Bromofluorobenzene	**97 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Wellex Site.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact	Project #:	806103
Sample ID:	MW - 3	Date Reported:	11-07-99
Chain of Custody:	7549	Date Sampled:	11-02-99
Laboratory Number:	G359	Date Received:	11-02-99
Sample Matrix:	Water	Date Analyzed:	11-03-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**0.3**	**1**	**0.2**
Toluene	**1.3**	**1**	**0.2**
Ethylbenzene	**ND**	**1**	**0.2**
p,m-Xylene	**0.6**	**1**	**0.2**
o-Xylene	**ND**	**1**	**0.1**
Total BTEX	**2.2**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**99 %**
	Bromofluorobenzene	**99 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Wellex Site.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact	Project #:	806103
Sample ID:	MW - 4	Date Reported:	11-07-99
Chain of Custody:	7549	Date Sampled:	11-02-99
Laboratory Number:	G360	Date Received:	11-02-99
Sample Matrix:	Water	Date Analyzed:	11-03-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**0.3**	**1**	**0.2**
Toluene	**2.2**	**1**	**0.2**
Ethylbenzene	**ND**	**1**	**0.2**
p,m-Xylene	**ND**	**1**	**0.2**
o-Xylene	**0.2**	**1**	**0.1**
Total BTEX	**2.7**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**96 %**
	Bromofluorobenzene	**96 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Wellex Site.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact	Project #:	806103
Sample ID:	MW - 1 Dupe	Date Reported:	11-07-99
Chain of Custody:	7549	Date Sampled:	11-02-99
Laboratory Number:	G361	Date Received:	11-02-99
Sample Matrix:	Water	Date Analyzed:	11-03-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**0.3**	**1**	**0.2**
Toluene	**2.7**	**1**	**0.2**
Ethylbenzene	**ND**	**1**	**0.2**
p,m-Xylene	**0.7**	**1**	**0.2**
o-Xylene	**ND**	**1**	**0.1**
Total BTEX	**3.7**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**98 %**
	Bromofluorobenzene	**98 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Wellex Site.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS
QUALITY ASSURANCE REPORT

Client:	N/A	Project #:	N/A
Sample ID:	11-03-BTEX QA/QC	Date Reported:	11-07-99
Laboratory Number:	G357	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	11-03-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc.	Detect. Limit
Benzene	1.5053E-001	1.5102E-001	0.32%	ND	0.2
Toluene	3.0995E-001	3.1001E-001	0.02%	ND	0.2
Ethylbenzene	8.9920E-002	9.0028E-002	0.12%	ND	0.2
p,m-Xylene	2.7841E-001	2.7847E-001	0.02%	ND	0.2
o-Xylene	2.6467E-002	2.6546E-002	0.30%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	0.3	0.3	0.0%	0 - 30%
Toluene	2.8	2.9	3.6%	0 - 30%
Ethylbenzene	ND	ND	0.0%	0 - 30%
p,m-Xylene	0.7	0.7	0.0%	0 - 30%
o-Xylene	ND	ND	0.0%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	0.3	50.0	50.3	100%	39 - 150
Toluene	2.8	50.0	53.0	100%	46 - 148
Ethylbenzene	ND	50.0	50.0	100%	32 - 160
p,m-Xylene	0.7	100.0	101	100%	46 - 148
o-Xylene	ND	50.0	50.0	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

* - Administrative level set at 80 - 120.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **QA/QC for samples G357 - G361.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

WATER ANALYSIS

Client:	Entact	Project #:	806103
Sample ID:	MW - 1	Date Reported:	11-07-99
Laboratory Number:	G357	Date Sampled:	11-02-99
Chain of Custody:	7549	Date Received:	11-02-99
Sample Matrix:	Water	Date Analyzed:	11-02-99
Preservative:	Cool		
Condition:	Cool & Intact		

Parameter	Analytical Result	Units
pH	**6.79**	s.u.
Conductivity @ 25° C	**601**	umhos/cm

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.

Comments: **Wellex Site.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

WATER ANALYSIS

Client:	Entact	Project #:	806103
Sample ID:	MW - 2	Date Reported:	11-07-99
Laboratory Number:	G358	Date Sampled:	11-02-99
Chain of Custody:	7549	Date Received:	11-02-99
Sample Matrix:	Water	Date Analyzed:	11-02-99
Preservative:	Cool		
Condition:	Cool & Intact		

Parameter	Analytical Result	Units
pH	**6.85**	s.u.
Conductivity @ 25° C	**688**	umhos/cm

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.

Comments: **Wellex Site.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

WATER ANALYSIS

Client:	Entact	Project #:	806103
Sample ID:	MW - 3	Date Reported:	11-07-99
Laboratory Number:	G359	Date Sampled:	11-02-99
Chain of Custody:	7549	Date Received:	11-02-99
Sample Matrix:	Water	Date Analyzed:	11-02-99
Preservative:	Cool		
Condition:	Cool & Intact		

Parameter	Analytical Result	Units
pH	**6.93**	s.u.
Conductivity @ 25° C	**640**	umhos/cm

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.

Comments: **Wellex Site.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

WATER ANALYSIS

Client:	Entact	Project #:	806103
Sample ID:	MW - 4	Date Reported:	11-07-99
Laboratory Number:	G360	Date Sampled:	11-02-99
Chain of Custody:	7549	Date Received:	11-02-99
Sample Matrix:	Water	Date Analyzed:	11-02-99
Preservative:	Cool		
Condition:	Cool & Intact		

Parameter	Analytical Result	Units
pH	**6.88**	s.u.
Conductivity @ 25° C	**744**	umhos/cm

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.

Comments: **Wellex Site.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

WATER ANALYSIS

Client:	Entact	Project #:	806103
Sample ID:	MW - 1 Dupe	Date Reported:	11-07-99
Laboratory Number:	G361	Date Sampled:	11-02-99
Chain of Custody:	7549	Date Received:	11-02-99
Sample Matrix:	Water	Date Analyzed:	11-02-99
Preservative:	Cool		
Condition:	Cool & Intact		

Parameter	Analytical Result	Units
pH	**6.84**	s.u.
Conductivity @ 25° C	**627**	umhos/cm

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.

Comments: **Wellex Site.**

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CHAIN OF CUSTODY RECORD

7549

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
Entact	Weller Site	
Sampler: Kathleen Murphy	Client No. 98061-03	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	8015 TPH	8021 BTEX	PH Cond.				Remarks
MW-1	11-2-99	1310	G357	H_2O	~~3~~ 3	✓	✓	✓				
MW-2	11-2-99	1325	G358		3	✓	✓	✓				
MW-3	11-2-99	1250	G359		3	✓	✓	✓				
MW-4	11-2-99	1233	G360		3	✓	✓	✓				
MW-1 Dupe	11-2-99	1310	G361		3	✓	✓	✓				
					15							

	Date	Time		Date	Time
Relinquished by: (Signature)	11-2-99	1400	Received by: (Signature) Christine Waeta	11-2-99	14:00
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

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Farmington, New Mexico 87401
(505) 632-0615

Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

ENVIROTECH INC.
FARMINGTON, NM 5796 HIGHWAY 64
MONITOR WELL DATA

Date: 11-2-99 Project No: 98061

Project Name: Wellex Site Chain of Custody No: _____

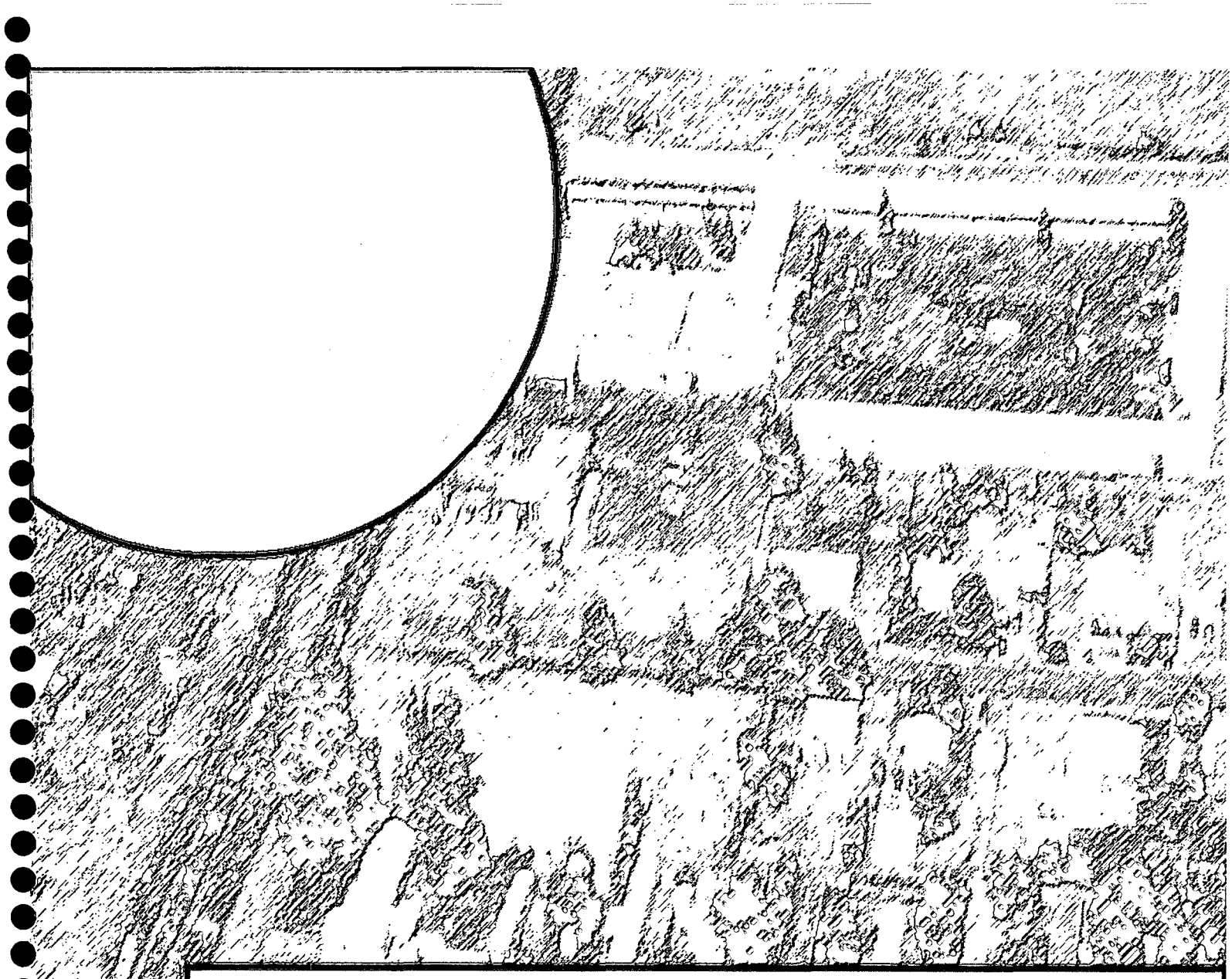
Location: Farmington

Project Manager: HMB Sampler: KM/SB

MONITOR WELL DATA

WELL #	TIME	OVM ppm	pH	COND. µS	TEMP. °C	DEPTH TO WATER FT.	TOTAL DEPTH FT.	WATER COLUMN FT.	BAILED Water Gal.	PRODUCT Ft.	WATER LEVEL FT.
MW-4	12:33	—			16	31.80	44	13	8		
MW-3	12:50				16	32.15	44	12	8		
MW-1	1310				16	32.18	45	13	8		
MW-2	1325				16	32.45	44	12	8		
MW-1	Dupe	1310									

Notes: TOC = Top of Casing
Bailed = 3 well volumnes:
1.25" well = 0.19 gal/ft.
2.00" well = 0.49 gal/ft.
4.00" well = 1.96 gal/ft.
Note well diameter if not one of the above.



Analytical Results for February 2000

APPENDIX H

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

February 4, 2000

Mr. Marty Cox
Entact - Halliburton Farmington
1616 Corporate Court #150
Irving, Texas 75038

Client No.: 980610
Job No.: 806103

Dear Mr. Cox,

Enclosed are the analytical results for the samples collected from the location designated as "Farmington NM". Five water samples were collected by Entact - Halliburton personnel on 2/01/00, and received by the Envirotech laboratory on 2/01/00 for Total Petroleum Hydrocarbons (TPH) per USEPA Method 8015 and for BTEX per USEPA Method 8021.

The samples were documented on Envirotech Chain of Custody No. 7650 and assigned Laboratory Nos. G767 (MW - 01), G768 (MW-02), G769 (MW-03), G770 (MW-04) and G771 (MWD-03) for tracking purposes.

The samples were analyzed 2/02/00 using USEPA or equivalent methods.

Should you have any questions or require additional information, please do not hesitate to contact us at (505) 632-0615.

Respectfully submitted,
Envirotech, Inc.

Christine M. Walters
Laboratory Coordinator / Environmental Scientist

enc.

