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REPORTS

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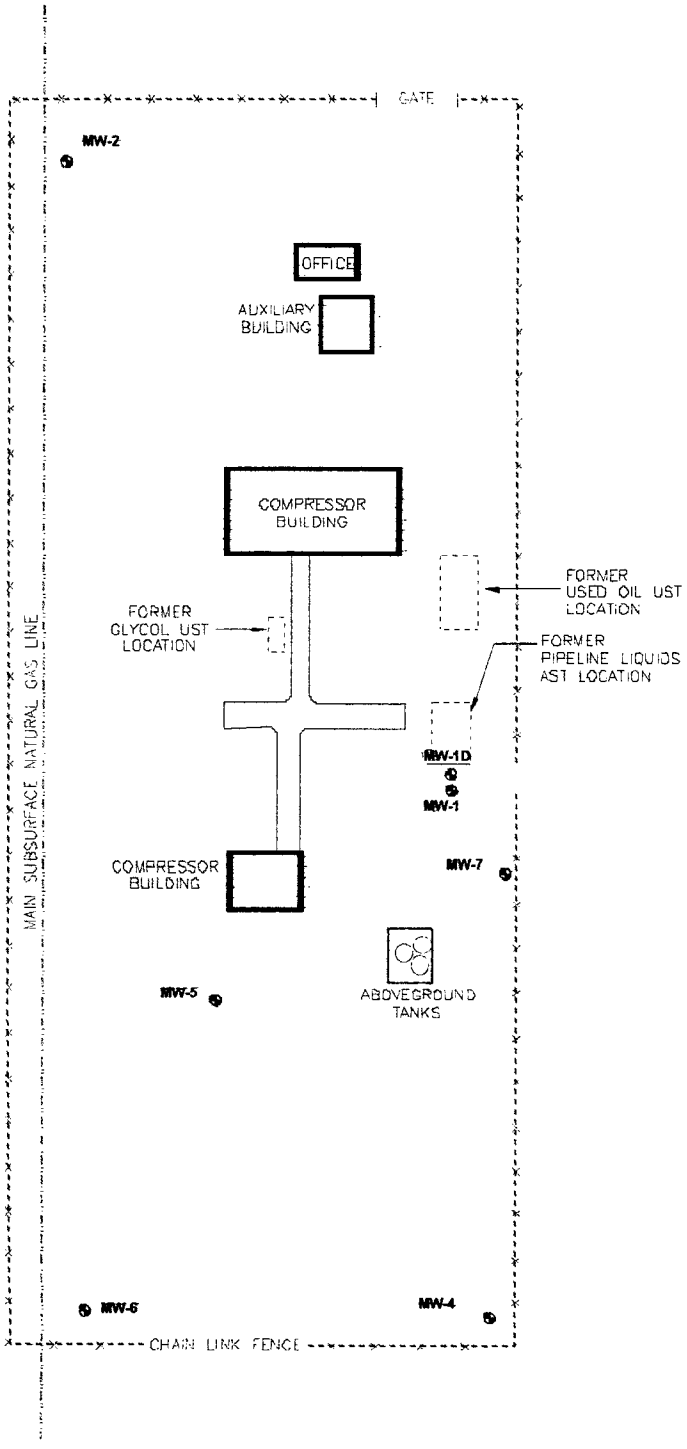
2003 Annual Groundwater Monitoring Report
Duke Energy Field Services
Monument Booster Station
Lea County, New Mexico



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2003 Annual Groundwater Monitoring Report
Duke Energy Field Services
Monument Booster Station
Lea County, New Mexico

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TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1.0 Executive Summary

Trident Environmental (Trident) was retained by Duke Energy Field Services Inc. (DEFS) to perform the groundwater monitoring operations at the Monument Booster Station, which is located one-half mile east of Monument along County Road 42. The legal description of the site is township 19 south, range 37 east, section 33, unit letter B, Lea County, New Mexico. This 2003 annual report documents the two semi-annual groundwater sampling events performed by Trident at the DEFS Monument Booster Station on April 25, 2003 and September 18, 2003. The report also contains the historical groundwater elevation and analytical data since the beginning of the monitoring and sampling program in May 1995. The monitoring and sampling activities were conducted in accordance with the guidelines specified by Mr. Bill Olson of the New Mexico Oil Conservation Division (OCD) in his letter dated December 9, 1999.

Based on the groundwater monitoring and remediation system performance data to date, the following conclusions at the Monument Booster Station are evident:

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations in monitoring wells MW-1D, MW-2, MW-3, MW-4, and MW-6 are presently below New Mexico Water Quality Control Commission (WQCC) standards. With the exception of the August 1999 sample recovered from MW-2 and the August 1999 and February 2000 samples recovered from MW-3, the BTEX concentrations in each of these wells have remained below the WQCC standard levels since 1995.

- Only the benzene concentrations from the current and historic groundwater samples recovered from MW-1 (0.057 mg/L), MW-5 (0.022 mg/L), and MW-7 (0.018 mg/L) exceed the WQCC standard.

- As of October 28, 2003, a total of approximately 163.6 gallons of light non-aqueous phase liquids (LNAPL) has been removed from monitoring wells MW-1 and MW-5 using a combination of gravity siphoning, hand bailing, passive skimmer, adsorbent sock, and pneumatic pump recovery methods.

- Observed spatial and time-relevant trends of biological parameters (DO, NO_3, SO_4, Fe^{+2}, total Fe, and total Mn) indicate the efficacy of indigenous microorganisms in degrading the dissolved hydrocarbons within the plume. The biodegradation capacity of electron acceptors and metabolic byproducts (10.48 mg/L) far exceeds the highest benzene concentration observed on site in the past (1.13 mg/L in MW-7 during the January 1996 sampling event) by a ratio of 9.3 to 1. The most recent benzene concentration in MW-7 was 0.018 mg/L during the September 2003 sampling event. This indicates that the biodegradation process has been occurring and will continue.

The following recommendations are suggested for the remediation system and monitoring operations at the Monument Booster Station.

- Continue LNAPL recovery operations utilizing absorbent socks in MW-1 and MW-5. This method appears to have been effective in recovering free product over the last two annual monitoring periods.

- Continue the groundwater-monitoring program on a semi-annual basis. The next sampling event is scheduled during the first quarter of 2004.

2.0 Chronology of Events

July 1992	Benge Construction Company of Lovington, New Mexico removed three underground storage tanks (USTs) near the main compressor building for ENRON at the Hobbs Compressor Station #2). The USTs formally contained used oil and pipeline liquids (oil and/or natural gas liquid condensate). Hydrocarbon-impacted soils were removed from the used oil and pipeline liquids UST tank holds.
February 4, 1994	Geoscience Consultants Ltd (GCL) installed two monitoring wells (MW-1 and MW-2) during a subsurface investigation for ENRON. Hydrocarbon-impacted groundwater was confirmed in MW-1.
May 17, 1994	Benge Construction Company returned during a subsurface investigation conducted by Daniel B. Stevens and Associates (DBS&A) and removed an additional amount of hydrocarbon-impacted soils from the pipeline liquids and used oil UST tank holds. The amount of hydrocarbon-impacted soils removed from the used oil and pipeline liquids UST tank holds in 1992 and 1994 was not well documented, however it was estimated by DBS&A that a total of 1,064 cubic yards were excavated from the two tank holds based on the amount of backfill required to fill the excavations.
May 16-19, 1994	Six soil borings (SB-1 through SB-6) were completed as temporary drive point wells for ENRON by DBS&A to delineate the horizontal extent of hydrocarbon-impacted soils and groundwater.
October 7, 1994	The OCD requested ENRON to provide a work plan to completely define the extent of groundwater contamination at the Hobbs Compressor Station #2 site.
November 1994	GPM Gas Corporation (GPM) acquired ownership and operation of the Monument Booster Station (formerly Hobbs Compressor Station #2) from ENRON.
February 23, 1995	GPM submitted a subsurface investigation work plan to the OCD to address the groundwater conditions at Monument Booster Station.
April 5, 1995	The OCD approved the subsurface investigation work plan for Monument Booster Station.
May 8-10, 1995	GCL completed a subsurface investigation for GPM to delineate the extent of the hydrocarbon-impacted groundwater. The investigation included the installation and sampling of four monitoring wells (MW-1D, MW-3, MW-4, and MW-5) and one soil boring (SB-7).
July 28, 1995	GPM submitted the *Subsurface Investigation and Preliminary Remedial Response* report for the Monument Booster Station to the OCD.

August 24, 1995	The OCD approved GPM's recommendations for remedial action. The OCD requested a work plan for an additional monitoring well, new recovery well and product recovery system.
September 29, 1995	GPM submitted the *Remediation and Monitoring Work Plan for the Monument Booster Station* to the OCD.
October 25, 1995	The OCD approved the remediation and monitoring work plan for Monument Booster Station.
November 14-16, 1995	GCL installed two additional monitoring wells (MW-6 and MW-7) and conducted the fourth quarter 1995 sampling event at Monument Booster Station.
January 18, 1996	GCL conducted the first quarter 1996 sampling event at Monument Booster Station.
April 24, 1996	GCL conducted the annual (second quarter 1996) sampling event at Monument Booster Station. The annual report included recommendations to the OCD for remedial response.
January 22, 1997	BDM International, Inc. (formerly GCL) conducted the first quarter 1997 sampling event at Monument Booster Station.
January 31, 1997	The OCD completed the review of the annual report for the second quarter 1996 sampling event and approved the groundwater monitoring modifications for Monument Booster Station.
January 31, 1997	BDM International, Inc. (BDM) and GPM installed an automated pneumatic product recovery pump system in monitoring wells MW-1 and MW-5 to replace the hand bailing and gravity siphoning techniques used previously.
August 11, 1997	BDM conducted the annual (third quarter 1997) sampling event at Monument Booster Station.
January 23, 1998	TRW conducted the semi-annual (first quarter 1998) sampling event at Monument Booster Station.
August 3, 1998	TRW conducted the annual (third quarter 1998) sampling event at Monument Booster Station.
February 10, 1999	TRW conducted the semi-annual (first quarter 1999) sampling event at Monument Booster Station.
August 17, 1999	TRW conducted the annual (third quarter 1999) sampling event at Monument Booster Station.

September 14, 1999	TRW conducted O & M on Xitech product recovery system (MW-1) checked and/or replaced absorbent sock and hand bailed excess product from MW-5.
October 26, 1999	TRW conducted O & M on Xitech system and manual product removal.
November 5, 1999	TRW conducted manual product removal from MW-5.
November 22, 1999	TRW conducted O & M on Xitech system and manual product removal.
December 20, 1999	TRW removed the Xitech pump for update and repair. An absorbent sock was installed in MW-1 and replaced in MW-5. Excess product was removed from MW-5 using a hand bailer.
January 26, 2000	TRW measured product thickness and installed new absorbent socks in MW-1 and MW-5.
February 17-18, 2000	TRW conducted the semi-annual (first quarter 2000) sampling event and product removal operations. Groundwater samples were recovered from MW-1D, MW-2, MW-3, MW-4, MW-6 and MW-7.
April 4, 2000	TRW measured product thickness, installed new absorbent socks in MW-1 and MW-5, and removed excess product using a hand bailer.
April 24, 2000	TRW measured product thickness and check and/or replaced absorbent socks in MW-1 and MW-5.
June 15, 2000	TRW measured product thickness and installed new absorbent socks in MW-1 and MW-5.
July 19, 2000	TRW measured product thickness and installed new absorbent socks in MW-1 and MW-5.
August 23, 2000	TRW conducted the annual (third quarter 2000) sampling event and product removal operations. Groundwater samples were recovered from MW-1D, MW-2, MW-3, MW-4, MW-6 and MW-7.
October 3, 2000	TRW measured product thickness and installed new absorbent socks in MW-1 and MW-5.
December 14, 2001	TRW measured product thickness and installed new absorbent socks in MW-1 and MW-5.
January 23, 2001	TRW measured product thickness and installed new absorbent socks in MW-1 and MW-5.

February 8-9, 2001	TRW conducted the semi-annual (first quarter 2001) sampling event and product removal operations. Groundwater samples were recovered from MW-1D, MW-2, MW-3, MW-4, MW-6 and MW-7.
April 4, 2001	TRW measured product thickness and installed new absorbent socks in MW-1 and MW-5.
May 1, 2001	Trident Environmental acquired the Midland Texas resources of TRW, Inc.
May 16, 2001	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
June 19, 2001	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
July 20, 2001	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
July 30, 2001	Trident conducted the annual (third quarter 2001) sampling event and product removal operations. Groundwater samples were recovered from MW-1D, MW-2, MW-3, MW-4, MW-6 and MW-7.
September 10, 2001	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
October 7, 2001	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
November 8, 2001	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
December 11, 2001	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
January 18, 2002	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
February 13, 2002	Trident conducted the semi-annual (first quarter 2002) sampling event and product removal operations. Groundwater samples were recovered from MW-1D, MW-2, MW-3, MW-4, MW-6 and MW-7.
March 14, 2002	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
April 10, 2002	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.