CMW/cmw

C:/files/labreports/entact.wpd

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact - Halliburton	Project #:	806103
Sample ID:	MW - 01	Date Reported:	02-02-00
Chain of Custody:	7650	Date Sampled:	02-01-00
Laboratory Number:	G767	Date Received:	02-01-00
Sample Matrix:	Water	Date Analyzed:	02-02-00
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**2.9**	**1**	**0.2**
Toluene	**3.1**	**1**	**0.2**
Ethylbenzene	**7.6**	**1**	**0.2**
p,m-Xylene	**7.6**	**1**	**0.2**
o-Xylene	**2.9**	**1**	**0.1**
Total Xylene	**10.5**		
Total BTEX	**24.1**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**100 %**
	Bromofluorobenzene	**100 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Farmington, NM.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact - Halliburton	Project #:	806103
Sample ID:	MW - 02	Date Reported:	02-02-00
Chain of Custody:	7650	Date Sampled:	02-01-00
Laboratory Number:	G768	Date Received:	02-01-00
Sample Matrix:	Water	Date Analyzed:	02-02-00
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**3.6**	**1**	**0.2**
Toluene	**3.7**	**1**	**0.2**
Ethylbenzene	**4.9**	**1**	**0.2**
p,m-Xylene	**8.1**	**1**	**0.2**
o-Xylene	**2.6**	**1**	**0.1**
Total Xylene	**10.7**		
Total BTEX	**22.9**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**100 %**
	Bromofluorobenzene	**100 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Farmington, NM.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact - Halliburton	Project #:	806103
Sample ID:	MW - 03	Date Reported:	02-02-00
Chain of Custody:	7650	Date Sampled:	02-01-00
Laboratory Number:	G769	Date Received:	02-01-00
Sample Matrix:	Water	Date Analyzed:	02-02-00
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**2.9**	**1**	**0.2**
Toluene	**1.7**	**1**	**0.2**
Ethylbenzene	**4.7**	**1**	**0.2**
p,m-Xylene	**3.6**	**1**	**0.2**
o-Xylene	**0.9**	**1**	**0.1**
Total Xylene	**4.5**		
Total BTEX	**13.8**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**96 %**
	Bromofluorobenzene	**96 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Farmington, NM.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact - Halliburton	Project #:	806103
Sample ID:	MW - 04	Date Reported:	02-02-00
Chain of Custody:	7650	Date Sampled:	02-01-00
Laboratory Number:	G770	Date Received:	02-01-00
Sample Matrix:	Water	Date Analyzed:	02-02-00
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**2.9**	**1**	**0.2**
Toluene	**2.5**	**1**	**0.2**
Ethylbenzene	**5.0**	**1**	**0.2**
p,m-Xylene	**2.5**	**1**	**0.2**
o-Xylene	**0.6**	**1**	**0.1**
Total Xylene	**3.1**		
Total BTEX	**13.5**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**98 %**
	Bromofluorobenzene	**98 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Farmington, NM.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Entact - Halliburton	Project #:	806103
Sample ID:	MWD - 03	Date Reported:	02-02-00
Chain of Custody:	7650	Date Sampled:	02-01-00
Laboratory Number:	G771	Date Received:	02-01-00
Sample Matrix:	Water	Date Analyzed:	02-02-00
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**2.9**	**1**	**0.2**
Toluene	**1.8**	**1**	**0.2**
Ethylbenzene	**4.7**	**1**	**0.2**
p,m-Xylene	**3.7**	**1**	**0.2**
o-Xylene	**0.8**	**1**	**0.1**
Total Xylene	**4.5**		
Total BTEX	**13.9**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**100 %**
	Bromofluorobenzene	**100 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **Farmington, NM.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS
QUALITY ASSURANCE REPORT

Client:	N/A	Project #:	N/A
Sample ID:	02-02-BTEX QA/QC	Date Reported:	02-02-00
Laboratory Number:	G767	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-02-00
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	1.7821E-001	1.7878E-001	0.32%	ND	0.2
Toluene	9.8372E-002	9.8391E-002	0.02%	ND	0.2
Ethylbenzene	7.1711E-002	7.1797E-002	0.12%	ND	0.2
p,m-Xylene	8.7662E-002	8.7680E-002	0.02%	ND	0.2
o-Xylene	6.9553E-002	6.9762E-002	0.30%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	2.9	2.8	3.4%	0 - 30%
Toluene	3.1	3.1	0.0%	0 - 30%
Ethylbenzene	7.6	7.3	3.9%	0 - 30%
p,m-Xylene	7.6	7.5	1.3%	0 - 30%
o-Xylene	2.9	2.8	3.4%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	2.9	50.0	52.9	100%	39 - 150
Toluene	3.1	50.0	53.1	100%	46 - 148
Ethylbenzene	7.6	50.0	57.7	100%	32 - 160
p,m-Xylene	7.6	100.0	107.7	100%	46 - 148
o-Xylene	2.9	50.0	53.0	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **QA/QC for sample G767 - G771.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact - Halliburton	Project #:	806103
Sample ID:	MW - 01	Date Reported:	02-02-00
Laboratory Number:	G767	Date Sampled:	02-01-00
Chain of Custody No:	7650	Date Received:	02-01-00
Sample Matrix:	Water	Date Extracted:	02-02-00
Preservative:	Cool	Date Analyzed:	02-02-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Farmington, NM.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact - Halliburton	Project #:	806103
Sample ID:	MW - 02	Date Reported:	02-02-00
Laboratory Number:	G768	Date Sampled:	02-01-00
Chain of Custody No:	7650	Date Received:	02-01-00
Sample Matrix:	Water	Date Extracted:	02-02-00
Preservative:	Cool	Date Analyzed:	02-02-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Farmington, NM.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact - Halliburton	Project #:	806103
Sample ID:	MW - 03	Date Reported:	02-02-00
Laboratory Number:	G769	Date Sampled:	02-01-00
Chain of Custody No:	7650	Date Received:	02-01-00
Sample Matrix:	Water	Date Extracted:	02-02-00
Preservative:	Cool	Date Analyzed:	02-02-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Farmington, NM.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact - Halliburton	Project #:	806103
Sample ID:	MW - 04	Date Reported:	02-02-00
Laboratory Number:	G770	Date Sampled:	02-01-00
Chain of Custody No:	7650	Date Received:	02-01-00
Sample Matrix:	Water	Date Extracted:	02-02-00
Preservative:	Cool	Date Analyzed:	02-02-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Farmington, NM.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Entact - Halliburton	Project #:	806103
Sample ID:	MWD - 03	Date Reported:	02-02-00
Laboratory Number:	G771	Date Sampled:	02-01-00
Chain of Custody No:	7650	Date Received:	02-01-00
Sample Matrix:	Water	Date Extracted:	02-02-00
Preservative:	Cool	Date Analyzed:	02-02-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Farmington, NM.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	02-02-TPH QA/QC	Date Reported:	02-02-00
Laboratory Number:	G767	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-02-00
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	12-06-99	2.9455E-002	2.9402E-002	**0.18%**	**0 - 15%**
Diesel Range C10 - C28	12-06-99	2.9706E-002	2.9658E-002	**0.16%**	**0 - 15%**

Blank Conc. (mg/L)	Concentration	Detection Limit
Gasoline Range C5 - C10	**ND**	**0.2**
Diesel Range C10 - C28	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

Duplicate Conc. (mg/L)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	**ND**	**ND**	**0.0%**	**0 - 30%**
Diesel Range C10 - C28	**ND**	**ND**	**0.0%**	**0 - 30%**

Spike Conc. (mg/L)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	**ND**	**25.0**	**25.0**	**100%**	**75 - 125%**
Diesel Range C10 - C28	**ND**	**25.0**	**25.0**	**100%**	**75 - 125%**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples G767 - G771.**

Analyst

Review

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CHAIN OF CUSTODY RECORD

7650

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
HALLIBURTON - ENTACT	FARMINGTON, NM	
Sampler: MARTY COX	Client No. ~~D543~~ 806103	

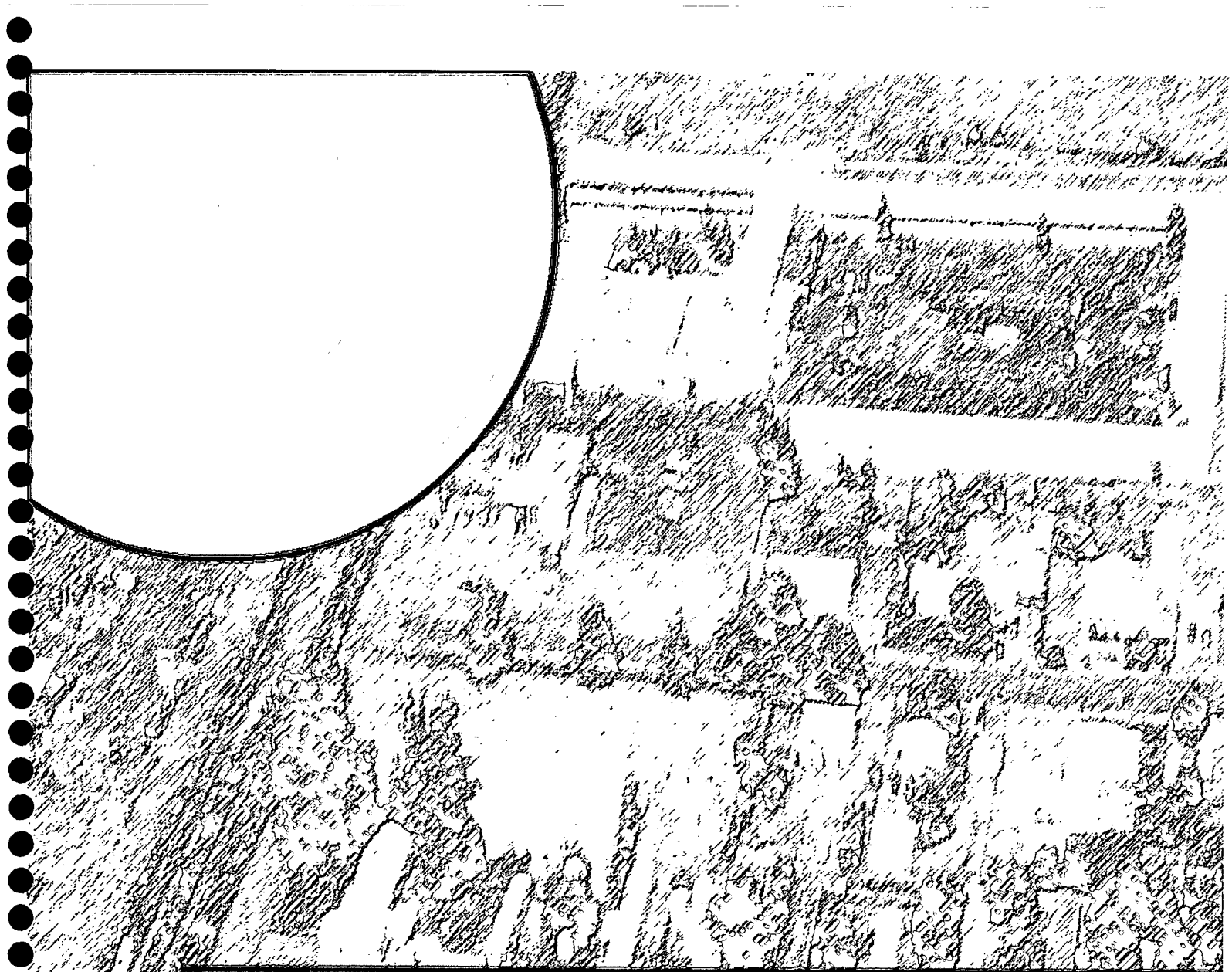
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX	TPH					Remarks
MW-01	2/1	1528	G767	WATER	2	✓	✓					
MW-02	2/1	1532	G768	WATER	2	✓	✓					
MW-03	2/1	1540	G769	WATER	2	✓	✓					
MW-04	2/1	1548	G770	WATER	2	✓	✓					
MWD-03	2/1	1543	G771	WATER	2	✓	✓					

	Date	Time		Date	Time
Relinquished by: (Signature) Marty Cox	2/1/00	1630	Received by: (Signature) Jean L. Quiroz	2-1-00	1630
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