May 14, 2002	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
June 18, 2002	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
July 12, 2002	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
August 24, 2002	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
September 24, 2002	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
September 27, 2002	Trident conducted the annual (third quarter 2001) sampling event. Groundwater samples were recovered from MW-1D, MW-2, MW-3, MW-4, MW-6, & MW-7.
October 24, 2002	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
November 22, 2002	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
December 17, 2002	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
January 15, 2003	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
February 18, 2003	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
March 28, 2003	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
April 23, 2003	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
April 25, 2003	Trident conducted the semi-annual (first quarter 2003) sampling event. Groundwater samples were recovered from MW-1D, MW-2, MW-3, MW-4, MW-6 and MW-7.

May 29, 2003	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
June 23, 2003	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
July 30, 2003	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
August 20, 2003	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.
September 25, 2003	Trident conducted the annual (third quarter 2001) sampling event and product removal operations. Groundwater samples were recovered from MW-1D, MW-2, MW-3, MW-4, MW-6 and MW-7.
October 28, 2003	Trident measured product thickness and installed new absorbent socks in MW-1 and MW-5.

3.0 Procedures

Prior to sampling, all monitoring wells (MW-1 through MW-7) were gauged for depth to groundwater using a GeoTech Model oil/water interface probe. Each monitoring well designated for groundwater sampling was purged using a clean, decontaminated submersible pump, with the exception of MW-1D which was bailed by hand using a new disposable bailer. Groundwater parameters, including pH, conductivity, temperature, and dissolved oxygen (DO) were measured during the purging operation using a Hydac Model 910 multi-parameter instrument, and Hanna Model 9143 DO meter. A total of 260 gallons of water was purged from monitoring wells MW-1D, MW-2, MW-3, MW-4, MW-6, and MW-7 during the April 25, 2003 and September 18, 2003 sampling events. Monitoring wells MW-1 and MW-5 were not sampled during the April 25, 2003 sampling event due to the presence of LNAPL. All groundwater samples were obtained following the purging operation using a new, decontaminated, disposable bailer.

The first sets were transferred into airtight, septum-sealed, 40-ml glass VOA sample vials with zero headspace for analysis of BTEX using EPA Method 8021B. A duplicate sample of MW-7 was collected during both sampling events. The second set of water samples were transferred into appropriately preserved containers for analysis of nitrate (NO_3) and sulfate (SO_4), to assess the efficacy of intrinsic bioremedial activity currently taking place. During the annual sampling event conducted on September 18, 2003, a third and fourth set of water samples were transferred into appropriately preserved containers for analysis of major ions (chloride, fluoride, and total dissolved solids) and WQCC metals (boron, iron, and manganese). Also, ferrous iron was measured in the field using a Hach DR2010 spectrophotometer (Method 8146). A summary of purging and sampling methods is provided in Table 1 below. Chain-of-custody (COC) forms documenting sample identification numbers, collection times, and delivery times to the laboratories were completed for each set of samples. A monitoring well sampling data sheet was prepared for each well to document the parameter readings during the purge operation. The water samples were placed in an ice-filled cooler immediately after collection and shipped to Trace Analysis, Inc. of Lubbock, Texas for laboratory analysis.

Table 1
Summary of Purging and Sampling Methods

Monitoring Well No.	Sample Date	Purge Method	Purge Volume (gallons)	Sampling Method	Groundwater Analytes
MW-1	09/18/03	Hand Bail	12	Disposable bailer	BTEX, Metals, Ions, Bio-indicators
MW-1D	04/25/03	Hand Bail	5	Disposable bailer	BTEX and Bio-indicators
	09/18/03	Hand Bail	5	Disposable bailer	BTEX, Metals, Ions, Bio-indicators
MW-2	04/25/03	Pump	30	Disposable bailer	BTEX and Bio-indicators
	09/18/03	Pump	16	Disposable bailer	BTEX, Metals, Ions, Bio-indicators
MW-3	04/25/03	Pump	20	Disposable bailer	BTEX and Bio-indicators
	09/18/03	Pump	10	Disposable bailer	BTEX, Metals, Ions, Bio-indicators
MW-4	04/25/03	Pump	18	Disposable bailer	BTEX and Bio-indicators
	09/18/03	Pump	10	Disposable bailer	BTEX, Metals, Ions, Bio-indicators
MW-5	09/18/03	Hand Bail	20	Disposable bailer	BTEX, Metals, Ions, Bio-indicators
MW-6	04/25/03	Pump	35	Disposable bailer	BTEX and Bio-indicators
	09/18/03	Pump	24	Disposable bailer	BTEX, Metals, Ions, Bio-indicators
MW-7	04/25/03	Pump	28	Disposable bailer	BTEX and Bio-indicators
	09/18/03	Pump	27	Disposable bailer	BTEX, Metals, Ions, Bio-indicators

* Indicates monitoring well was bailed dry or pumped off.
BTEX - benzene, toluene, ethylbenzene, xylenes
WQCC Metals - B, Fe,and Mn
Ions - F, Cl, and TDS
Bio-indicators - DO, NO_3, SO_4, Fe^{+2}
MW-1 and MW-5 not sampled in April due to presence of product.

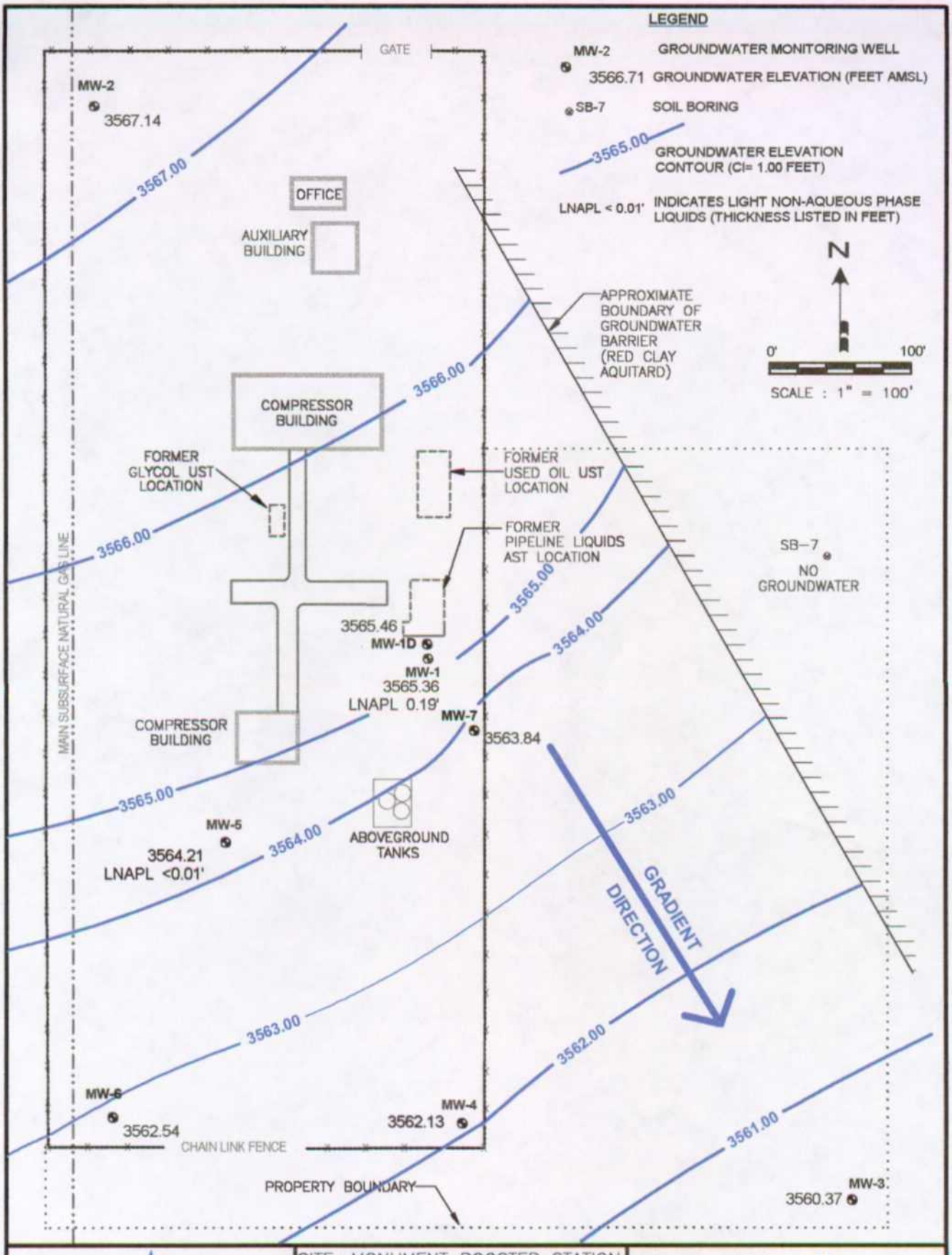
4.0 Groundwater Elevations, Hydraulic Gradient and Flow Direction

Based on the most recent gauging data collected by Trident on September 18, 2003, the groundwater conditions at the Monument Booster Station are characterized below.

- The depth to the water table across the site varies from approximately 21 to 27 feet below ground surface
- The hydraulic gradient is approximately 0.007 feet/foot
- The direction of groundwater flow is to the southeast

The direction of groundwater flow and hydraulic gradient has remained consistent for the past eight and one-half years. Groundwater elevation maps depicting the water table elevation and direction of groundwater flow using the gauging data obtained during the two 2003 sampling events are presented in Figure 1A (April 25, 2003) and Figure 1B (September 18, 2003).

Figure 2 depicts the changes in groundwater elevations in monitoring wells MW-1 through MW-7 with time. Historical groundwater elevations and depth to water measurements are summarized in Table 2.



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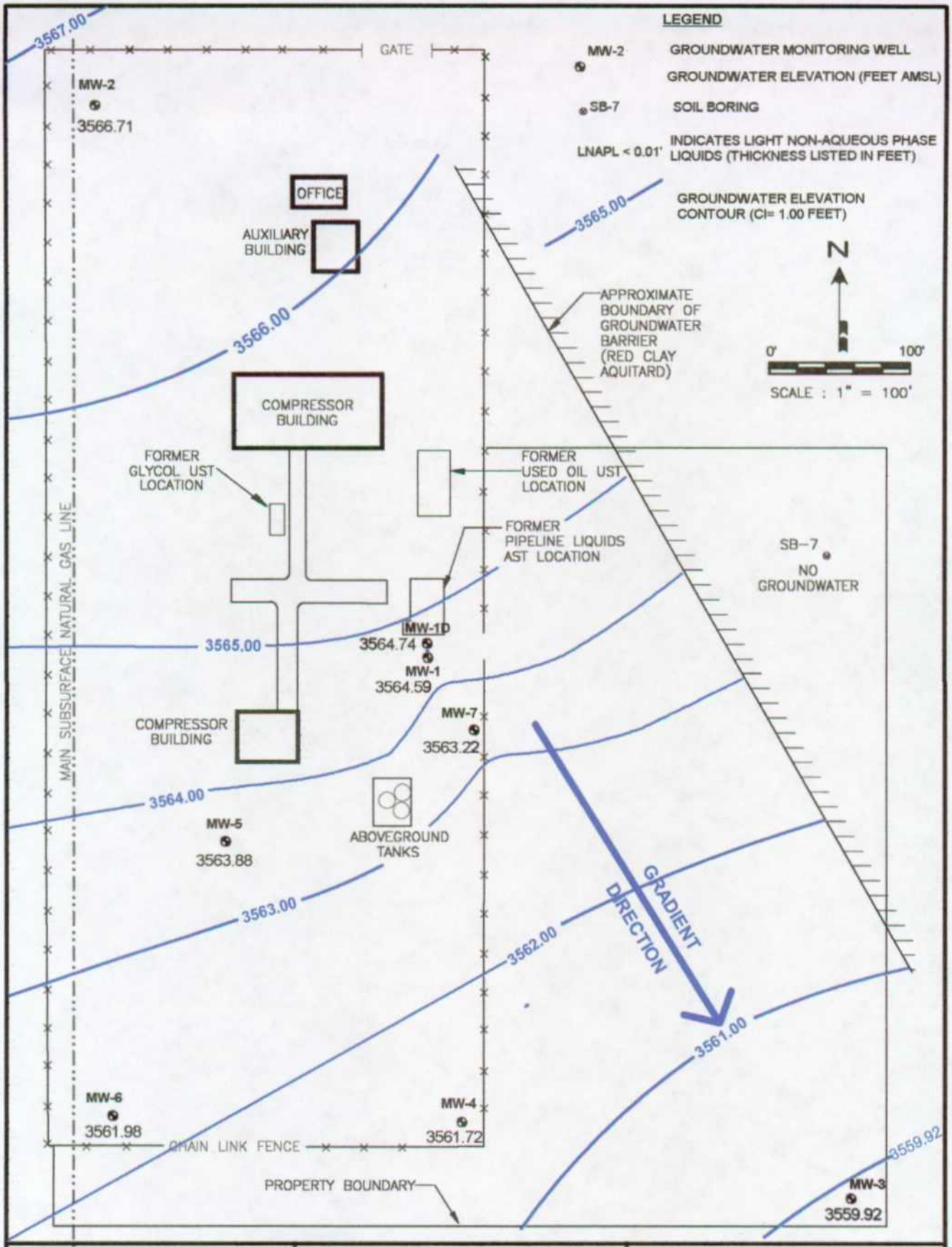
	DATE: 04/25/03	REV. NO.:
	AUTHOR: GJV	DRN BY: DTL
	CK'D BY: DTL	FILE:monument