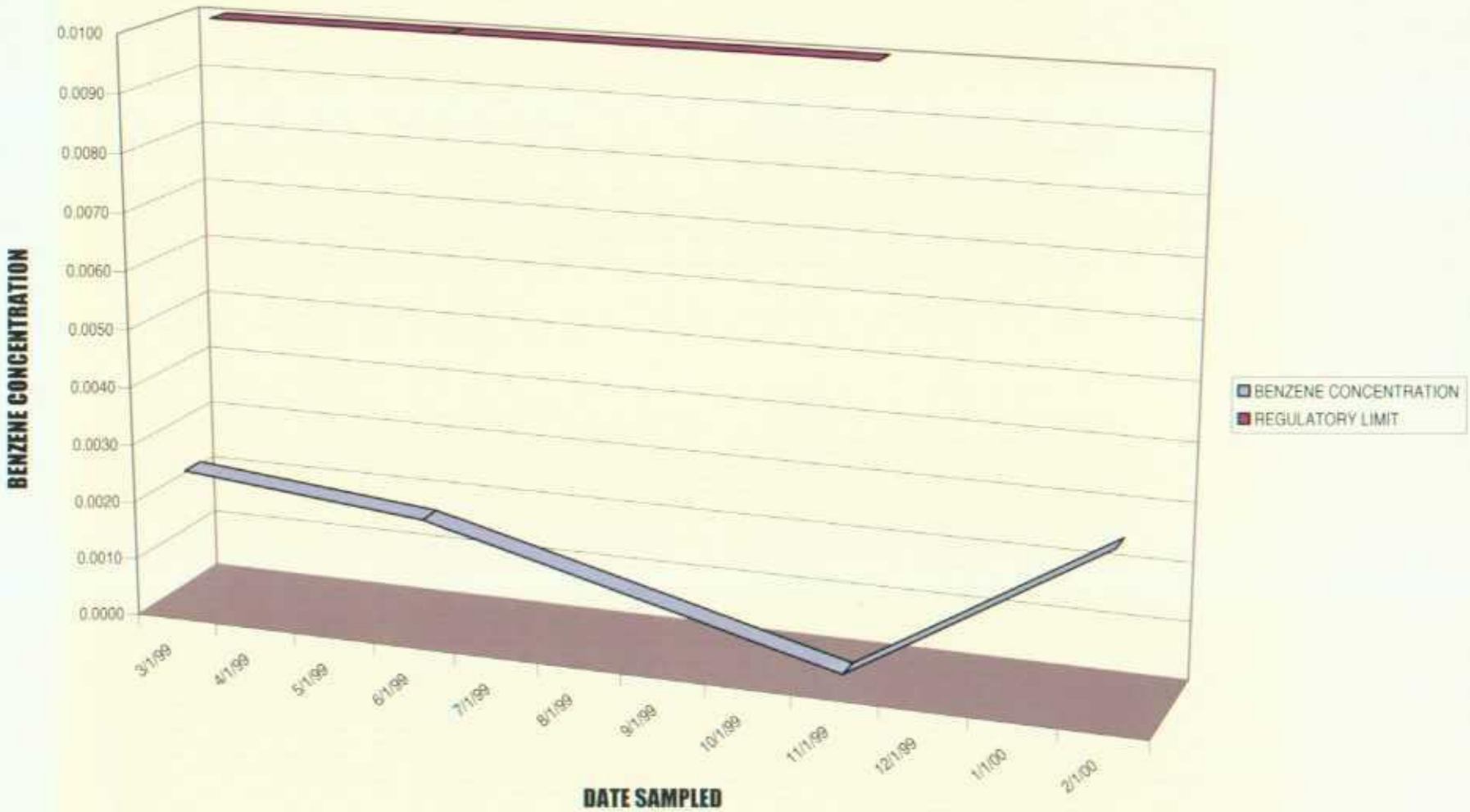
Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		



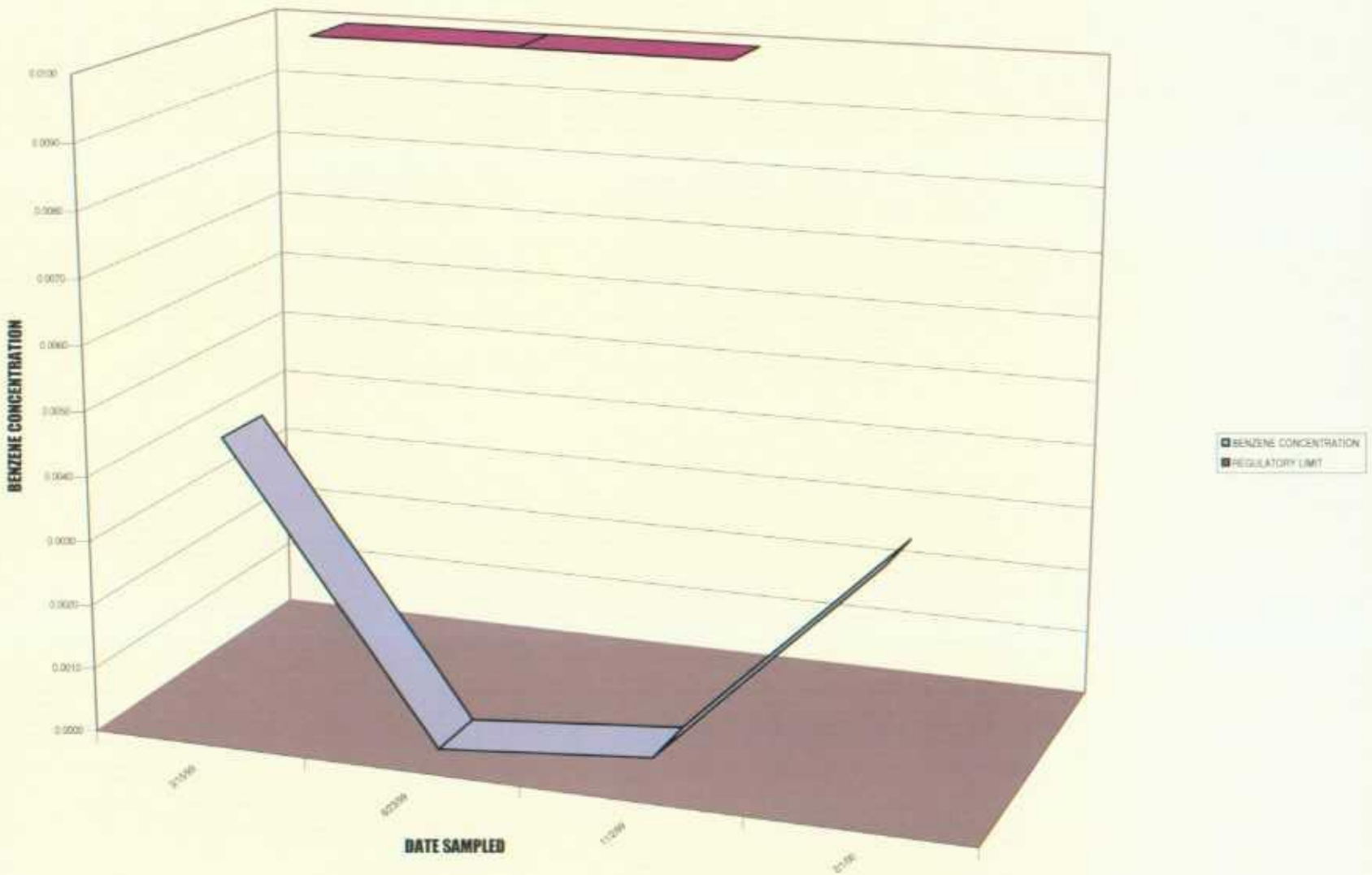
APPENDIX I

Cummulative Concentration Graphs

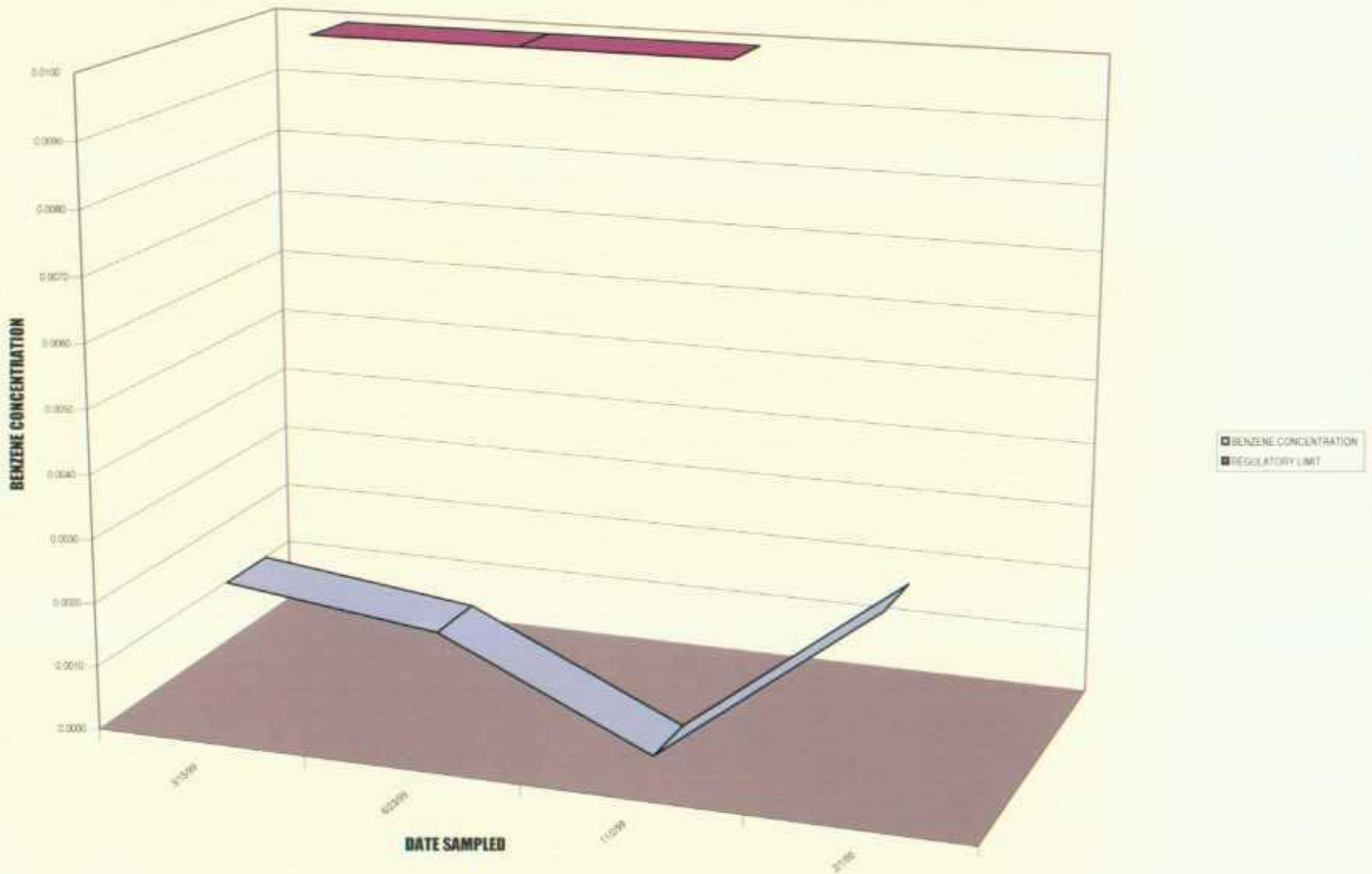
GRAPHICAL REPRESENTATION OF MW-01 BENZENE CONCENTRATIONS IN GROUNDWATER



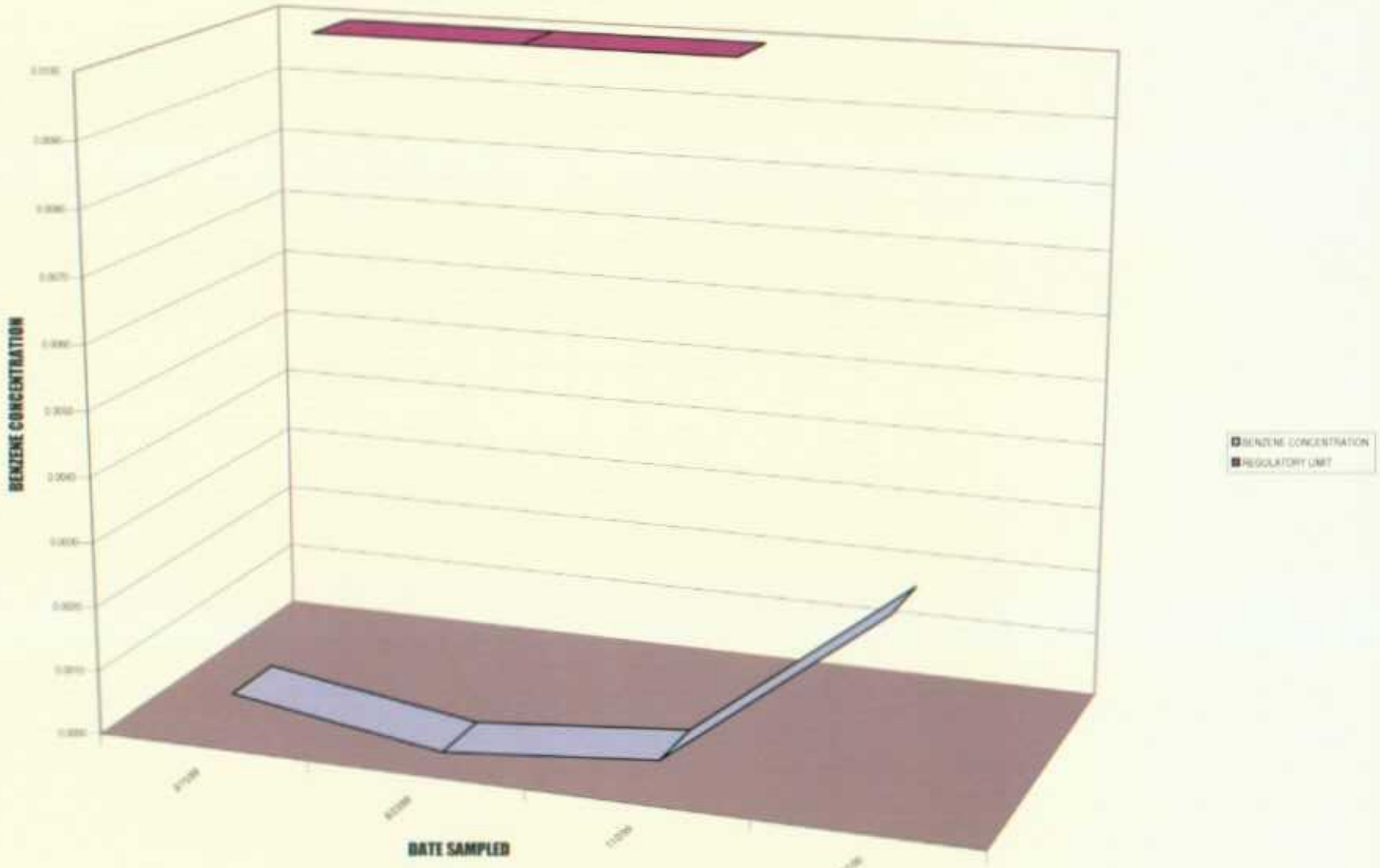
GRAPHICAL REPRESENTATION OF MW-02 BENZENE CONCENTRATIONS IN GROUNDWAER

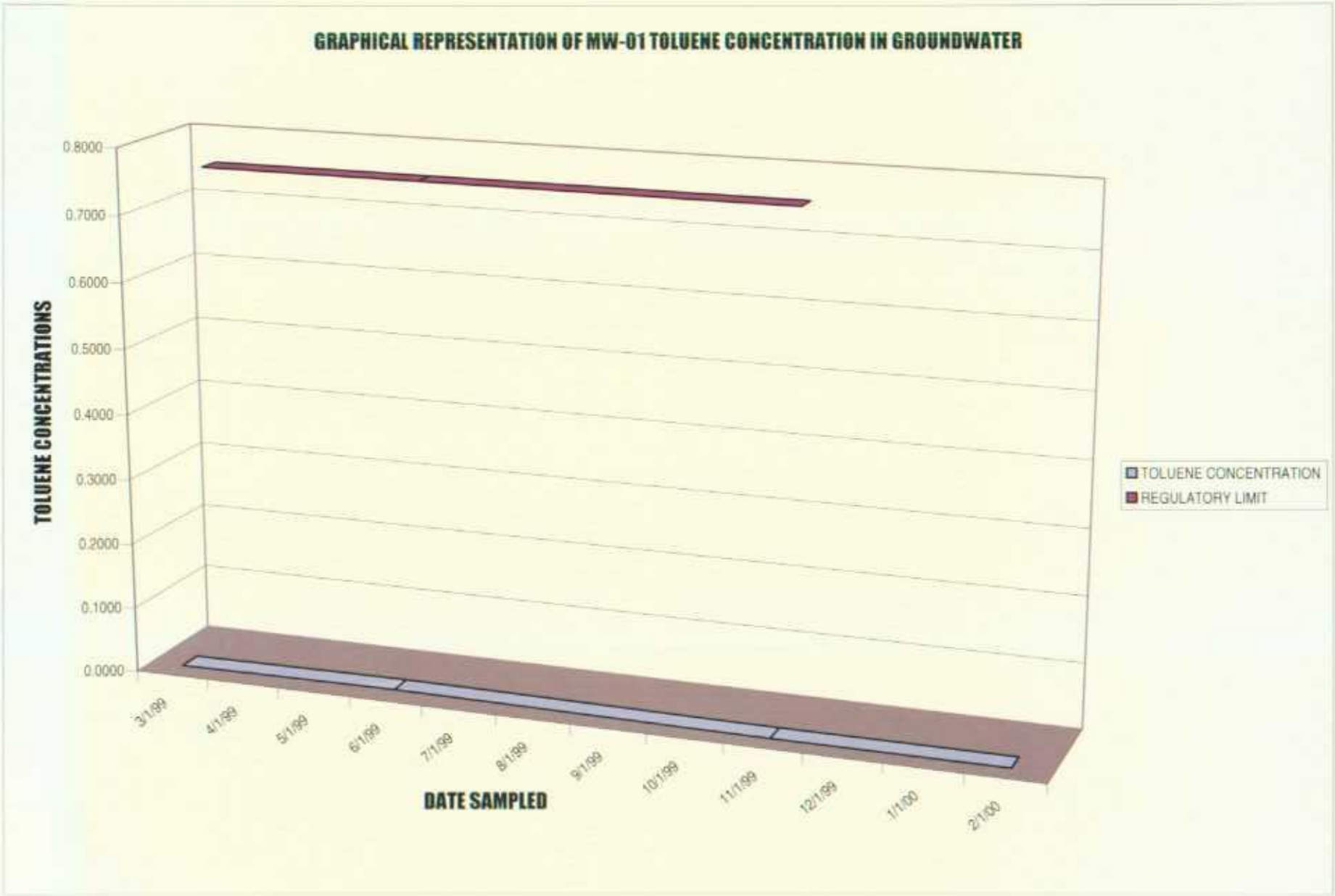


GRAPHICAL REPRESENTATION OF MW-03 BENZENE CONCENTRATIONS IN GROUNDWATER