Figure 1A
MONUMENT BOOSTER STATION
GROUNDWATER ELEVATION MAP
Gauging Date: April 25, 2003



TRIDENT ENVIRONMENTAL	SITE: MONUMENT BOOSTER STATION	
	DATE: 09/18/03	REV. NO.:
	AUTHOR: GJV	DRN BY: DTL
	CK'D BY: DTL	FILE:monument

Figure 1B
MONUMENT BOOSTER STATION
GROUNDWATER ELEVATION MAP
Gauging Date: September 18, 2003

Figure 2
Groundwater Elevation Versus Time

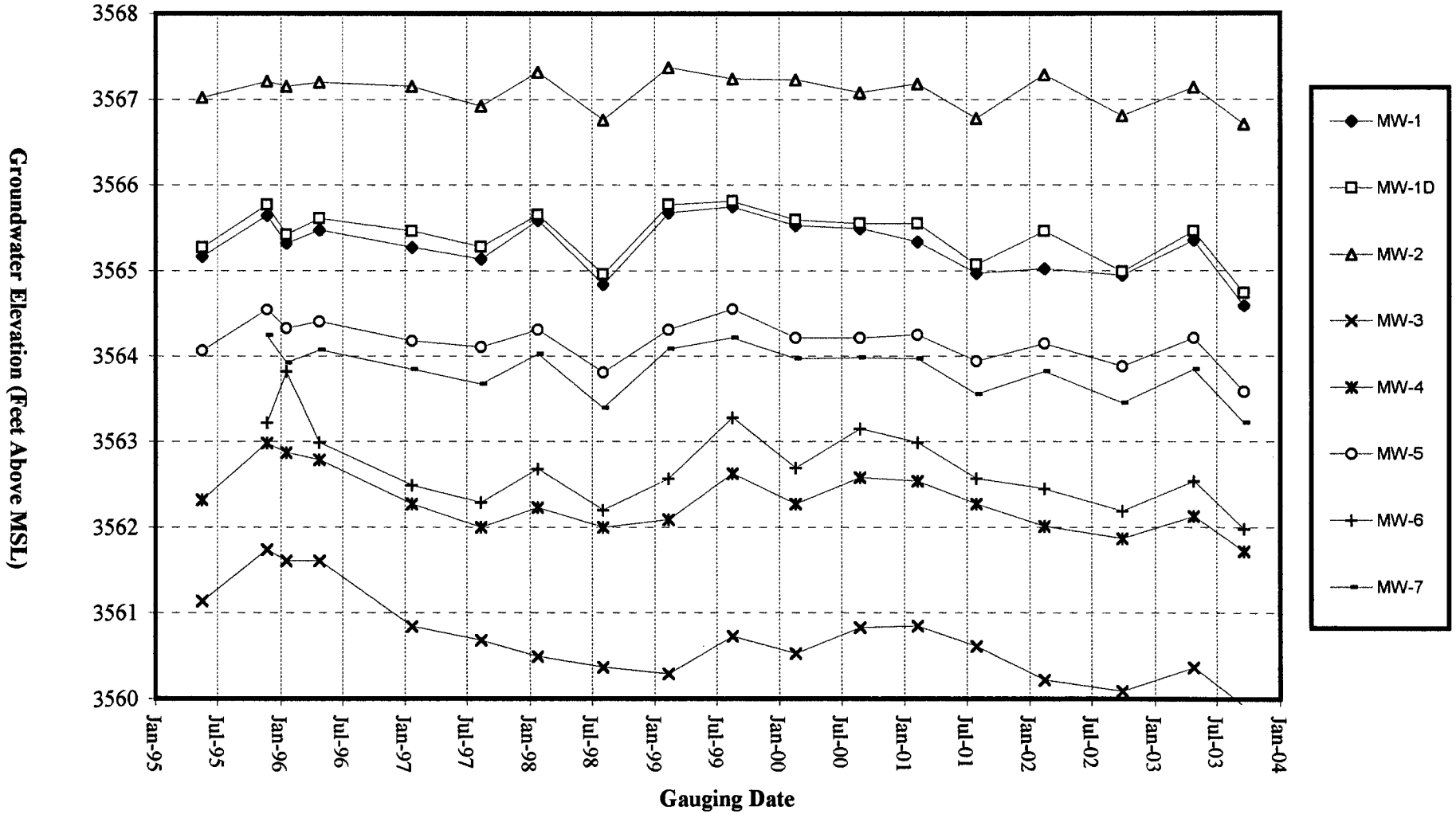


Table 2
Summary of Groundwater Elevations

Monitoring Well Number	Gauging Date	Ground Surface Elevations (Feet)	Top of Casing Elevation (Feet)	Groundwater Depth Below Top of Casing (Feet)	Groundwater Elevation (Feet)	LNAPL Thickness (Feet)
MW-1	05/16/95	3588.85	3591.15	28.05	3565.17	2.52
	11/21/95	3588.85	3591.15	27.03	3565.65	1.86
	01/18/96	3588.85	3591.15	27.62	3565.32	2.18
	04/24/96	3588.85	3591.15	27.39	3565.47	2.09
	01/22/97	3588.85	3591.15	27.68	3565.27	2.20
	08/11/97	3588.85	3591.15	26.03	3565.14	0.02
	01/23/98	3588.85	3591.15	25.63	3565.59	0.08
	08/03/98	3588.85	3591.15	26.32	3564.84	0.01
	02/10/99	3588.85	3591.15	25.55	3565.67	0.09
	08/17/99	3588.85	3591.15	25.41	3565.75	0.01
	02/17/00	3588.85	3591.15	25.69	3565.53	0.08
	08/23/00	3588.85	3591.15	25.73	3565.49	0.09
	02/08/01	3588.85	3591.15	26.32	3565.34	0.62
	07/30/01	3588.85	3591.15	26.26	3564.97	0.10
	02/13/02	3588.85	3591.15	26.69	3565.03	0.69
	09/27/02	3588.85	3591.15	26.77	3564.95	0.69
	04/25/03	3588.85	3591.15	25.95	3565.36	0.19
	09/18/03	3588.85	3591.15	26.56	3564.59	<0.01
MW-1D	05/16/95	3589.06	3591.31	26.04	3565.27	0.00
	11/21/95	3589.06	3591.31	25.54	3565.77	0.00
	01/18/96	3589.06	3591.31	25.89	3565.42	0.00
	04/24/96	3589.06	3591.31	25.70	3565.61	0.00
	01/22/97	3589.06	3591.31	25.85	3565.46	0.00
	08/11/97	3589.06	3591.31	26.03	3565.28	0.00
	01/23/98	3589.06	3591.31	25.66	3565.65	0.00
	08/03/98	3589.06	3591.31	26.35	3564.96	0.00
	02/10/99	3589.06	3591.31	25.54	3565.77	0.00
	08/17/99	3589.06	3591.31	25.50	3565.81	0.00
	02/17/00	3589.06	3591.31	25.72	3565.59	0.00
	08/23/00	3589.06	3591.31	25.76	3565.55	0.00
	02/08/01	3589.06	3591.31	25.76	3565.55	0.00
	07/30/01	3589.06	3591.31	26.24	3565.07	0.00
	02/13/02	3589.06	3591.31	25.85	3565.46	0.00
	09/27/02	3589.06	3591.31	26.32	3564.99	0.00
	04/25/03	3589.06	3591.31	25.85	3565.46	0.00
	09/18/03	3589.06	3591.31	26.57	3564.74	0.00
MW-2	05/16/95	3594.13	3596.30	29.28	3567.02	0.00
	11/21/95	3594.13	3596.30	29.09	3567.21	0.00
	01/18/96	3594.13	3596.30	29.15	3567.15	0.00
	04/24/96	3594.13	3596.30	29.10	3567.20	0.00
	01/22/97	3594.13	3596.30	29.15	3567.15	0.00
	08/11/97	3594.13	3596.30	29.38	3566.92	0.00
	01/23/98	3594.13	3596.30	28.98	3567.32	0.00
	08/03/98	3594.13	3596.30	29.54	3566.76	0.00
	02/10/99	3594.13	3596.30	28.93	3567.37	0.00
	08/17/99	3594.13	3596.30	29.06	3567.24	0.00
	02/17/00	3594.13	3596.30	29.07	3567.23	0.00
	08/23/00	3594.13	3596.30	29.22	3567.08	0.00
	02/08/01	3594.13	3596.30	29.12	3567.18	0.00
	07/30/01	3594.13	3596.30	29.52	3566.78	0.00
	02/13/02	3594.13	3596.30	29.01	3567.29	0.00
	09/27/02	3594.13	3596.30	29.49	3566.81	0.00
	04/25/03	3594.13	3596.30	29.16	3567.14	0.00
	09/18/03	3594.13	3596.30	29.59	3566.71	0.00

Table 2 (Continued)
Summary of Groundwater Elevations

Monitoring Well Number	Gauging Date	Ground Surface Elevations (Feet)	Top of Casing Elevation (Feet)	Groundwater Depth Below Top of Casing (Feet)	Groundwater Elevation (Feet)	LNAPL Thickness (Feet)
MW-3	05/16/95	3581.46	3583.86	22.72	3561.14	0.00
	11/21/95	3581.46	3583.86	22.12	3561.74	0.00
	01/18/96	3581.46	3583.86	22.25	3561.61	0.00
	04/24/96	3581.46	3583.86	22.25	3561.61	0.00
	01/22/97	3581.46	3583.86	23.02	3560.84	0.00
	08/11/97	3581.46	3583.86	23.18	3560.68	0.00
	01/23/98	3581.46	3583.86	23.37	3560.49	0.00
	08/03/98	3581.46	3583.86	23.49	3560.37	0.00
	02/10/99	3581.46	3583.86	23.57	3560.29	0.00
	08/17/99	3581.46	3583.86	23.13	3560.73	0.00
	02/17/00	3581.46	3583.86	23.33	3560.53	0.00
	08/23/00	3581.46	3583.86	23.03	3560.83	0.00
	02/08/01	3581.46	3583.86	23.01	3560.85	0.00
	07/30/01	3581.46	3583.86	23.25	3560.61	0.00
	02/13/01	3581.46	3583.86	23.64	3560.22	0.00
	09/27/02	3581.46	3583.86	23.77	3560.09	0.00
	04/25/03	3581.46	3583.86	23.49	3560.37	0.00
	09/18/03	3581.46	3583.86	23.94	3559.92	0.00
MW-4	05/16/95	3586.10	3588.77	26.45	3562.32	0.00
	11/21/95	3586.10	3588.77	25.79	3562.98	0.00
	01/18/96	3586.10	3588.77	25.90	3562.87	0.00
	04/24/96	3586.10	3588.77	25.98	3562.79	0.00
	01/22/97	3586.10	3588.77	26.50	3562.27	0.00
	08/11/97	3586.10	3588.77	26.77	3562.00	0.00
	01/23/98	3586.10	3588.77	26.54	3562.23	0.00
	08/03/98	3586.10	3588.77	26.77	3562.00	0.00
	02/10/99	3586.10	3588.77	26.68	3562.09	0.00
	08/17/99	3586.10	3588.77	26.14	3562.63	0.00
	02/17/00	3586.10	3588.77	26.50	3562.27	0.00
	08/23/00	3586.10	3588.77	26.19	3562.58	0.00
	02/08/01	3586.10	3588.77	26.23	3562.54	0.00
	07/30/01	3586.10	3588.77	26.50	3562.27	0.00
	02/13/02	3586.10	3588.77	26.76	3562.01	0.00
	09/27/02	3586.10	3588.77	26.90	3561.87	0.00
	04/25/03	3586.10	3588.77	26.64	3562.13	0.00
	09/18/03	3586.10	3588.77	27.05	3561.72	0.00
MW-5	05/16/95	3589.62	3592.16	28.10	3564.06	0.00
	11/21/95	3589.62	3592.16	28.24	3564.54	0.76
	01/18/96	3589.62	3592.16	28.45	3564.33	0.75
	04/24/96	3589.62	3592.16	28.41	3564.40	0.79
	01/22/97	3589.62	3592.16	28.45	3564.18	0.57
	08/11/97	3589.62	3592.16	28.13	3564.10	0.09
	01/23/98	3589.62	3592.16	27.89	3564.30	0.04
	08/03/98	3589.62	3592.16	28.79	3563.80	0.53
	02/10/99	3589.62	3592.16	28.48	3564.30	0.76
	08/17/99	3589.62	3592.16	27.93	3564.55	0.39
	02/17/00	3589.62	3592.16	28.03	3564.21	0.10
	08/23/00	3589.62	3592.16	28.07	3564.21	0.15
	02/08/01	3589.62	3592.16	27.92	3564.25	0.01
	07/30/01	3589.62	3592.16	28.24	3563.94	0.02
	02/13/02	3589.62	3592.16	28.02	3564.15	0.01
	09/27/02	3589.62	3592.16	28.28	3563.88	<0.00
	04/25/03	3589.62	3592.16	27.95	3564.21	<0.01
	09/18/03	3589.62	3592.16	28.58	3563.58	0.00