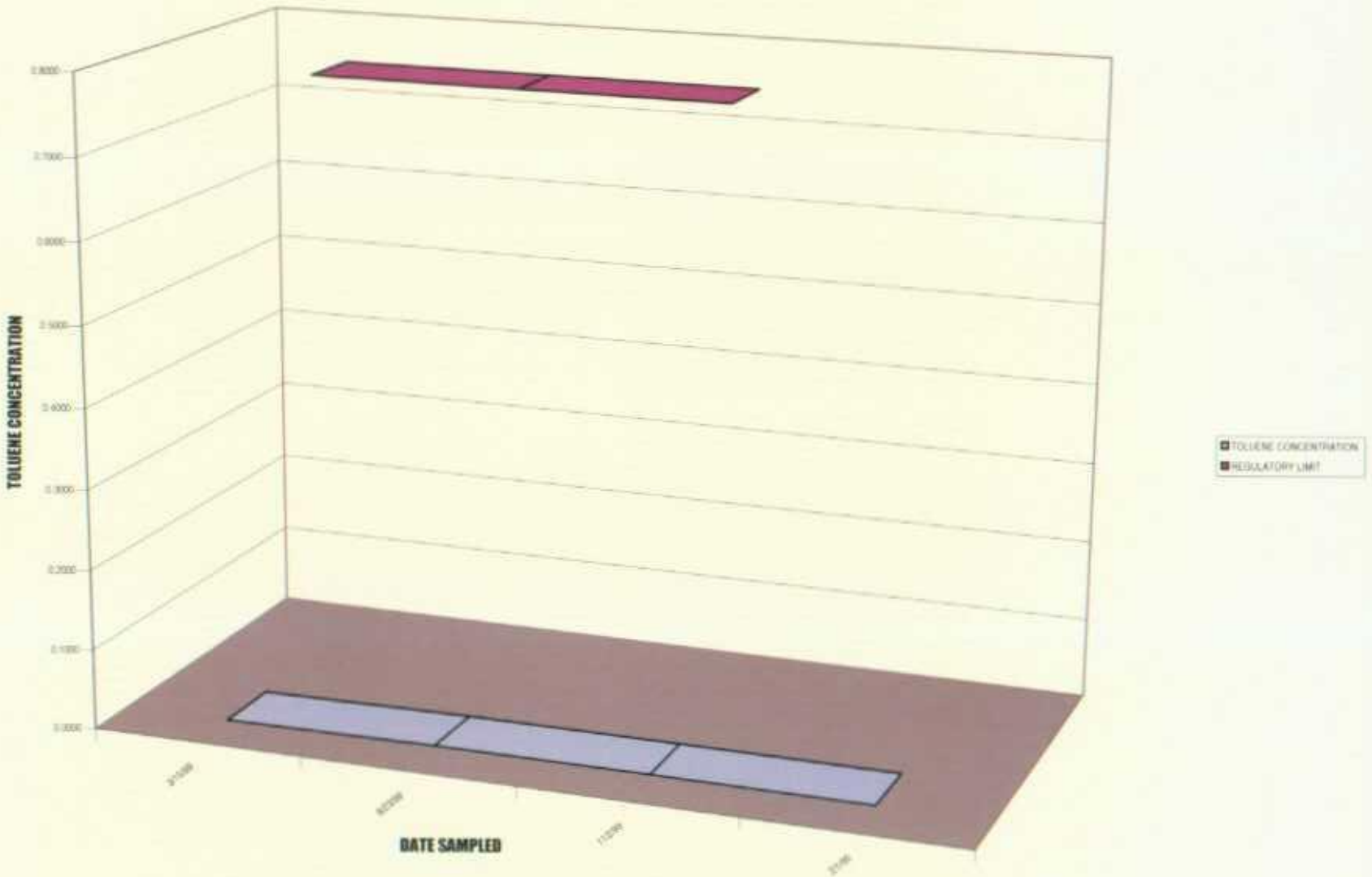


GRAPHICAL REPRESENTATION OF MW-04 BENZENE CONCENTRATIONS IN GROUNDWATER

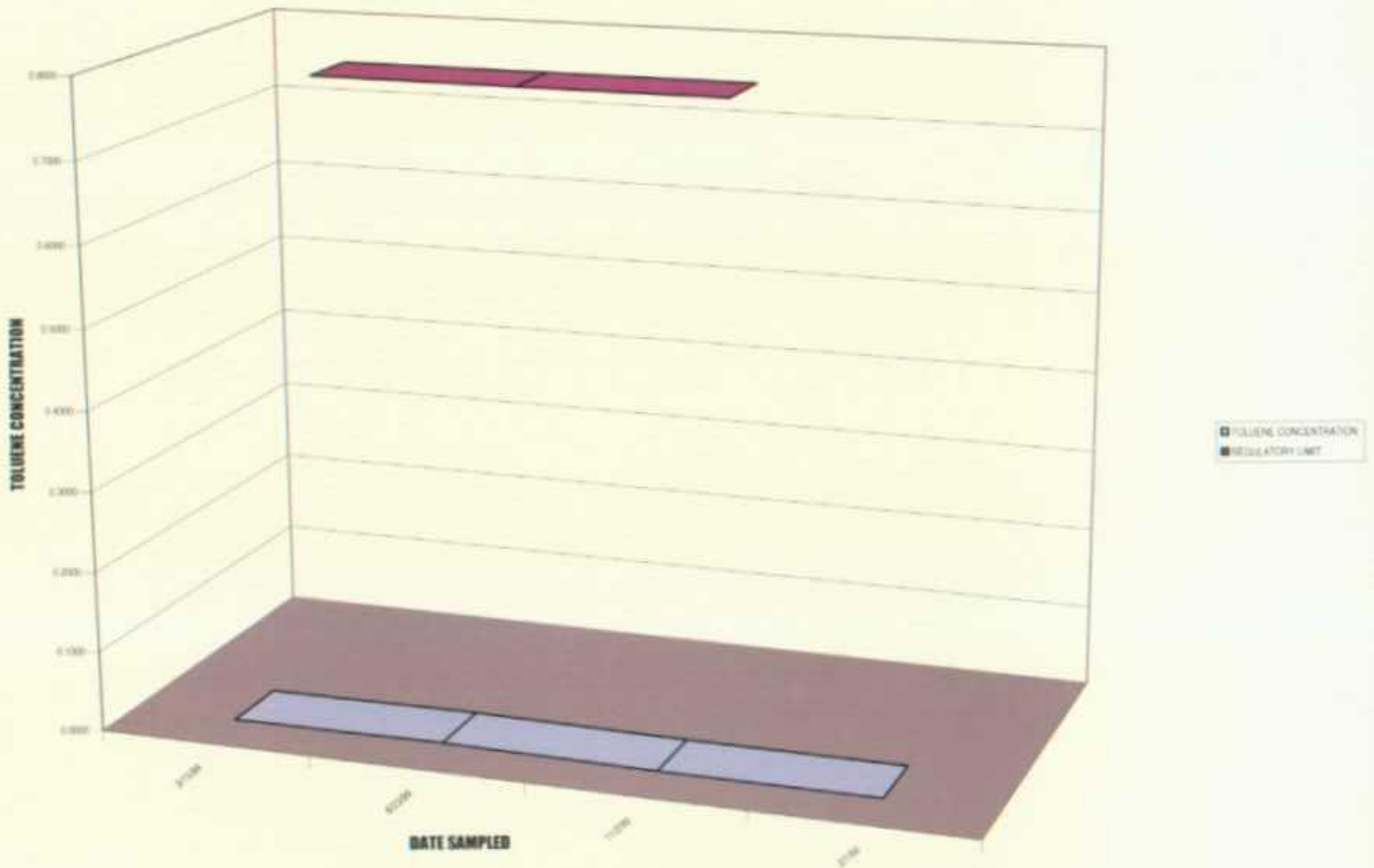



GRAPHICAL REPRESENTATION OF MW-01 TOLUENE CONCENTRATION IN GROUNDWATER
TOLUENE CONCENTRATIONS
0.8000
0.7000
0.6000
0.5000
0.4000
0.3000
0.2000
0.1000
0.0000
3/1/99
4/1/99
5/1/99
6/1/99
7/1/99
8/1/99
9/1/99
10/1/99
11/1/99
12/1/99
1/1/00
2/1/00
DATE SAMPLED
TOLUENE CONCENTRATION
REGULATORY LIMIT

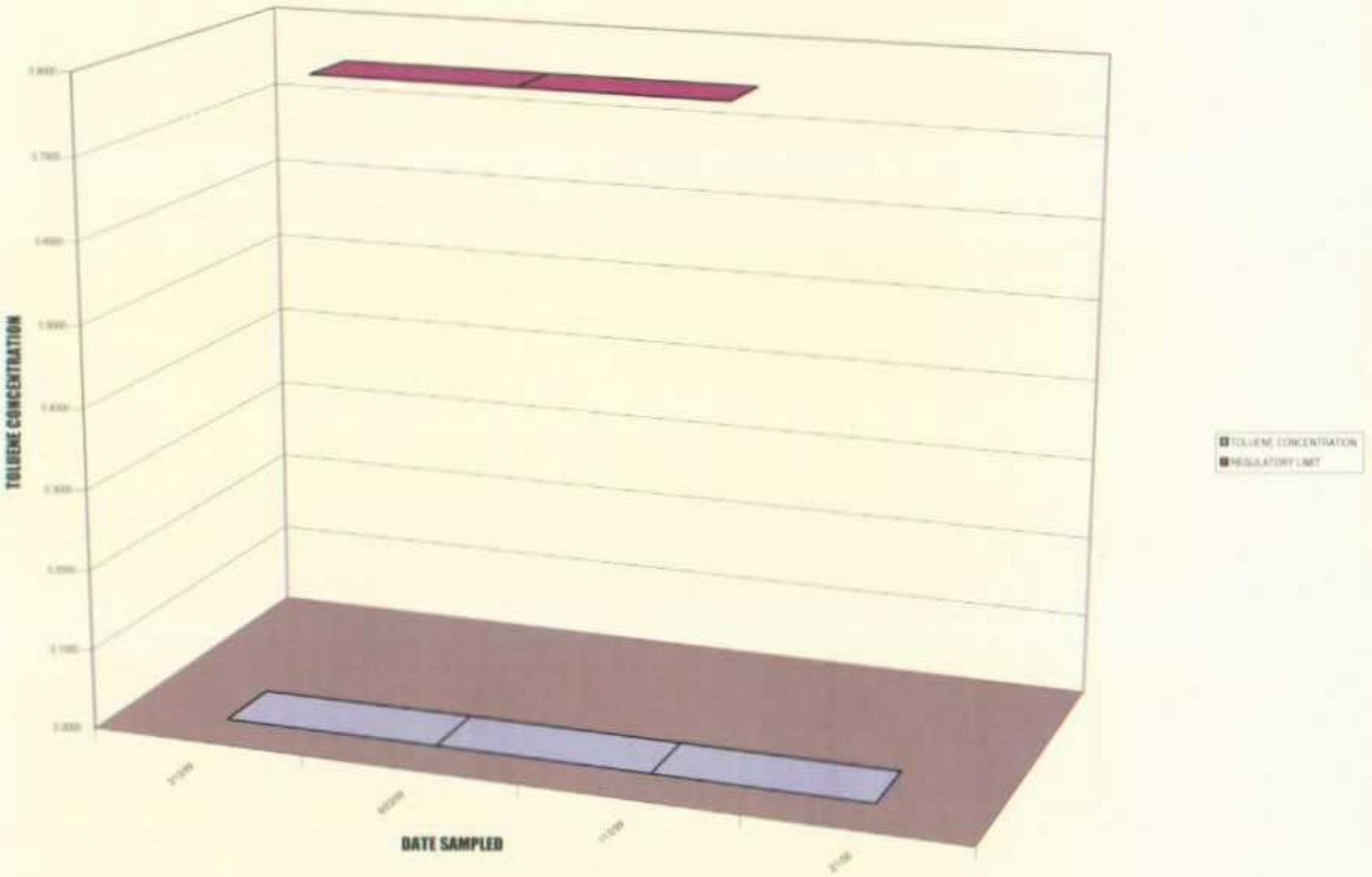
GRAPHICAL REPRESENTATION OF MW-02 TOLUENE CONCENTRAITONS IN GROUNDWATER



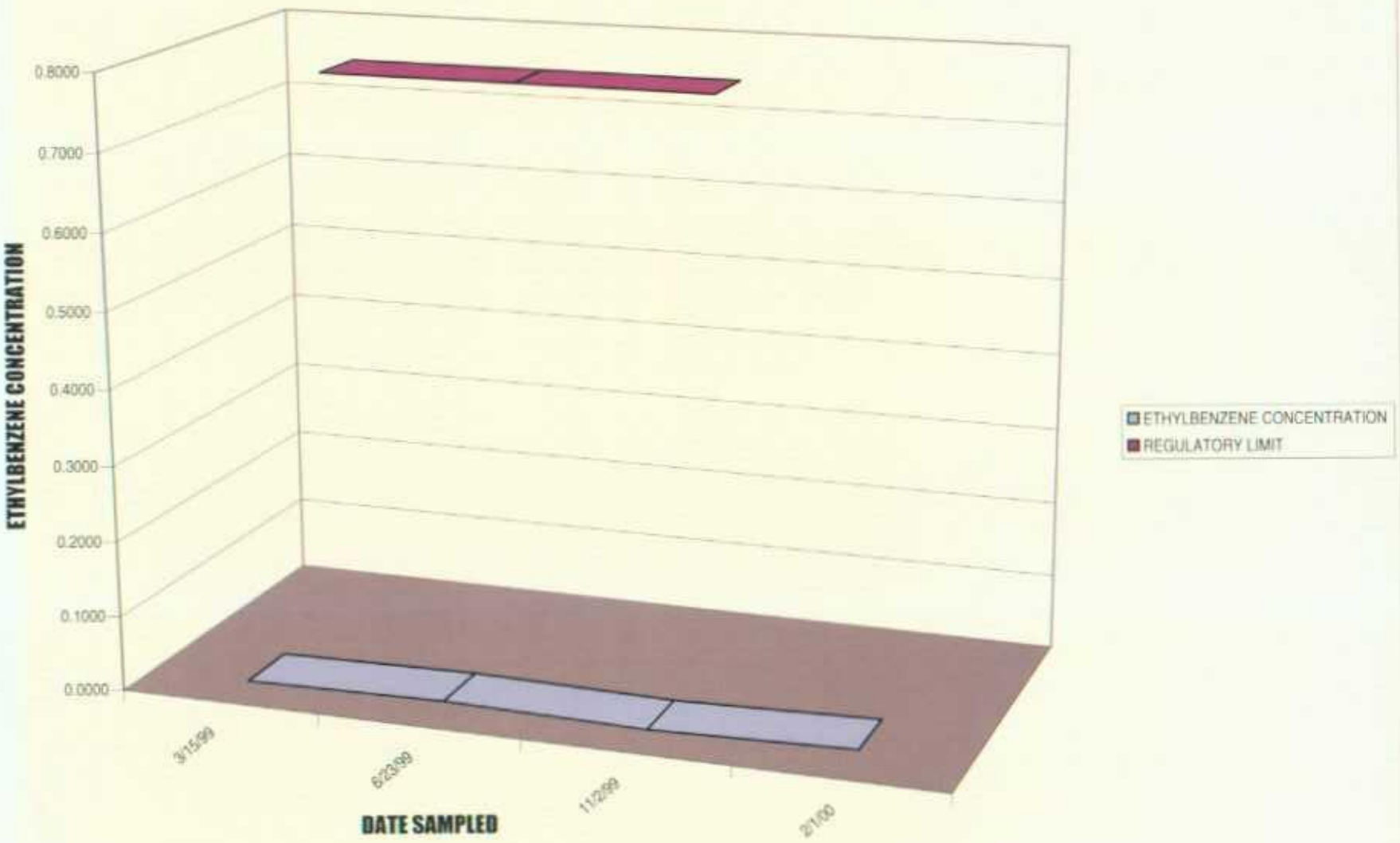
GRAPHICAL REPRESENTATION OF MW-03 TOLUENE CONCENTRATIONS IN GROUNDWATER



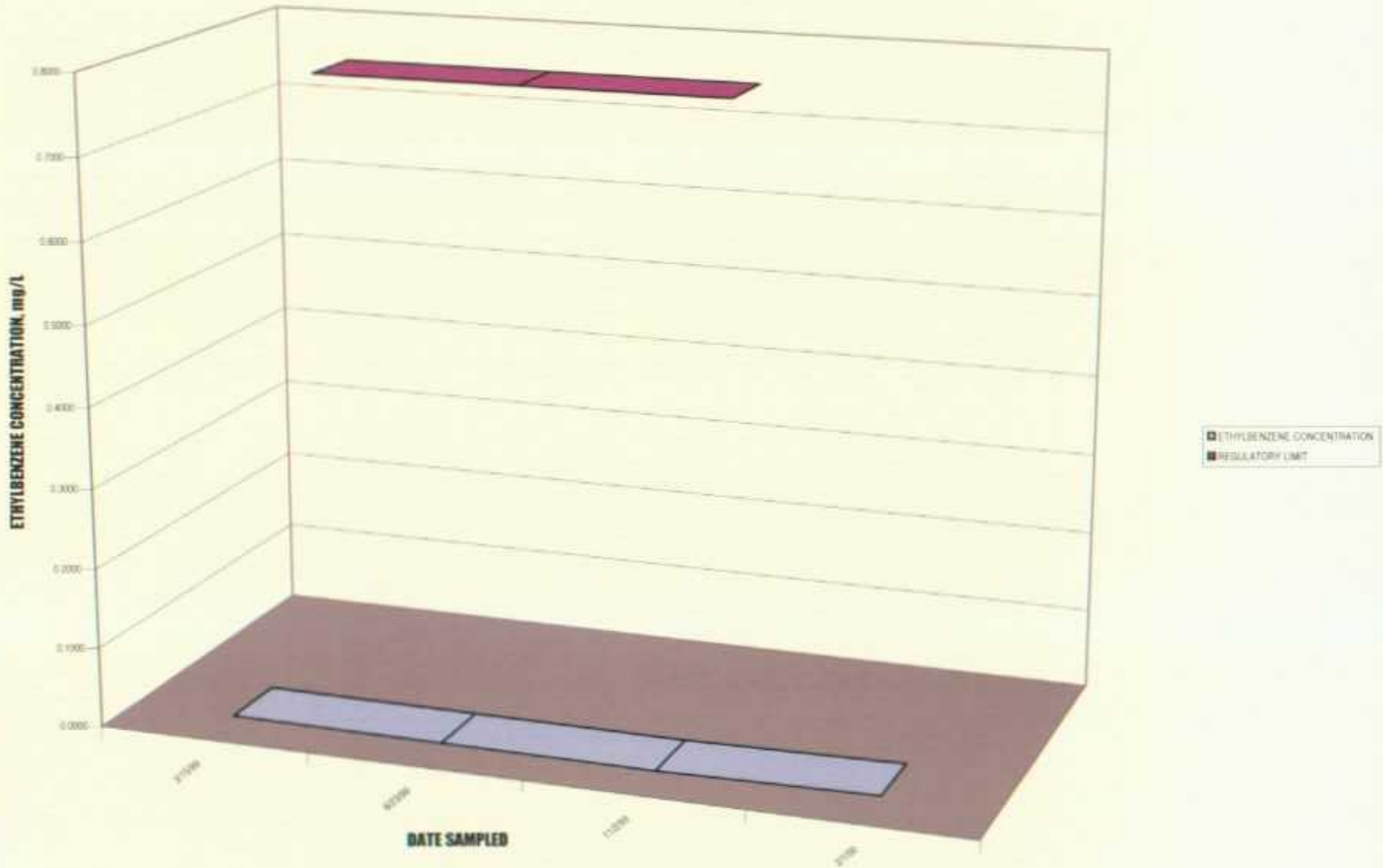
GRAPHICAL REPRESENTATION OF MW-04 TOLUENE CONCENTRATIONS IN GROUNDWATER



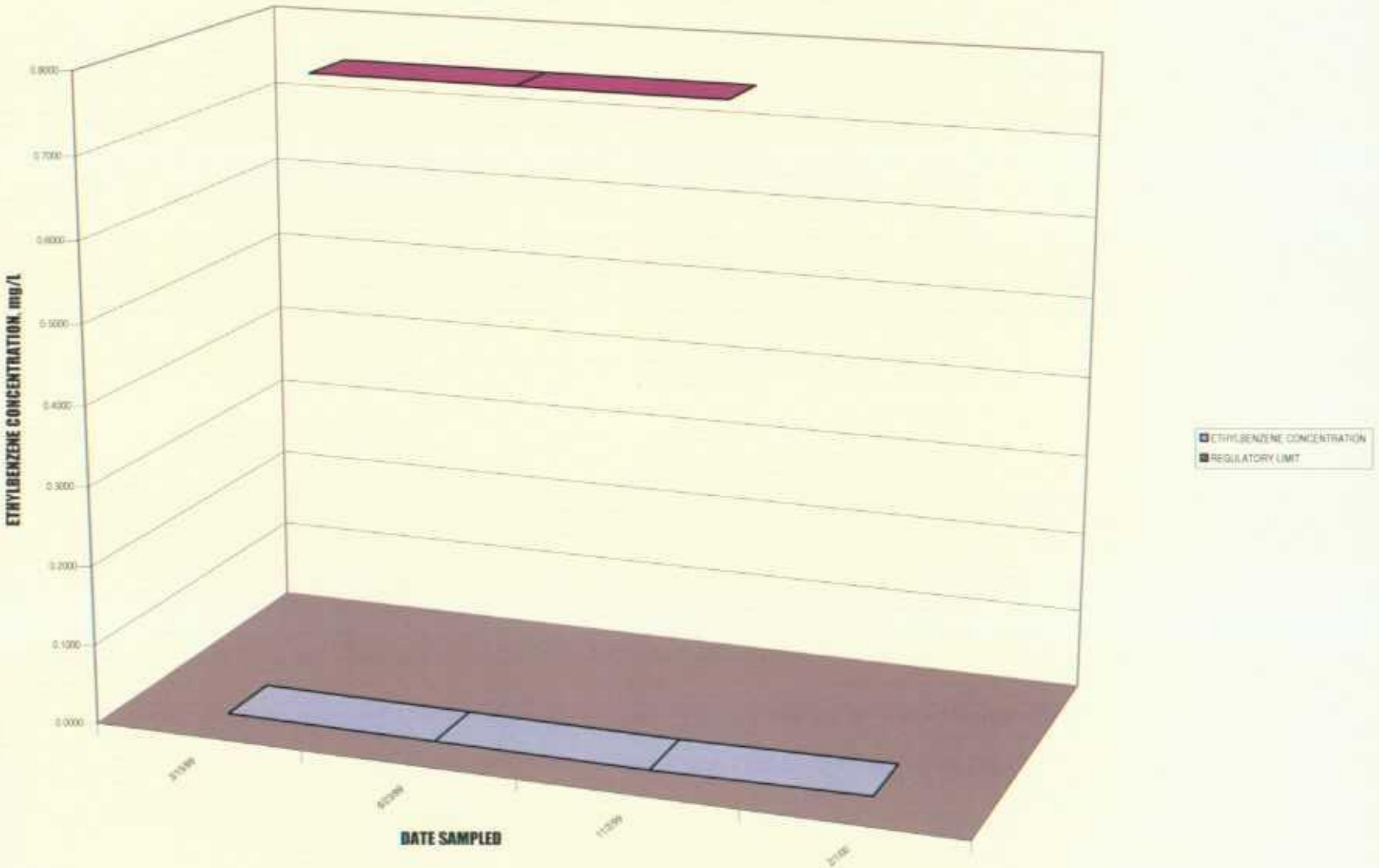
GRAPHICAL REPRESENTATION OF MW-01 ETHYLBENZENE CONCENTRATION IN WATER



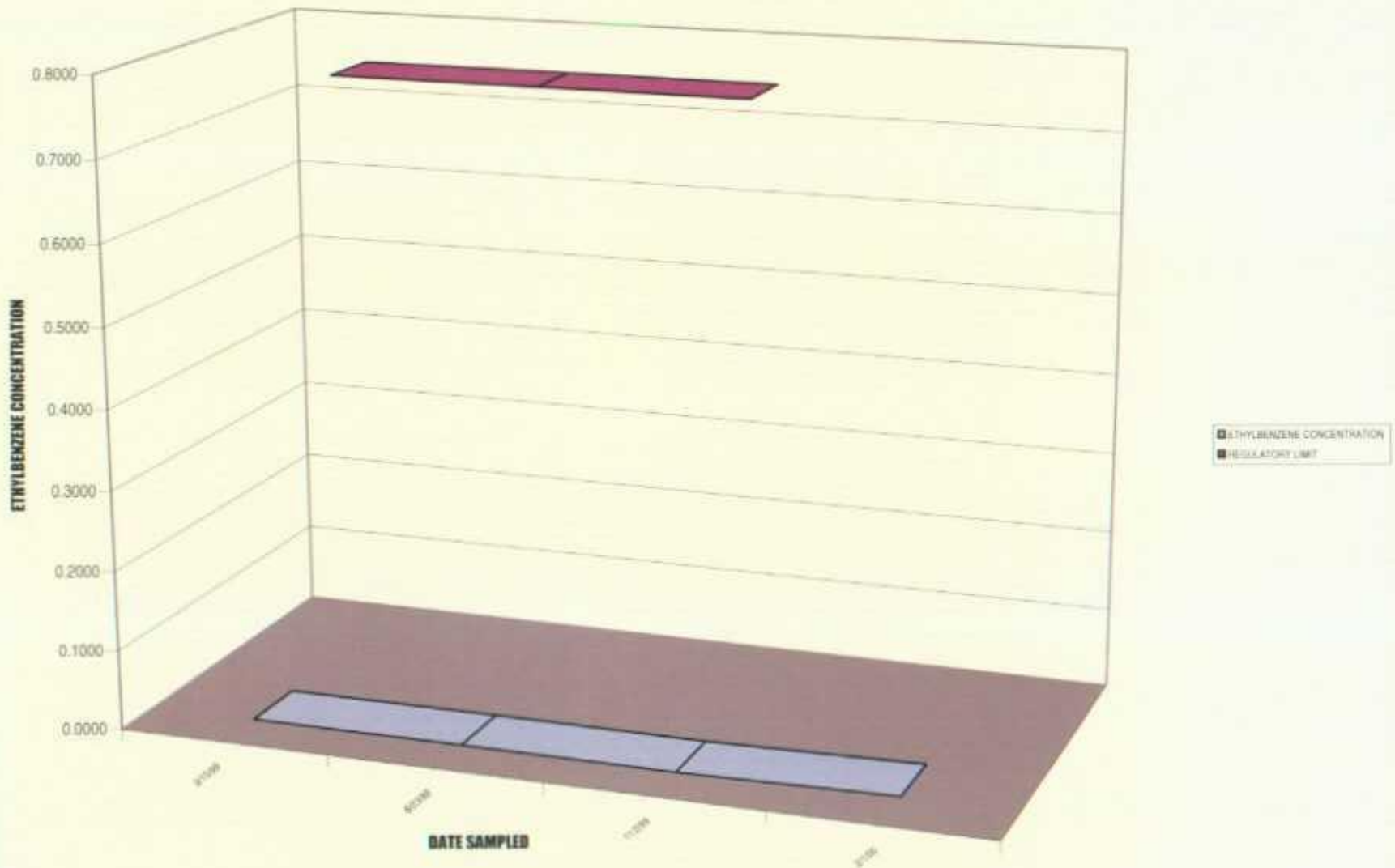
GRAPHICAL REPRESENTAION OF MW-02 ETHYLBENZENE CONCENTRATIONS IN GROUNDWATER



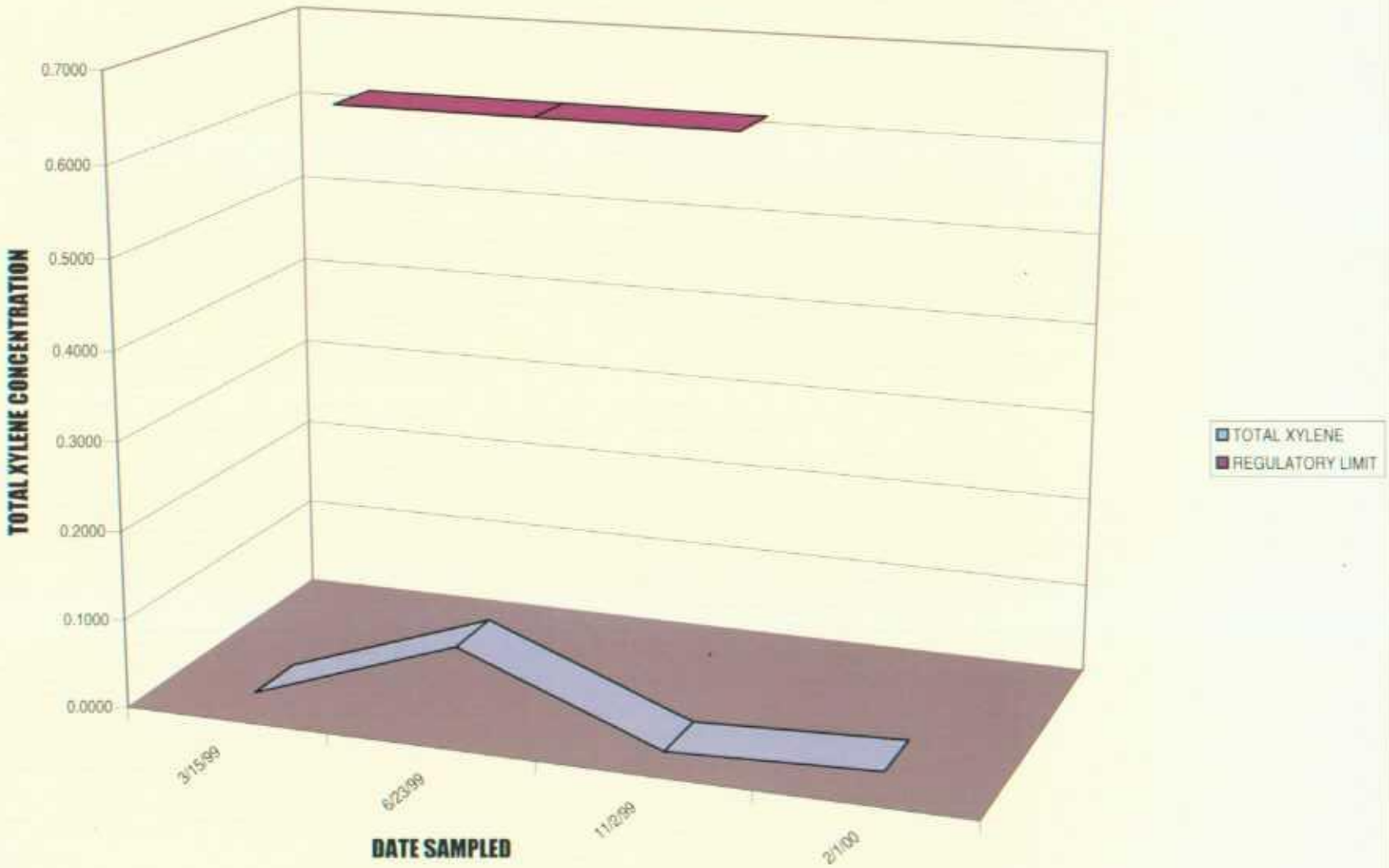
GRAPHICAL REPRESENTATION OF MW-03 ETHYLBENZENE IN GROUNDWATER