Table 2 (Continued)
Summary of Groundwater Elevations

Monitoring Well Number	Gauging Date	Ground Surface Elevations (Feet)	Top of Casing Elevation (Feet)	Groundwater Depth Below Top of Casing (Feet)	Groundwater Elevation (Feet)	LNAPL Thickness (Feet)
MW-6	11/16/95	3586.15	3587.93	24.71	3563.22	0.00
	01/18/96	3586.15	3587.93	24.11	3563.82	0.00
	04/24/96	3586.15	3587.93	24.94	3562.99	0.00
	01/22/97	3586.15	3587.93	25.44	3562.49	0.00
	08/11/97	3586.15	3587.93	25.64	3562.29	0.00
	01/23/98	3586.15	3587.93	25.25	3562.68	0.00
	08/03/98	3586.15	3587.93	25.73	3562.20	0.00
	02/10/99	3586.15	3587.93	25.36	3562.57	0.00
	08/17/99	3586.15	3587.93	24.65	3563.28	0.00
	02/17/00	3586.15	3587.93	25.24	3562.69	0.00
	08/23/00	3586.15	3587.93	24.78	3563.15	0.00
	02/08/01	3586.15	3587.93	24.94	3562.99	0.00
	07/30/01	3586.15	3587.93	25.36	3562.57	0.00
	02/13/02	3586.15	3587.93	25.48	3562.45	0.00
	09/27/02	3586.15	3587.93	25.74	3562.19	0.00
	04/25/03	3586.15	3587.93	25.39	3562.54	0.00
	09/18/03	3586.15	3587.93	25.95	3561.98	0.00
MW-7	11/21/95	3588.06	3589.40	25.16	3564.24	0.00
	01/18/96	3588.06	3589.40	25.48	3563.92	0.00
	04/24/96	3588.06	3589.40	25.33	3564.07	0.00
	01/22/97	3588.06	3589.40	25.56	3563.84	0.00
	08/11/97	3588.06	3589.40	25.73	3563.67	0.00
	01/23/98	3588.06	3589.40	25.38	3564.02	0.00
	08/03/98	3588.06	3589.40	26.01	3563.39	0.00
	02/10/99	3588.06	3589.40	25.32	3564.08	0.00
	08/17/99	3588.06	3589.40	25.19	3564.21	0.00
	02/17/00	3588.06	3589.40	25.43	3563.97	0.00
	08/23/00	3588.06	3589.40	25.42	3563.98	0.00
	02/08/01	3588.06	3589.40	25.43	3563.97	0.00
	07/30/01	3588.06	3589.40	25.85	3563.55	0.00
	02/13/02	3588.06	3589.40	25.58	3563.82	0.00
	09/27/02	3588.06	3589.40	25.95	3563.45	0.00
	04/25/03	3588.06	3589.40	25.56	3563.84	0.00
	09/18/03	3588.06	3589.40	26.18	3563.22	0.00

* Elevations initially surveyed by John W. West Engineering Company of Hobbs, NM.

The monitoring well casings were marked on the north side to provide consistent reference points for future gauging operations.

** Groundwater Elev. Corrected for LNAPL = Top of Casing Elev. - [Groundwater Depth - (SG x LNAPL Thickness)].

Groundwater direction is to the southeast with a hydraulic gradient of approximately 0.0072 feet/foot.

5.0 Groundwater Quality Conditions

5.1 Distribution of Hydrocarbons in Groundwater

A historical listing of BTEX concentrations obtained from the sampled monitoring wells is summarized in Table 3. Hydrocarbon concentration maps depicting the BTEX concentrations for the two 2003 sampling events conducted on April 25, 2003 and September 18, 2003, are presented in Figures 3A and 3B, respectively. Figure 4 depicts the historic benzene concentrations in the groundwater versus time over the life of the monitoring project. The historic BTEX concentrations in the groundwater versus time at MW-7 are depicted in Figure 5. Based on the most recent analytical, the distribution of hydrocarbons at the Monument Booster Station is described below.

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations in monitoring wells MW-1D, MW-2, MW-3, MW-4, and MW-6 are presently below WQCC standards. With the exception of the August 1999 sample recovered from MW-2 and the August 1999 and February 2000 samples recovered from MW-3, the BTEX concentrations in each of these wells have remained below the WQCC standard levels since 1995.

- Only the benzene concentrations from the current and historic groundwater samples recovered from MW-1 (0.057 mg/L), MW-5 (0.022 mg/L), and MW-7 (0.018 mg/L) exceed the WQCC standard of 0.010 mg/L.

5.2 Distribution of Dissolved WQCC Metals and Ions in Groundwater

Historical groundwater sample analytical results for metals and ions are presented in Table 4. The WQCC standards are listed in the table for comparison and constituents with concentrations above the WQCC standards are highlighted in boldface type. Analyses for Al, As, and Cr, were discontinued during the September 2003 sampling event as recommended in the 2002 Annual Groundwater Monitoring Report since these constituents have been consistently below WQCC standards for over five years. The laboratory reports and COC documentation are included in Appendix A. A graph that depicts the historic concentrations of total dissolved solids (TDS), chlorides, and sulfates versus time for monitoring well MW-2 is provided in Figure 6.

The WQCC metal results for the 2003 annual sampling event indicate no constituents exceeded the WQCC standards with the exception of manganese in MW-1, MW-5, MW-6, and MW-7, and iron in MW-1, MW-5 and MW-7. These elevated levels may be due to the reduced chemical environment caused by the presence of dissolved hydrocarbons. Under this condition, certain metal ions (particularly manganese and iron) have a greater affinity to go into the dissolved state. In addition, iron and manganese are byproducts from natural biodegradation processes, thus resulting in higher concentrations. In contrast, upgradient monitoring well MW-2, and downgradient monitoring wells MW-3, and MW-4 contain very low concentrations of iron or manganese. Based on the results of the metal analyses during the 2003 annual sampling event, the groundwater in the site area is not adversely affected or impacted with dissolved metals.

The major ion analyses for the 2003 annual sampling event indicate that no constituents exceeded the WQCC standards with the exception of chloride and TDS in MW-2, fluoride in MW-1, MW-1D, MW-2, MW-3, MW-5, and MW-7.

Chloride (2,170 mg/L) and TDS (4,440 mg/L) concentrations in MW-2 have increased since August 1998 and may indicate a potential upgradient release of produced water north and/or west of the Monument Booster Station.

Since fluoride is not a constituent for the gas processing activities on site, its presence is likely due to natural conditions as it is a common naturally occurring compound in groundwater (USGS Water-Supply Paper 2254, 1989, pgs.120-123).

Since the groundwater on site is not used for potable drinking water, nor will it be in the foreseeable future, and the constituents of concern above WQCC standards are limited to being on site, there is low risk to human health and the environment.

Table 3
Summary of Dissolved BTEX Concentrations

Monitoring Well	Sampling Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)
MW-1	09/18/03	**0.057**	<0.010	<0.010	<0.010
MW-1D	05/16/95	**0.018**	0.006	0.015	0.016
	11/15/95	0.003	<0.001	0.002	0.001
	01/18/96	0.004	<0.001	0.003	0.009
	04/24/96	<0.001	<0.001	<0.001	<0.001
	01/22/97	0.001	<0.001	0.001	<0.001
	08/11/97	<0.001	<0.001	<0.001	<0.001
	01/23/98	<0.001	<0.001	<0.001	<0.001
	08/03/98	<0.001	<0.001	<0.001	<0.001
	02/10/99	<0.001	<0.001	<0.001	<0.001
	08/17/99	<0.001	<0.001	<0.001	<0.001
	02/18/00	0.002	<0.001	0.003	0.001
	08/23/00	<0.005	<0.005	<0.005	<0.005
	02/09/01	<0.001	<0.001	<0.001	0.001
	07/30/01	<0.001	<0.001	<0.001	<0.001
	02/13/02	<0.001	<0.001	<0.001	<0.001
	09/27/02	<0.001	<0.001	<0.001	<0.001
	04/25/03	<0.005	<0.005	<0.005	<0.005
	09/18/03	0.002	<0.001	<0.001	<0.001
MW-2	05/16/95	<0.001	<0.001	<0.001	<0.001
	11/15/95	**0.044***	0.002*	0.006*	0.009*
	01/18/96	<0.001	<0.001	<0.001	<0.001
	04/24/96	<0.001	<0.001	<0.001	<0.001
	01/22/97	<0.001	<0.001	<0.001	<0.001
	08/11/97	<0.001	<0.001	<0.001	<0.001
	01/23/98	<0.001	<0.001	<0.001	<0.001
	08/03/98	<0.001	<0.001	<0.001	<0.001
	02/10/99	<0.001	<0.001	<0.001	<0.001
	08/17/99	**0.017**	0.013	0.002	0.003
	02/18/00	<0.001	<0.001	<0.001	<0.001
	08/23/00	<0.001	<0.001	<0.001	<0.001
	02/08/01	<0.001	<0.001	<0.001	<0.001
	07/30/01	<0.001	<0.001	<0.001	<0.001
	02/13/02	<0.001	<0.001	<0.001	<0.001
	09/27/02	<0.001	<0.001	<0.001	<0.001
	04/25/03	<0.001	<0.001	<0.001	<0.001
	09/18/03	0.002	<0.001	<0.001	<0.001
MW-3	05/16/95	<0.001	<0.001	<0.001	<0.001
	11/15/95	<0.001	<0.001	<0.001	<0.001
	01/18/96	<0.001	<0.001	<0.001	<0.001
	04/24/96	<0.001	<0.001	<0.001	<0.001
	01/22/97	<0.001	<0.001	<0.001	<0.001
	08/11/97	<0.001	<0.001	<0.001	<0.001
	01/23/98	<0.001	<0.001	<0.001	<0.001
	08/03/98	0.007	<0.001	<0.001	<0.001
	02/10/99	<0.005	<0.005	<0.005	<0.005
	08/17/99	**0.043**	<0.005	<0.005	<0.005
	02/17/00	**0.021**	<0.005	<0.005	<0.005
	08/23/00	0.006	<0.005	<0.005	<0.005
	02/08/01	0.004	0.002	0.001	0.005
	07/30/01	0.002	<0.001	<0.001	<0.001
	02/13/02	0.002	<0.001	<0.001	<0.001
	09/27/02	<0.005	<0.005	<0.005	<0.005
	04/25/03	<0.005	<0.005	<0.005	<0.005
	09/18/03	0.002	<0.001	<0.001	<0.001

Table 3 (Continued)

Summary of Dissolved BTEX Concentrations

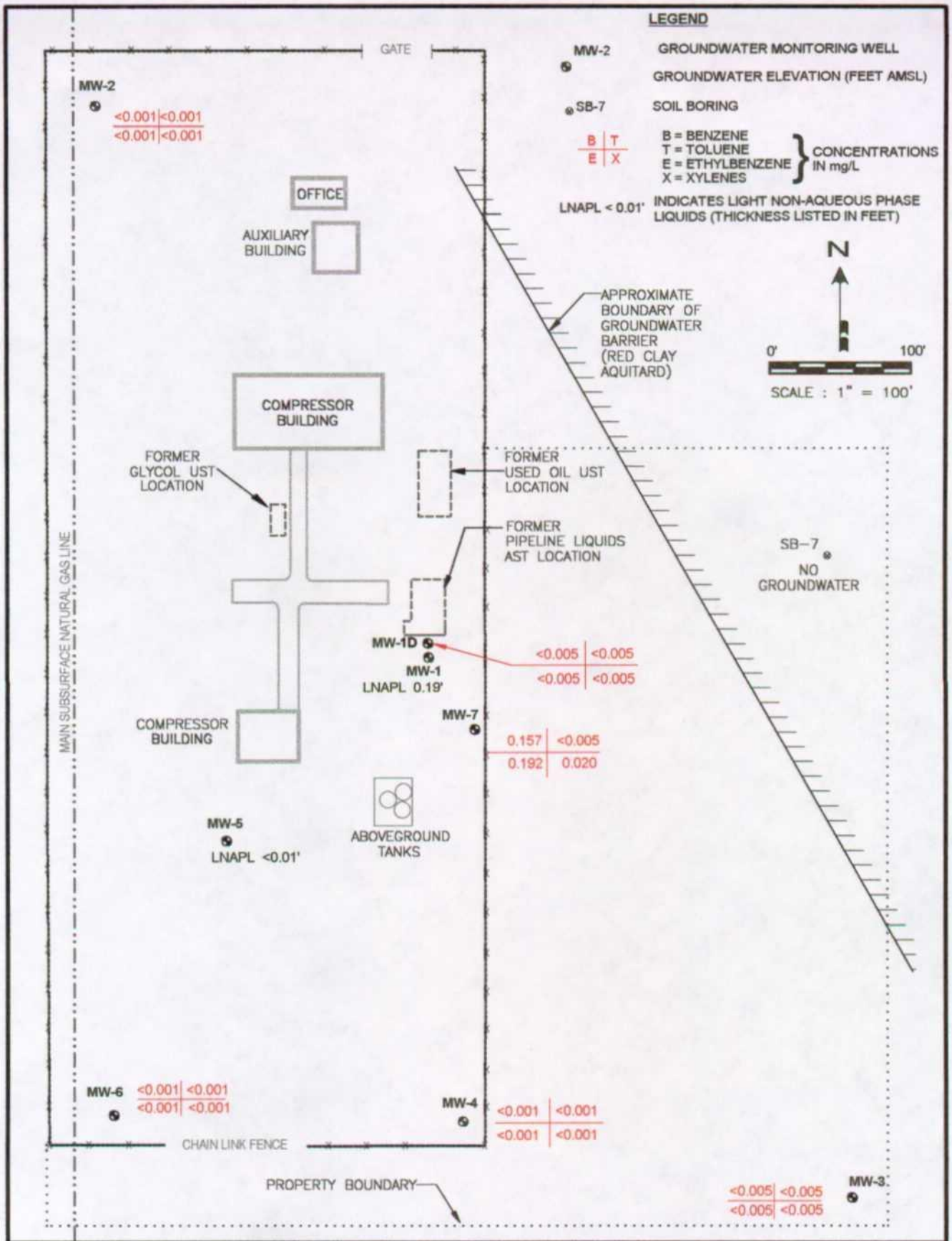
Monitoring Well	Sampling Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)
MW-4	05/16/95	<0.001	<0.001	<0.001	<0.001
	11/15/95	**0.045***	0.002*	0.006*	0.010*
	01/18/96	0.003	<0.001	<0.001	<0.001
	04/24/96	<0.002	<0.002	<0.002	<0.002
	01/22/97	0.002	<0.001	<0.001	<0.001
	08/11/97	0.001	<0.001	<0.001	<0.001
	01/23/98	<0.001	<0.001	<0.001	<0.001
	08/03/98	<0.001	<0.001	<0.001	<0.001
	02/10/99	<0.001	<0.001	<0.001	<0.001
	08/17/99	<0.001	<0.001	<0.001	0.001
	02/18/00	<0.005	<0.005	<0.005	<0.005
	08/23/00	<0.005	<0.005	<0.005	<0.005
	02/08/01	0.002	<0.001	<0.001	0.002
	07/30/01	<0.001	<0.001	<0.001	<0.001
	04/25/03	<0.001	<0.001	<0.001	<0.001
	09/18/03	<0.001	<0.001	<0.001	<0.001
MW-5	05/16/95	**0.265**	0.009	0.261	0.050
	09/27/02	**0.028**	<0.005	0.049	0.043
	09/18/03	**0.022**	<0.005	0.020	0.016
MW-6	11/16/95	0.003	<0.001	0.001	0.003
	01/17/96	0.002	<0.001	<0.001	<0.001
	04/24/96	<0.001	<0.001	<0.001	<0.001
	01/22/97	0.001	<0.001	<0.001	<0.001
	08/11/97	<0.001	<0.001	<0.001	0.001
	01/23/98	<0.001	<0.001	<0.001	<0.001
	08/03/98	<0.001	<0.001	<0.001	<0.001
	02/10/99	<0.001	<0.001	<0.001	0.014
	08/17/99	0.002	<0.001	<0.001	0.012
	02/18/00	<0.001	<0.001	0.004	0.006
	08/23/00	<0.001	<0.001	0.004	0.011
	02/08/01	<0.001	<0.001	<0.001	0.011
	07/30/01	<0.001	<0.001	<0.001	<0.001
	02/13/02	<0.001	<0.001	<0.001	<0.001
	09/27/02	<0.005	<0.005	<0.005	<0.005
	04/25/03	<0.001	<0.001	<0.001	<0.001
	09/18/03	0.002	0.002	<0.001	0.001
MW-7	11/15/95	**0.465**	<0.001	0.205	0.163
	01/17/96	**1.130**	0.003	0.476	0.365
	04/24/96	**0.585**	<0.002	0.251	0.013
	01/22/97	**0.896**	<0.005	0.240	0.330
	08/11/97	**0.317**	0.020	0.155	0.049
	01/23/98	**0.876**	<0.005	0.486	0.181
	08/03/98	**0.094**	<0.005	0.064	0.007
	02/10/99	**0.597**	<0.005	0.440	0.120
	08/17/99	**0.705**	<0.005	0.060	0.556
	02/18/00	**0.573**	<0.005	0.490	0.226
	08/23/00	**0.546**	0.006	0.484	0.177
	02/09/01	**0.355**	<0.005	0.424	0.052
	07/30/01	**0.017**	<0.005	0.058	<0.005
	02/13/02	**0.228**	<0.005	0.094	0.050
	09/27/02	**0.015**	<0.005	0.017	<0.005
	04/25/03	**0.157**	<0.005	0.192	0.020
	09/18/03	**0.018**	<0.001	0.023	0.004
WQCC Standards		0.010	0.75	0.75	0.62

Analyses performed by Trace Analysis, Inc., Lubbock, Texas.

All samples analyzed for BTEX using EPA Method 8020 except for samples obtained on May 16, 1995 (EPA Method 8240).

Values listed in **boldface** type indicate concentrations exceed New Mexico Water Quality Control Commission (WQCC) standards.

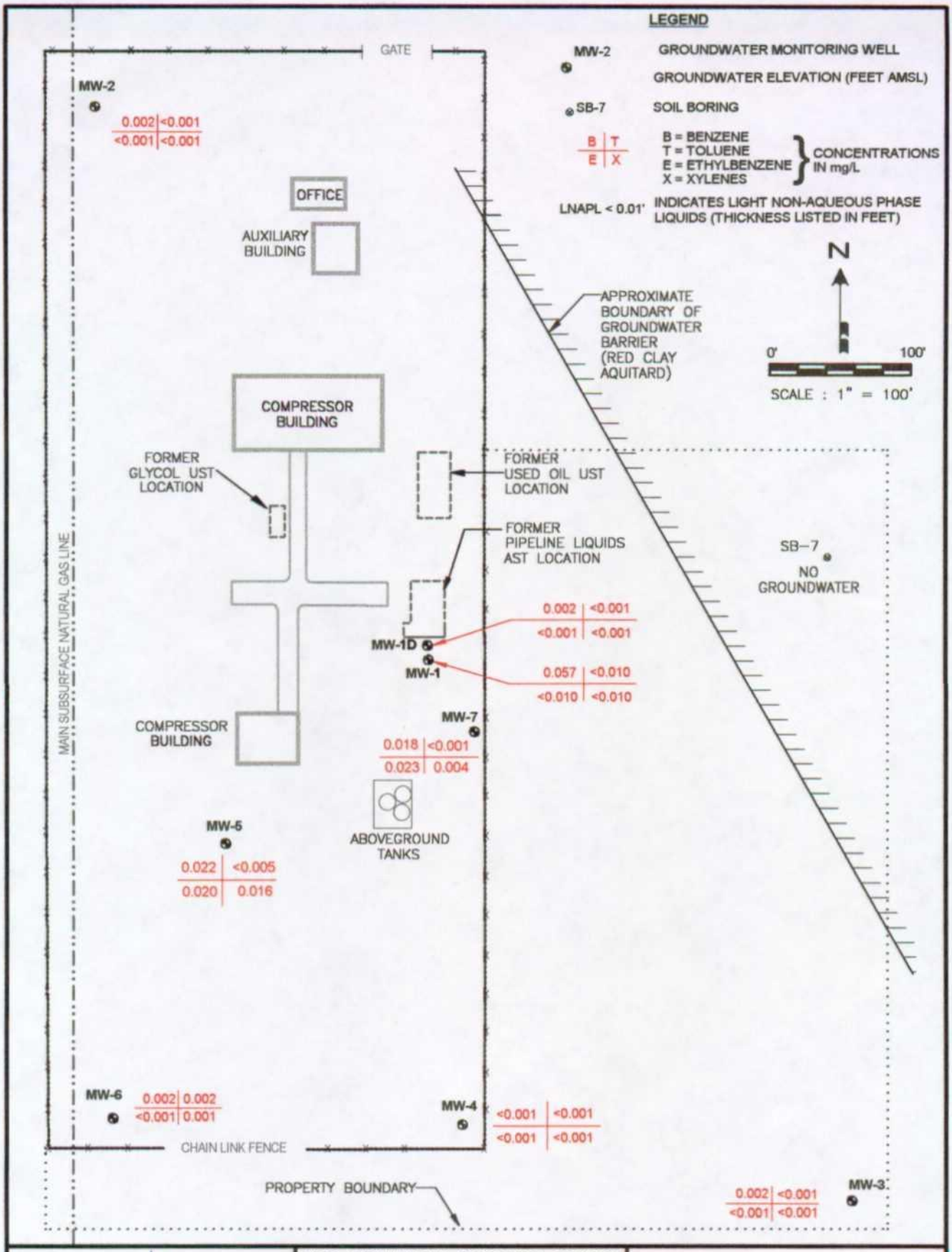
* BTEX cross-contamination occurred on samples obtained from monitoring wells MW-2 & MW-4 during the 11/15/95 sampling event.