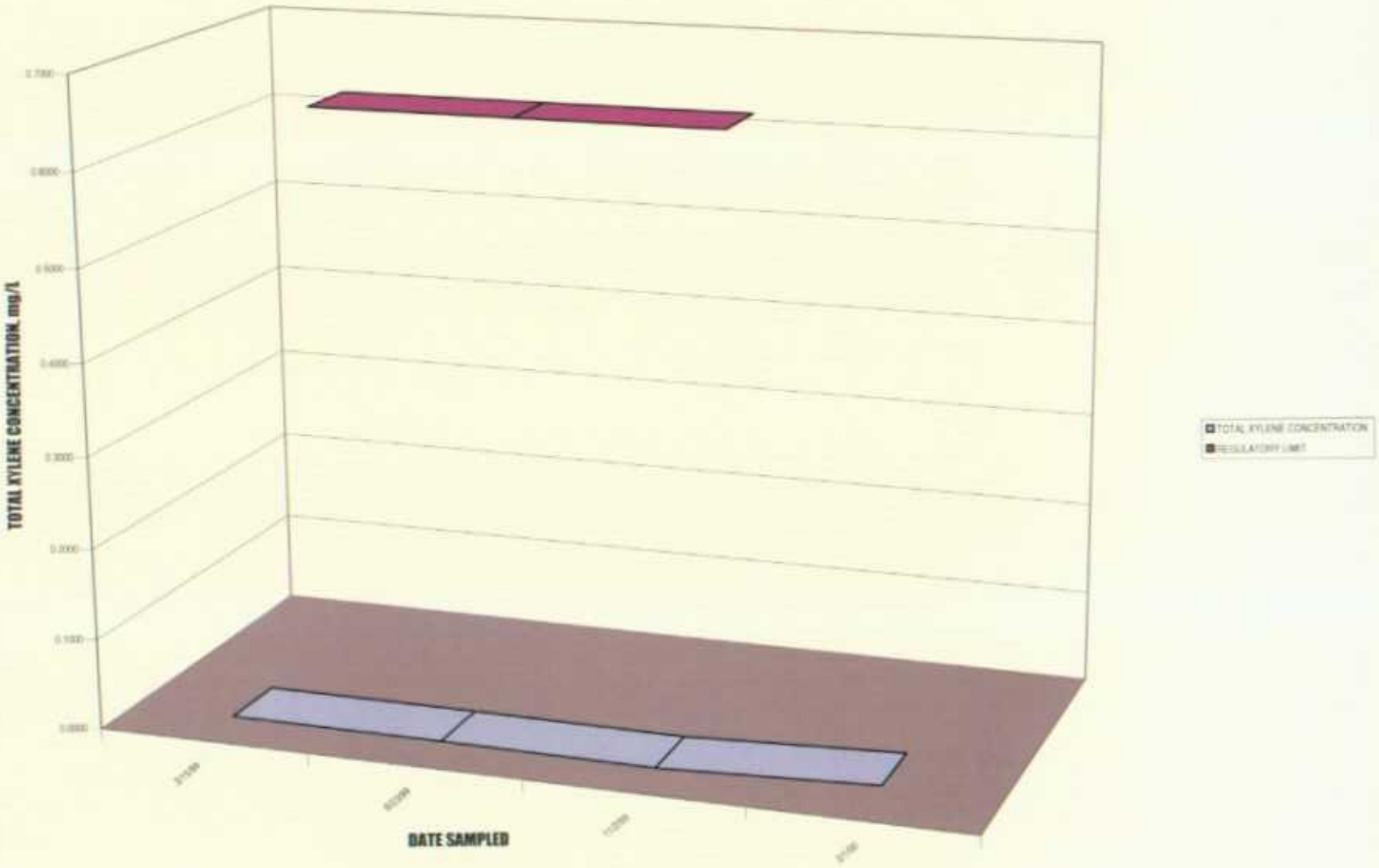
GRAPHICAL REPRESENTATION OF MW-04 ETHYLBENZENE IN GROUNDWATER



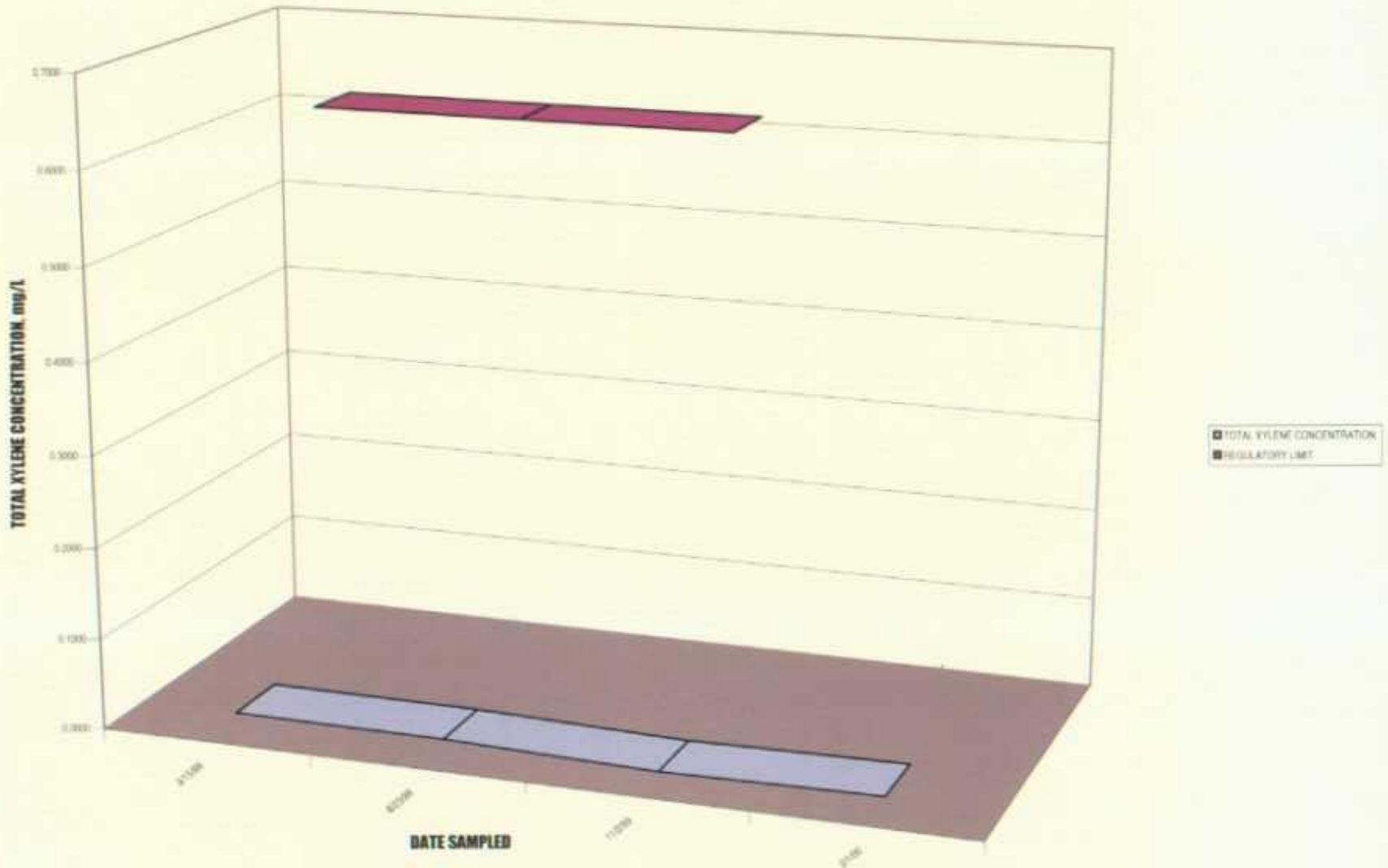
GRAPHICAL REPRESENTATION OF MW-01 TOTAL XYLENE CONCENTRATIONS IN GROUNDWATER



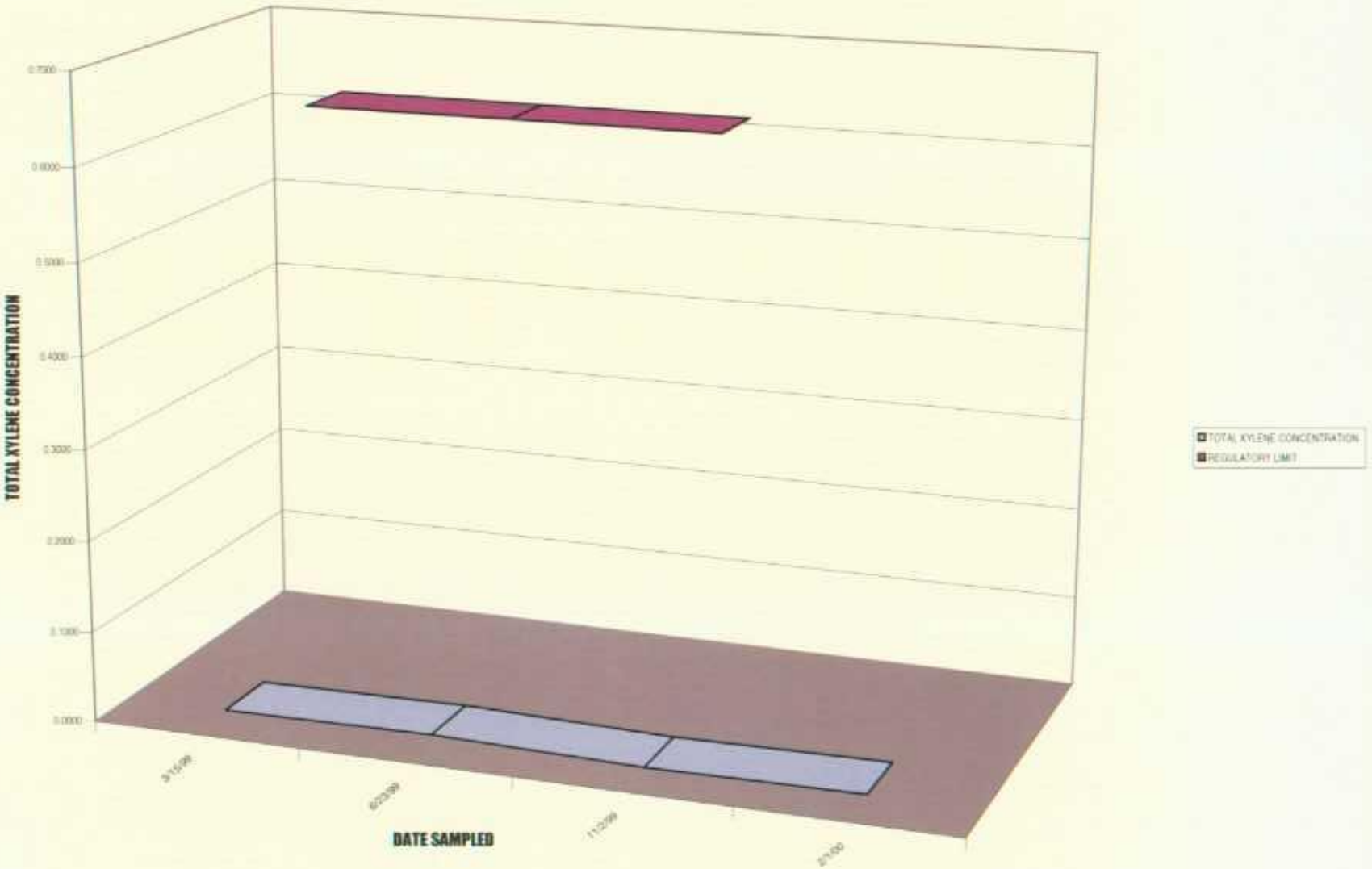
GRAPHICAL REPRESENTATION OF MW-02 TOTAL XYLENE IN GROUNDWATER