TRIDENT ENVIRONMENTAL

SITE: MONUMENT BOOSTER STATION	
DATE: 04/25/03	REV. NO.:
AUTHOR: GJV	DRN BY: DTL
CK'D BY: DTL	FILE:monument

Figure 3A
MONUMENT BOOSTER STATION
BTEX CONCENTRATION MAP
Sampling Date: April 25, 2003



TRIDENT ENVIRONMENTAL

SITE: MONUMENT BOOSTER STATION	
DATE: 09/18/03	REV. NO.:
AUTHOR: GJV	DRN BY: DTL
CK'D BY: DTL	FILE:monument

Figure 3B
MONUMENT BOOSTER STATION
BTEX CONCENTRATION MAP
Sampling Date: September 18, 2003

Figure 4
Benzene Versus Time

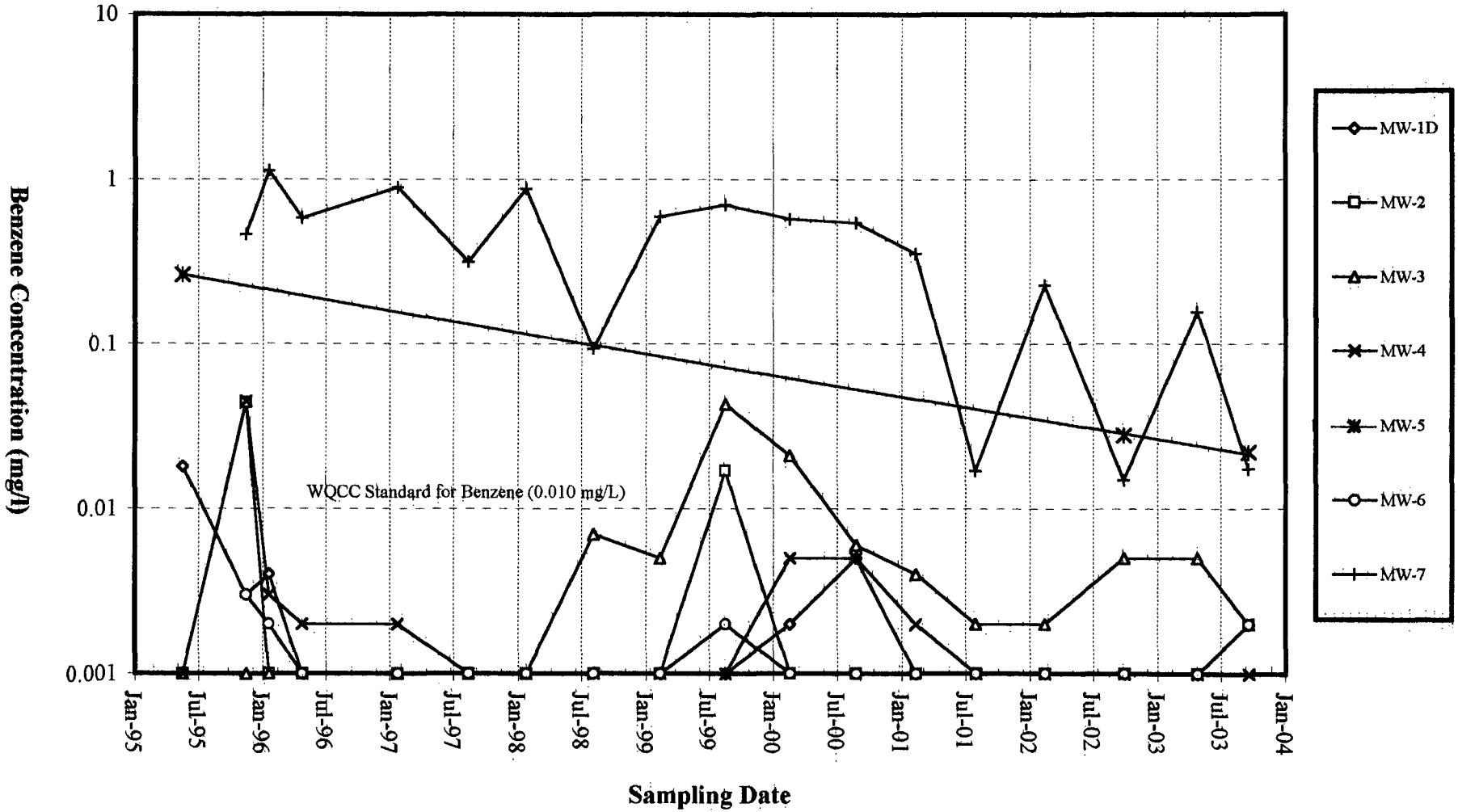
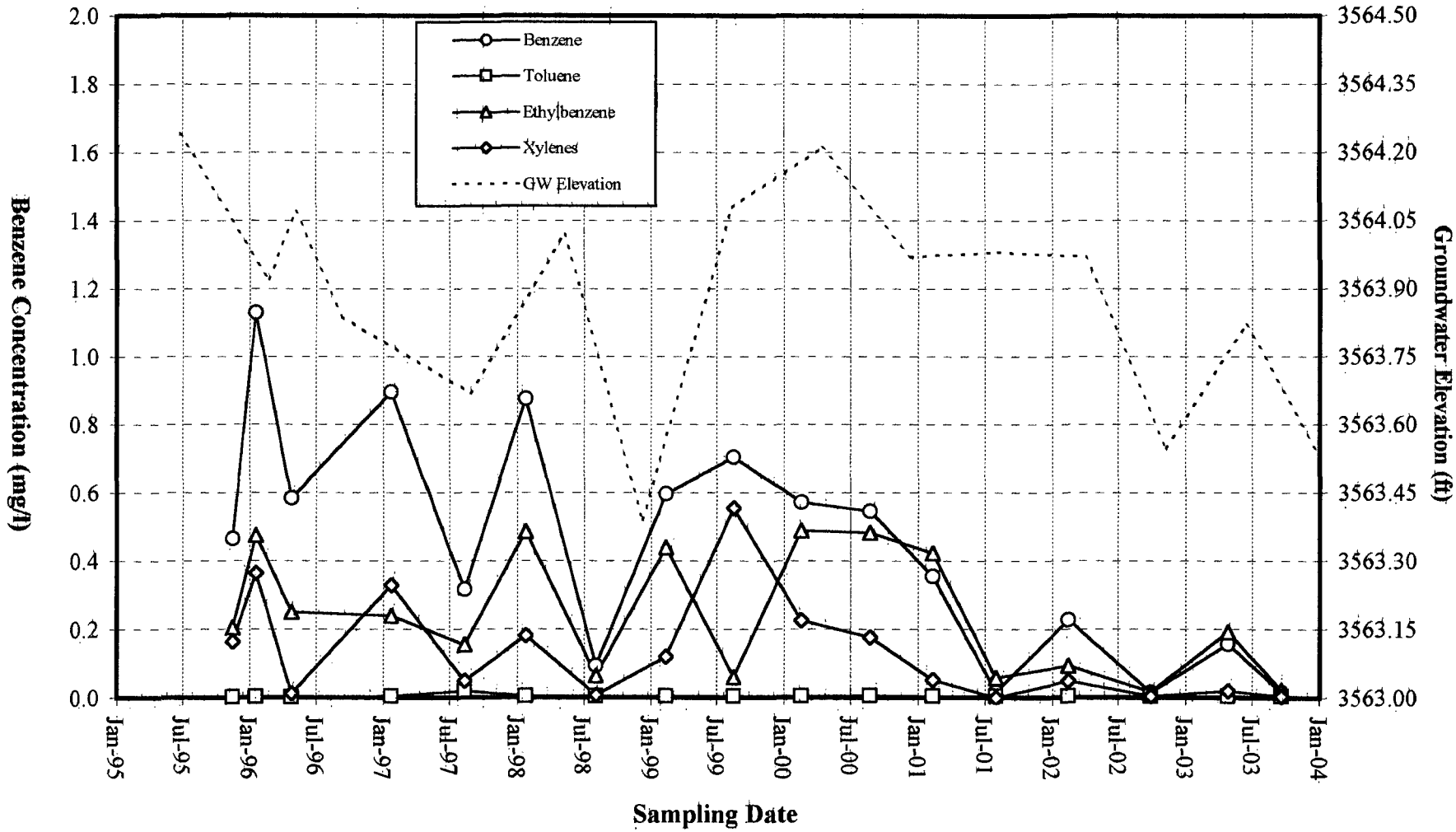


Figure 5
BTEX Concentrations and Groundwater Elevation vs Time (MW-7)



Summary of WQCC Metal and Major Ion Analytical Results

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Table 4
Summary of Metal and Major Ion Analytical Results

Constituent	Date	MW-1 (mg/L)	MW-1D (mg/L)	MW-2 (mg/L)	MW-3 (mg/L)	MW-4 (mg/L)	MW-5 (mg/L)	MW-6 (mg/L)	MW-7 (mg/L)	WQCC Standards (mg/L)
Aluminum (Al)	05-16-96	0.55	1.34	**13.10**	0.88	**8.04**	0.24	---	---	5
	04-24-96	NS	0.2	<0.2	<0.2	<0.2	NS	0.2	0.3	
	08-11-97	NS	<0.2	0.32	<0.2	<0.2	NS	0.23	<0.2	
	08-03-98	NS	<0.1	0.17	1.7	0.10	NS	<0.1	0.14	
	08-17-99	NS	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	
	08-23-00	NS	<0.2	<0.2	<0.2	<0.2	NS	<0.2	<0.2	
	07-30-01	NS	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	
	09-27-02	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Arsenic (As)	05-16-96	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	---	---	0.1
	04-24-96	NS	0.012	0.011	0.019	0.008	NS	**0.238**	0.004	
	08-11-97	NS	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	
	08-03-98	NS	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	
	08-17-99	NS	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	
	08-23-00	NS	<0.05	<0.05	<0.05	<0.05	NS	<0.05	0.06	
	07-30-01	NS	<0.05	<0.05	<0.05	<0.05	NS	<0.05	0.07	
	09-27-02	NS	<0.05	<0.05	<0.05	<0.05	**0.119**	<0.05	<0.05	
Boron (B)	05-16-96	**0.85**	0.22	0.37	0.09	0.14	0.39	---	---	0.75
	04-24-96	NS	0.11	0.38	<0.03	0.06	NS	0.22	0.6	
	08-11-97	NS	<0.2	<0.2	<0.2	<0.2	NS	**0.79**	<0.2	
	08-03-98	NS	<0.75	<0.75	<0.75	<0.75	NS	<0.75	<0.75	
	08-17-99	NS	0.15	0.23	0.19	0.21	NS	0.38	**0.85**	
	07-30-01	NS	0.14	0.18	0.16	0.18	NS	0.38	0.35	
	09-27-02	NS	0.299	0.527	0.510	0.500	**0.774**	**1.17**	0.610	
	09-18-03	0.438	0.153	0.305	0.265	0.288	0.264	0.653	0.262	

Analyses performed by Trace Analysis, Inc. using EPA Methods 200.7, 239.2, 270.2, 272.2, 6010B, 160.1 and 300.
Standards **Bold** values indicate concentrations exceed WQCC groundwater standards as listed as specified in Regulation 3-103.
NS Indicates monitoring well was not sampled (due to presence of free product).
--- Indicates monitoring well was installed after this sampling date.
Samples were not filtered on 05-17-95, therefore results indicate total (dissolved and undissolved) metal concentrations.
Samples were filtered with a 45 mm element between 04-24-96 and 09-27-02 therefore results indicate dissolved metal concentrations.

Table 4 (continued)
Summary of Metal and Major Ion Analytical Results

Constituent	Date	MW-1 (mg/L)	MW-1D (mg/L)	MW-2 (mg/L)	MW-3 (mg/L)	MW-4 (mg/L)	MW-5 (mg/L)	MW-6 (mg/L)	MW-7 (mg/L)	WQCC Std. (mg/L)
Chromium (Cr)	05-16-96	0.01	<0.01	0.02	0.01	0.02	0.02	---	---	0.05
	04-24-96	NS	<0.05	**0.06**	<0.05	<0.05	NS	**0.06**	<0.05	
	08-11-97	NS	<0.05	<0.05	<0.05	<0.05	NS	<0.05	<0.05	
	08-03-98	NS	<0.05	<0.05	<0.05	<0.05	NS	<0.05	<0.05	
	08-17-99	NS	<0.05	<0.05	<0.05	<0.05	NS	<0.05	<0.05	
	08-23-00	NS	<0.01	0.02	<0.01	<0.01	NS	<0.01	<0.01	
	07-30-01	NS	<0.01	0.02	<0.01	<0.01	NS	<0.01	<0.01	
	09-27-02	NS	<0.01	0.033	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron (Fe)	05-16-96	**25.58**	**4.6**	**5.82**	0.53	**4.68**	**1.75**	---	---	1
	04-24-96	NS	0.06	0.07	0.17	0.08	NS	0.15	<0.03	
	08-11-97	NS	0.28	0.24	0.14	0.08	NS	0.21	0.43	
	08-03-98	NS	<0.1	<0.1	0.55	<0.1	NS	0.26	**6.1**	
	08-17-99	NS	0.19	<0.1	<0.1	<0.1	NS	0.42	**8.1**	
	08-23-00	NS	0.20	<0.05	<0.05	<0.05	NS	<0.05	**7.4**	
	07-30-01	NS	0.21	<0.05	<0.05	<0.05	NS	0.36	**5.3**	
	02-13-02	NS	0.149	<0.05	<0.05	<0.05	NS	0.484	**8.25**	
	09-27-02	NS	<0.05	<0.05	<0.05	<0.05	**3.37**	0.52	**4.21**	
	09-18-03	**1.43**	<0.05	<0.05	<0.05	<0.05	**2.87**	0.725	**3.77**	
Manganese (Mn)	05-16-96	**0.67**	**0.31**	0.12	0.08	0.11	**0.58**	---	---	0.2
	04-24-96	NS	**0.37**	<0.01	<0.01	<0.01	NS	**0.28**	**0.38**	
	08-11-97	NS	**0.35**	<0.01	<0.01	<0.01	NS	**0.30**	**0.37**	
	08-03-98	NS	**0.22**	<0.1	<0.1	<0.1	NS	**0.36**	**0.41**	
	08-17-99	NS	0.18	<0.1	<0.1	<0.1	NS	**0.27**	0.19	
	08-23-00	NS	**0.20**	<0.01	<0.01	0.03	NS	**0.34**	**0.22**	
	07-30-01	NS	**0.20**	<0.025	0.03	0.07	NS	**0.34**	**0.33**	
	02-13-02	NS	0.186	<0.025	0.525	0.066	NS	**0.289**	**0.261**	
	09-27-02	NS	0.157	<0.025	0.057	0.063	**0.397**	**0.351**	**0.310**	
	09-18-03	**0.302**	0.133	<0.025	0.082	0.056	**0.469**	**0.373**	**0.312**	

Table 4 (continued)
Summary of Metal and Major Ion Analytical Results

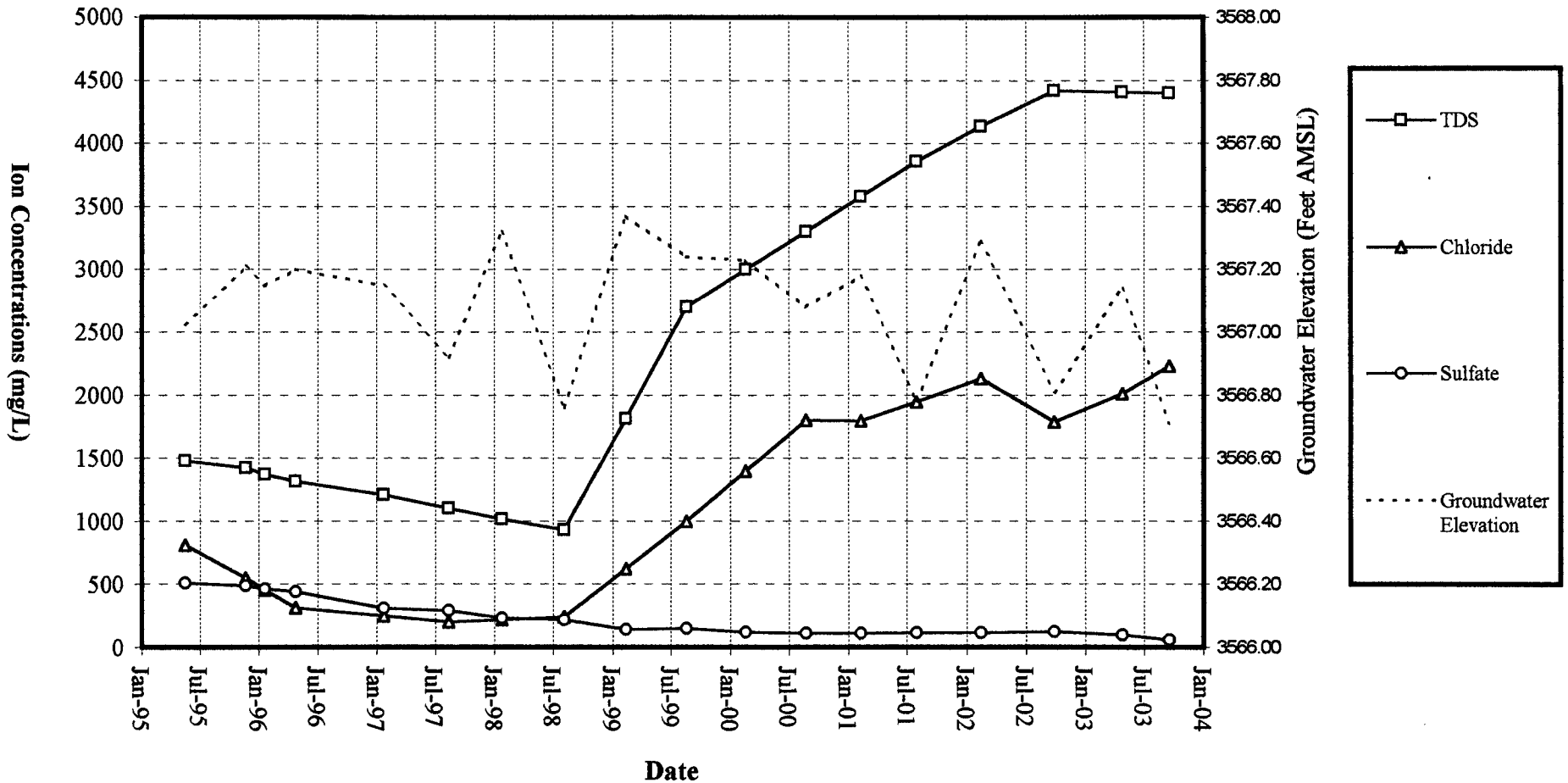
Constituent	Date	MW-1 (mg/L)	MW-1D (mg/L)	MW-2 (mg/L)	MW-3 (mg/L)	MW-4 (mg/L)	MW-5 (mg/L)	MW-6 (mg/L)	MW-7 (mg/L)	WQCC Std. (mg/L)
Chloride (Cl)	05-16-95	NS	77	**812**	188	152	80	---	---	250
	04-24-96	NS	124	**314**	134	167	NS	186	143	
	08-11-97	NS	180	200	140	140	NS	160	180	
	08-03-98	NS	120	240	160	160	NS	150	160	
	08-17-99	NS	91	**1,000**	190	170	NS	160	120	
	08-23-00	NS	65	**1,800**	190	150	NS	140	74	
	07-30-01	NS	59	**1,790**	183	146	NS	123	67	
	09-27-02	NS	46	**2,170**	181	139	50	126	50	
	09-18-03	48.4	49.0	**2,230**	176	147	49.9	121	50.3	
Fluoride (F)	05-16-95	NS	**1.8**	1.1	**1.8**	1.2	1.4	---	---	1.6
	04-24-96	NS	1.6	1.1	1.5	1.1	NS	0.9	**1.8**	
	08-11-97	NS	1.9	1.3	1.5	1.1	NS	0.85	**1.8**	
	08-03-98	NS	**2.4**	**1.8**	**1.6**	1.3	NS	1.3	**1.8**	
	08-17-99	NS	**2.7**	**1.7**	**2.0**	1.5	NS	1.5	**2.7**	
	08-23-00	NS	**2.9**	**1.8**	**2.0**	**1.8**	NS	**1.8**	**2.7**	
	07-30-01	NS	**3.0**	**1.9**	**2.1**	**1.9**	NS	**2.0**	**2.5**	
	09-27-02	NS	**2.9**	**1.5**	**1.8**	1.5	**2.1**	1.5	**2.3**	
	09-18-03	**2.72**	**2.77**	**2.24**	**1.69**	1.48	**2.01**	1.57	**2.40**	
Nitrate (NO_3-N)	05-16-95	NS	1.37	7.42	5.62	3.69	0.56	---	---	10.0
	04-24-96	NS	<0.1	0.3	0.3	0.1	NS	<0.1	<0.1	
	08-11-97	NS	<1.0	9	9.4	<1.0	NS	<1.0	<1.0	
	01-23-98	NS	2.8	30	15	1	NS	0.28	0.39	
	08-03-98	NS	4.0	4.0	4.0	2.9	NS	<1.0	<1.0	
	08-17-99	NS	3.8	4.0	3.5	2.5	NS	<1.0	<1.0	
	08-23-00	NS	3.4	2.0	3.3	2.6	NS	<0.1	<1.0	
	07-30-01	NS	2.1	2.6	1.8	1.1	NS	<1.0	<1.0	
	02-13-02	NS	2.03	2.69	1.49	<1.0	NS	<1.0	<1.0	
	09-27-02	NS	0.5	1.3	0.1	0.1	0.6	0.2	0.3	
	04-25-03	NS	1.0	0.1	<0.1	0.3	NS	<0.1	<0.1	
	09-18-03	0.58	0.48	0.76	0.49	0.70	0.39	1.07	0.82	

Table 4 (continued)
Summary of Metal and Major Ion Analytical Results

Constituent	Date	MW-1 (mg/L)	MW-1D (mg/L)	MW-2 (mg/L)	MW-3 (mg/L)	MW-4 (mg/L)	MW-5 (mg/L)	MW-6 (mg/L)	MW-7 (mg/L)	WQCC Standards (mg/L)
Sulfate (SO_4)	05-16-95	NS	174	509	115	136	67	---	---	600
	04-24-96	NS	169	443	95	115	NS	70	149	
	08-11-97	NS	110	290	75	96	NS	37	76	
	01-23-98	NS	190	230	240	180	NS	230	180	
	08-03-98	NS	100	220	80	100	NS	45	90	
	08-17-99	NS	120	150	84	120	NS	82	14	
	08-23-00	NS	98	110	72	100	NS	57	19	
	07-30-01	NS	93	116	67	92	NS	63	66	
	02-13-02	NS	86.3	115	67.6	90.6	NS	48.9	30.9	
	09-27-02	NS	83	125	74	94	57	39	71	
	04-25-03	NS	140	97.0	102	104	NS	53.5	45.8	
	09-18-03	45.5	47.0	59.2	43.6	51.8	39.2	24.4	44.8	
Total Dissolved Solids (TDS)	05-16-95	NS	634	**1,478**	516	716	692	---	---	1,000
	04-24-96	NS	702	**1,318**	598	759	NS	929	828	
	08-11-97	NS	770	**1,100**	670	800	NS	810	860	
	08-03-98	NS	640	930	640	750	NS	870	800	
	08-17-99	NS	790	**2,700**	830	790	NS	920	850	
	08-23-00	NS	560	**3,300**	770	780	NS	900	790	
	07-30-01	NS	548	**4,420**	844	791	NS	907	658	
	09-27-02	NS	493	**4,440**	776	810	549	934	574	
	09-18-03	506	517	**4,400**	754	882	512	858	533	

Analyses performed by Trace Analysis, Inc. using EPA Methods 200.7, 239.2, 270.2, 272.2, 6010B, 160.1 and 300.
Standards **Bold** values indicate concentrations exceed WQCC groundwater standards as listed as specified in Regulation 3-103.
NS Indicates monitoring well was not sampled (due to presence of free product).
--- Indicates monitoring well was installed after this sampling date.
Samples were not filtered on 05-17-95, therefore results indicate total (dissolved and undissolved) metal concentrations.
Samples were filtered with a 45 mm element between 04-24-96 and 07-30-01 therefore results indicate dissolved metal concentrations.

Figure 6
TDS, Chloride, and Sulfate Concentrations Versus Time (MW-2)



6.0 Monitoring Natural Attenuation

During biodegradation, dissolved BTEX is ultimately transformed into carbon dioxide, methane, and water. Biodegradation of BTEX dissolved in groundwater results in a reduction of contaminant concentration (and mass) and slowing (retardation) of the contaminant relative to the average advective groundwater flow velocity. Indigenous hydrocarbon-degrading microorganisms transform available nutrients into forms useful for energy and cell reproduction by facilitating the transfer of electrons from donors to acceptors. This results in oxidation of the electron donor and reduction of the electron acceptor. Electron donors include natural organic material and petroleum hydrocarbons. Electron acceptors are elements or compounds that occur in relatively oxidized states. The more important electron acceptors in groundwater, in order of utilization, include dissolved oxygen, (DO), nitrate (NO_3), ferric iron (Fe^{3+}), sulfate (SO_4), and carbon dioxide (CO_2).

Biodegradation causes measurable changes in groundwater geochemistry. During aerobic respiration, oxygen is reduced to water, and dissolved oxygen concentrations decrease. In anaerobic systems where nitrate is the electron acceptor, the nitrate is reduced (denitrification) to NO_2^-, N_2O, NO, NH^{4+}, or N_2, and nitrate concentrations decrease. In anaerobic systems where ferric iron (Fe^{3+}) is the electron acceptor, it is reduced (iron reduction) to ferrous iron (Fe^{2+}), and Fe^{2+} concentrations increase. In anaerobic systems where sulfate is the electron acceptor, it is reduced to hydrogen sulfide (H_2S), and sulfate concentrations decrease (sulfate reduction). In anaerobic systems where CO_2 is used as an electron acceptor, methanogenic bacteria reduce it (methanogenosis) to methane (CH_4).