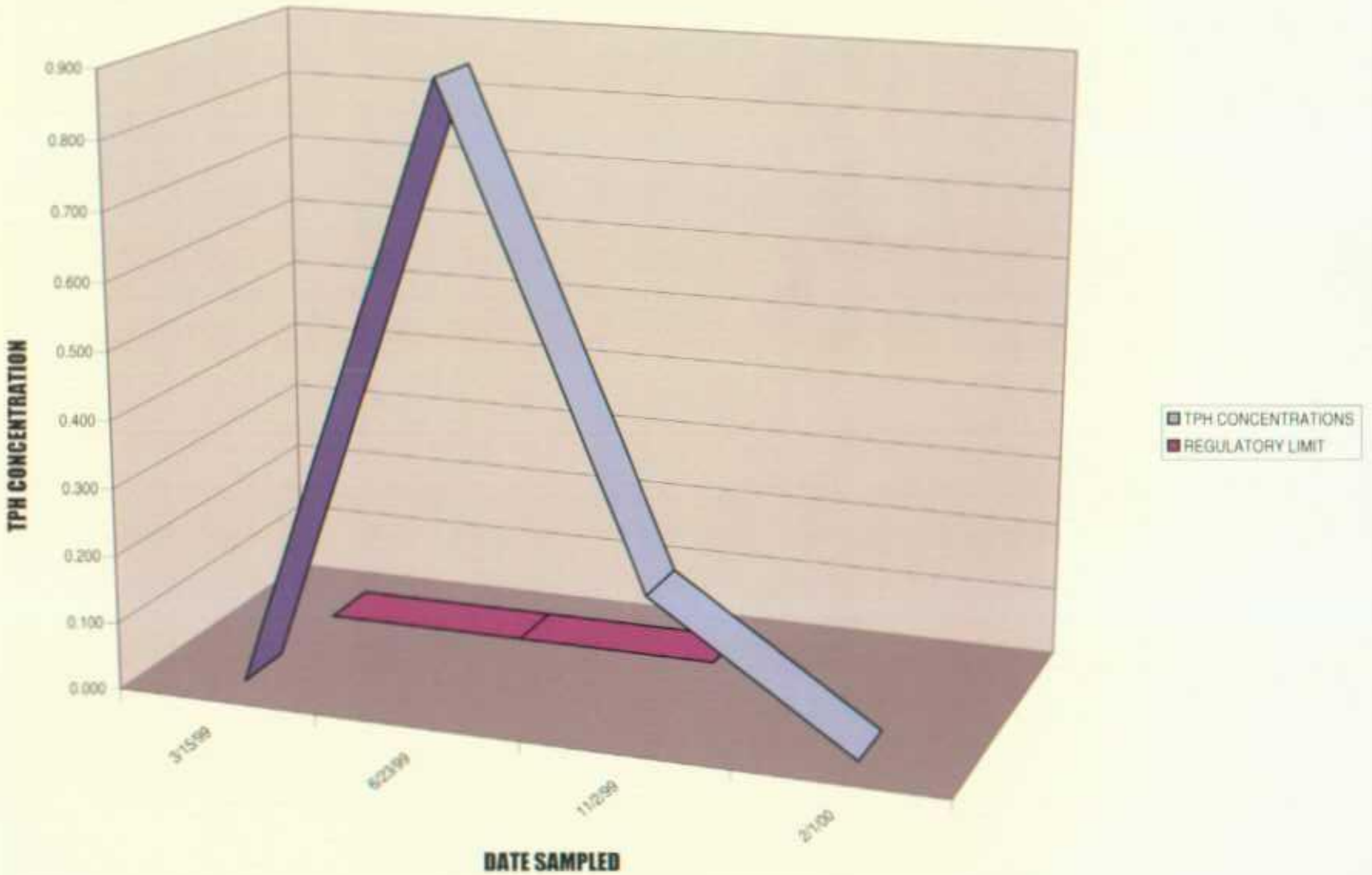
GRAPHICAL REPRESENTATION OF MW-03 TOTAL XYLENE CONCENTRATIONS IN GROUNDWATER



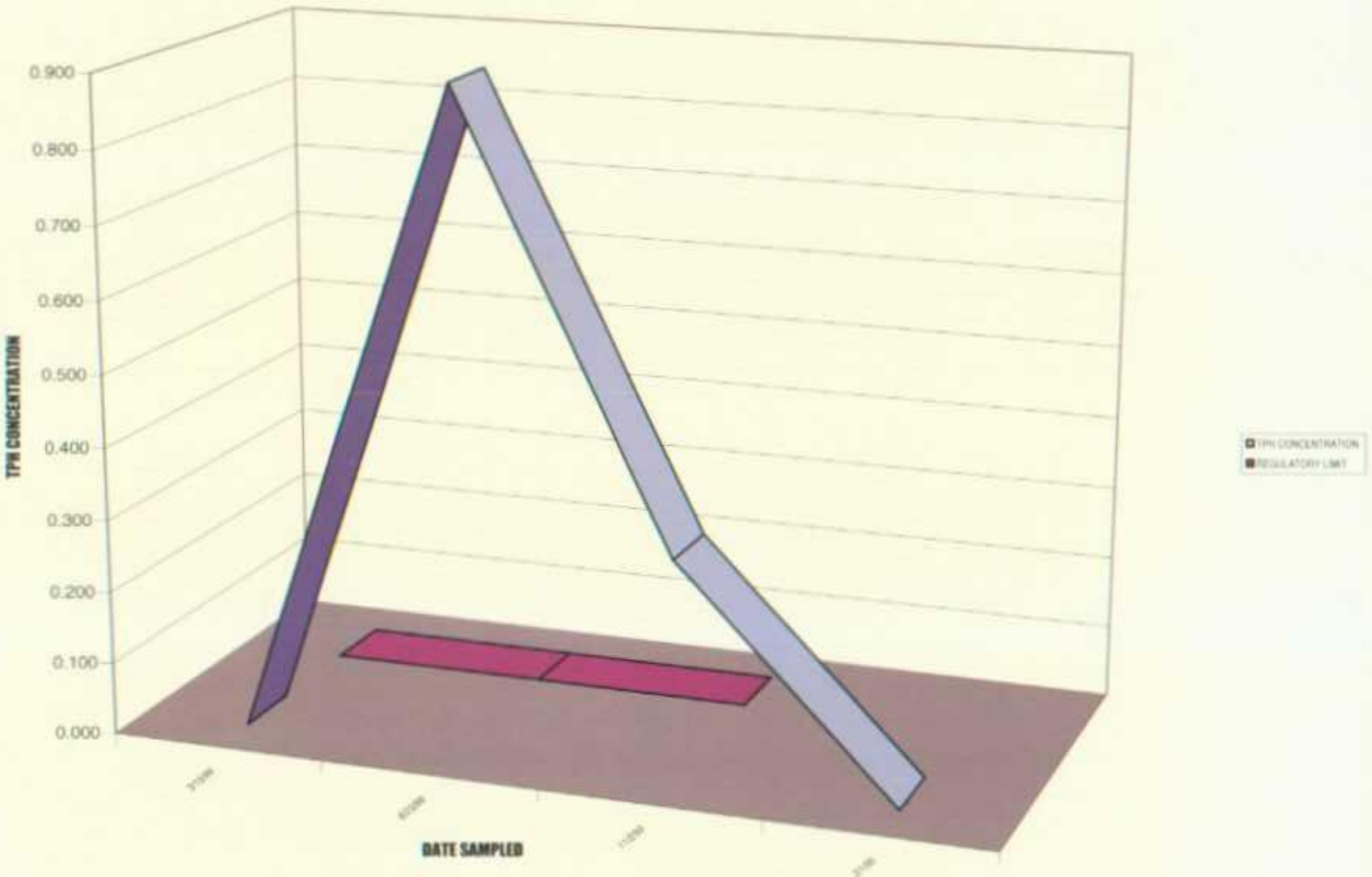
GRAPHICAL REPRESENTATION OF MW-04 TOTAL XYLENE IN GROUNDWATER



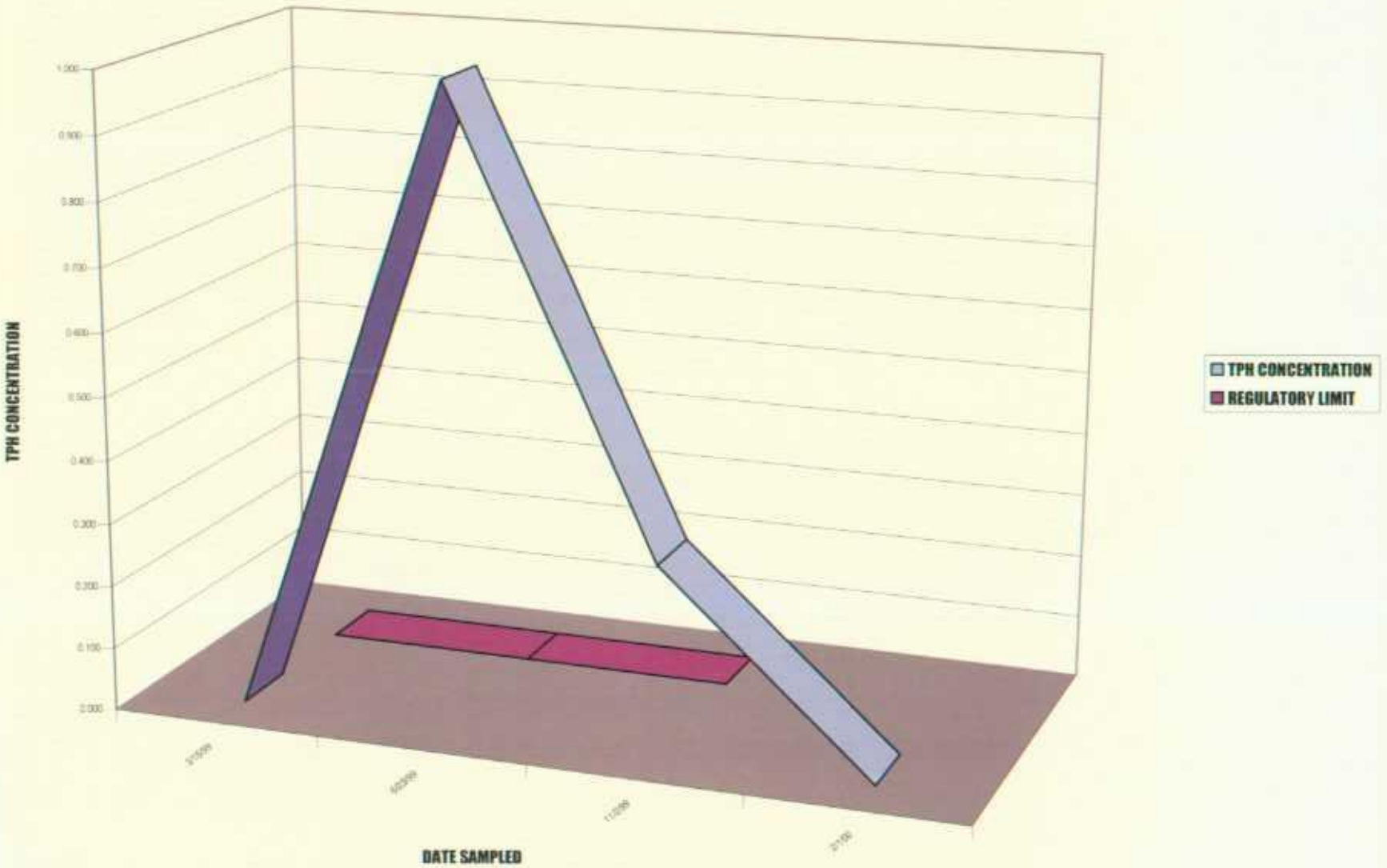
GRAPHICAL REPRESENTATION OF MW-01 TPH ANALYTICAL RESULTS



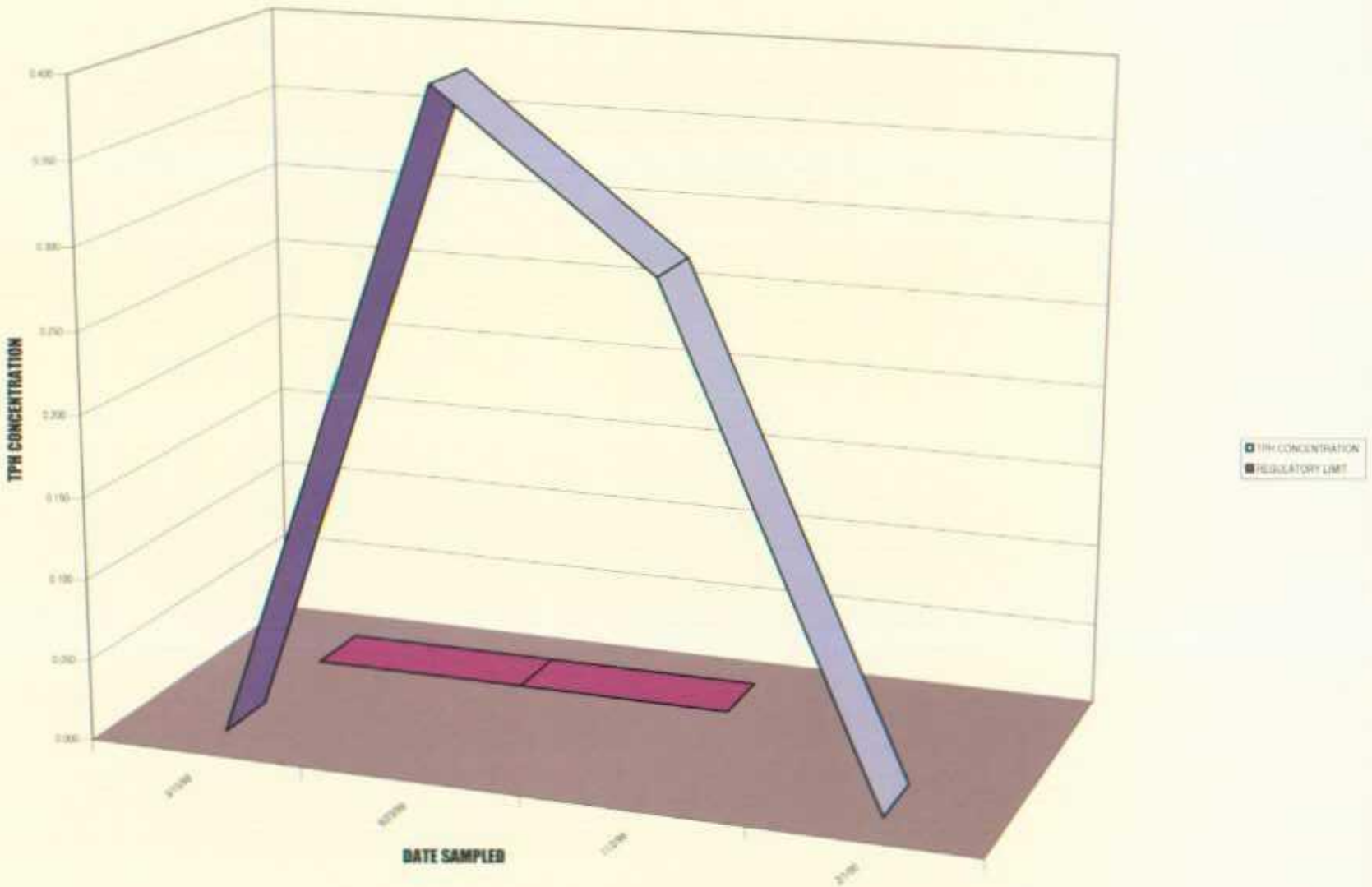
GRAPHICAL REPRESENTATION OF MW-02 TPH CONCENTRATIONS IN GROUNDWATER



GRAPHICAL REPRESENTATION OF MW-03 TPH CONCENTRATIONS IN GROUNDWATER



GRAPHICAL REPRESENTATION OF MW-04 TPH CONCENTRATIONS IN GROUNDWATER



CONFIDENTIAL INFORMATION OF ENTACT, INC.

ENTACT uses proprietary technology in additive and treatment processing to achieve its fixation and permeability results. Patents are both issued and pending, including U.S. Patent #5,588,947 and #5,591,116