Using the stoichiometric derivations, the mass of benzene degraded per unit mass of electron acceptor utilized and metabolic byproduct produced was calculated to determine the biodegradation capacity of these constituents relative to the highest observed benzene concentration on site. A conservative approach was taken in this analysis in that microbial cell mass production was not taken into account for nitrate or sulfate and only average concentrations of electron acceptors and metabolic byproducts were used. The table below summarizes this comparison.

Electron Acceptor/ Byproduct	Terminal Electron Accepting Process (in order of preferred utilization)	Trend in Analyte Concentration During Biodegradation	Mass of benzene Degraded per unit mass of Electron Acceptor Utilized	Mass of benzene Degraded per unit mass of Metabolic Byproduct Produced	Available Concentrations of Electron Acceptors/ Byproducts (mg/L)	Biodegradation Capacity of Electron Acceptors/ Byproducts (mg/L)
DO	Aerobic Respiration	Decreases	0.326	---	7.50	2.45
Mn^{2+}	Manganese Reduction	Increases	---	0.14	0.47	0.07
NO_3*	Denitrification	Decreases	0.21	---	0.68	0.14
Fe^{2+}	Ferric Iron Reduction	Increases	---	0.046	3.77	0.17
SO_4*	Sulfate Reduction	Decreases	0.22	---	34.8	7.66
					Total Biodegradation Capacity	10.48
					Highest benzene concentration observed on site since monitoring began in 1995	1.13
					Highest benzene concentration observed on site during 2003 Annual Sampling Event	0.057

* Concervative assumption (does not take into account microbial cell mass production)

Degradation capacity based on values provided by "*Technical Protocol for Implementing Intrinsic Remediation With Long-Term Monitoring of Natural Attenuation of Fuel-Contamination Dissolved in Groundwater*"
(Volume 1, 1995, Air Force Center for Environmental Excellence, Technology Transfer Division)

Our suite of biological parameters included dissolved oxygen, nitrate, sulfate, total and ferrous iron, and manganese. These electron acceptor results are summarized in Table 5. Changes in dissolved oxygen, nitrate, and sulfate concentrations with time are depicted in Figures 7, 8, and 9, respectively.

Hydrocarbon-impacted wells (MW-1, MW-1D, MW-5, and MW-7) are compared against upgradient and downgradient wells (MW-2, MW-3, MW-4, and MW-6) to observe over time whether or not significant differences are observed in electron acceptor concentrations that may be related to subsurface biodegradation. The following time-relative relationships in the electron acceptor data are observed:

- With respect to MW-7, which is located within the plume and downgradient of the source area, DO concentrations have fluctuated, however an overall decreasing trend is apparent indicating oxygen is being utilized as an electron acceptor (aerobic respiration).

- Generally, nitrate and sulfate concentrations have decreased with time (denitrification and sulfate reduction) indicating their utilization as electron acceptors under anaerobic conditions.

- The biodegradation capacity of electron acceptors and metabolic byproducts (10.48 mg/L) far exceeds the highest benzene concentration observed on site in the past (1.13 mg/L in MW-7 during the January 1996 sampling event) by a ratio of 9.3 to 1. The most recent benzene concentration in MW-7 was 0.018 mg/L during the September 2003 sampling event. This indicates that the biodegradation process has been occurring and will continue.

Another approach to analyzing the efficacy of biodegradation is to compare the concentrations of various biological parameters versus the downgradient distance from the source of hydrocarbons. For this reason, monitoring wells MW-1, MW-7, MW-4, and MW-3, were plotted in order of their downgradient distance from the nearest source (MW-1) and plotted in Figure 10 to evaluate if any trends were evident. With this analysis the relationships in the electron acceptor data are observed:

- Generally, DO values are low and benzene values are high within the plume indicating that oxygen is being utilized as an electron acceptor (aerobic respiration).

- Nitrate and sulfate concentrations decrease in the downgradient direction as they are being utilized as electron acceptors, which indicates denitrification and sulfate reduction processes are occurring.

- Managanese concentrations are higher within the plume indicating that manganese in solute form is a metabolic byproduct resulting from anaerobic biodegradation processes.

- Ferric and ferrous concentrations are higher within the plume indicating the availability of ferric iron as an electron acceptor and ferrous iron being produced as a metabolic byproduct.

Table 5
Summary of Biological Parameter Results

Monitoring Well	Sampling Date	DO (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Total Iron (mg/L)	Ferrous Iron (mg/L)	Manganese (mg/L)
MW-1	09/18/03	1.25	0.58	45.5	1.43	1.55	0.302
MW-1D	05/16/95	1.05	1.37	174	4.6	---	0.3
	11/15/95	1.26	<0.01	119	---	---	---
	01/18/96	4.8	0.6	168	---	---	---
	04/24/96	2.6	<0.1	169	0.06	---	0.37
	01/22/97	7.0	<0.1	83	---	---	---
	08/11/97	3.6	<0.1	110	0.28	---	0.35
	01/23/98	4.6	2.8	190	---	---	---
	08/03/98	2.16	4.0	100	<0.1	---	0.22
	02/10/99	2.7	4.6	110	---	---	---
	08/17/99	1.03	3.8	120	0.19	---	0.18
	02/18/00	0.41	3.6	92	---	---	---
	08/23/00	1.01	3.4	98	0.20	---	0.20
	02/09/01	0.00	2.0	95	---	---	---
	07/30/01	2.00	2.1	93	0.21	---	0.20
	02/13/02	2.64	2.03	86.3	0.149	---	0.186
	09/27/02	2.73	0.5	82.5	<0.05	0.05	0.157
	04/25/03	1.14	1.00	140.0	0.149	0.12	0.186
	09/18/03	1.57	0.48	47.0	<0.05	0.12	0.133
MW-2	05/16/95	6.48	7.42	509	5.82	---	0.12
	11/15/95	6.13	---	---	---	---	---
	01/18/96	6.2	---	---	---	---	---
	04/24/96	1.5	0.3	443	0.07	---	<0.01
	01/22/97	9.0	2.1	310	---	---	---
	08/11/97	7.6	9.0	290	0.24	---	<0.01
	01/23/98	8.2	30.0	230	---	---	---
	08/03/98	7.00	4.0	220	<0.1	---	<0.1
	02/10/99	8.3	4.8	140	---	---	---
	08/17/99	5.98	4.0	150	<0.1	---	<0.1
	02/18/00	5.65	4.1	120	---	---	---
	08/23/00	6.39	2.0	110	<0.05	---	<0.01
	02/08/01	7.58	2.6	110	---	---	---
	07/30/01	7.57	2.6	116	<0.05	---	<0.025
	02/13/02	9.39	2.69	115	<0.05	---	<0.025
	09/27/02	8.19	1.3	125	<0.05	0.11	<0.025
	04/25/03	5.21	0.10	97.0	0.074	0.06	<0.025
	09/18/03	7.90	0.76	59.2	<0.05	0.27	<0.025
MW-3	05/16/95	6.85	5.62	115	0.53	---	0.08
	11/15/95	1.29	---	---	---	---	---
	01/18/96	4.9	---	---	---	---	---
	04/24/96	1.0	0.3	95	0.17	---	<0.01
	01/22/97	8.75	2.7	76	---	---	---
	08/11/97	9.2	9.4	75	0.14	---	<0.01
	01/23/98	7.7	15.0	240	---	---	---
	08/03/98	3.43	4.0	80	0.55	---	<0.1
	02/10/99	5.80	4.9	74	---	---	---
	08/17/99	4.04	3.5	84	<0.1	---	<0.1
	02/17/00	6.24	3.7	69	---	---	---
	08/23/00	6.25	3.3	72	<0.05	---	<0.01
	02/08/01	6.90	1.8	67	---	---	---
	07/30/01	5.75	1.8	67	<0.05	---	0.029
	02/13/02	9.32	1.49	67.6	<0.05	---	0.053
	09/27/02	6.36	0.1	73.5	<0.05	0.14	0.057
	04/25/03	2.02	<1.0	102.0	0.323	0.05	0.094
	09/18/03	0.98	0.49	43.6	<0.05	0.40	0.082

Table 5
Summary of Biological Parameter Results

Monitoring Well	Sampling Date	DO (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Total Iron (mg/L)	Ferrous Iron (mg/L)	Manganese (mg/L)
MW-4	05/16/95	4.85	3.69	136	4.68	---	0.11
	11/15/95	1.30	---	---	---	---	---
	01/18/96	4.0	---	---	---	---	---
	04/24/96	1.9	0.1	115	0.08	---	<0.01
	01/22/97	9.0	<0.1	100	---	---	---
	08/11/97	3.5	<0.1	96	0.08	---	<0.01
	01/23/98	7.0	1.0	180	---	---	---
	08/03/98	3.66	2.9	100	<0.1	---	<0.1
	02/10/99	5.0	3.7	110	---	---	---
	08/17/99	2.64	2.5	120	<0.1	---	<0.1
	02/18/00	6.51	2.8	98	---	---	---
	08/23/00	6.06	2.6	100	<0.05	---	0.03
	02/08/01	6.72	<1.0	97	---	---	---
	07/30/01	6.11	1.1	92	<0.05	---	0.07
	02/13/02	9.02	<1.0	90.6	<0.05	---	0.066
	09/27/02	7.52	0.1	94.2	<0.05	0.04	0.063
	04/25/03	1.15	0.3	104.0	<0.05	0	0.075
	09/18/03	1.85	0.7	51.8	<0.05	0.08	0.056
MW-5	09/27/02	1.19	0.60	56.9	3.37	1.84	0.397
	09/18/03	1.43	0.39	39.2	2.87	0.51	0.469
MW-6	05/16/95	---	---	---	---	---	---
	11/16/95	5.40	0.06	233	---	---	---
	01/18/96	4.1	<0.05	93	---	---	---
	04/24/96	1.7	<0.1	70	0.15	---	0.28
	01/22/97	11.0	<0.1	37	---	---	---
	08/11/97	3.7	<0.1	37	0.21	---	0.30
	01/23/98	4.7	0.28	230	---	---	---
	08/03/98	1.96	<1.0	45	0.26	---	0.36
	02/10/99	2.6	<1.0	42	---	---	---
	08/17/99	0.8	<1.0	82	0.42	---	0.27
	02/18/00	0.53	<1.0	59	---	---	---
	08/23/00	0.61	<0.1	57	<0.05	---	0.34
	02/08/01	0.10	<1.0	60	---	---	---
	07/30/01	1.40	<1.0	63	0.36	---	0.34
	02/13/02	2.94	<1.0	48.9	0.484	---	0.289
	09/27/02	0.28	0.2	38.8	0.521	0.46	0.351
	04/25/03	0.40	<1.0	53.5	0.582	0.42	0.378
	09/18/03	0.40	1.07	24.4	0.725	0.64	0.373
MW-7	05/16/95	---	---	---	---	---	---
	11/15/95	1.6	5.00	418	---	---	---
	01/18/96	4.8	6.54	180	---	---	---
	04/24/96	2.1	0.2	149	<0.03	---	0.38
	01/22/97	13.2	<0.1	25	---	---	---
	08/11/97	3.0	<0.1	76	0.43	---	0.37
	01/23/98	4.1	0.39	180	---	---	---
	08/03/98	1.9	<1.0	90	6.1	---	0.41
	02/10/99	2.6	<1.0	44	---	---	---
	08/17/99	0.9	<1.0	14	8.1	---	0.19
	02/18/00	0.28	<1.0	27	---	---	---
	08/23/00	0.59	<1.0	19	7.4	---	0.22
	02/09/01	0.00	<1.0	22	---	---	---
	07/30/01	1.50	<1.0	66	5.3	---	0.33
	02/13/02	2.47	<1.0	30.9	8.25	---	0.261
	09/27/02	0.23	0.3	70.8	4.21	2.67	0.310
	04/25/03	0.00	<1.0	45.8	4.20	2.92	0.278
	09/18/03	0.67	0.82	44.8	3.77	2.63	0.312

Analyses performed by Trace Analysis, Inc., Lubbock, Texas.
Dissolved oxygen (DO) readings obtained with Hanna Model 9143 DO meter or comparable model.
Monitoring wells MW-6 and MW-7 installed on November 15, 1995.
Monitoring wells MW-1 and MW-5 were not analyzed if light non-aqueous phase liquids (LNAPL) are present.

Figure 7
Dissolved Oxygen Concentrations Versus Time

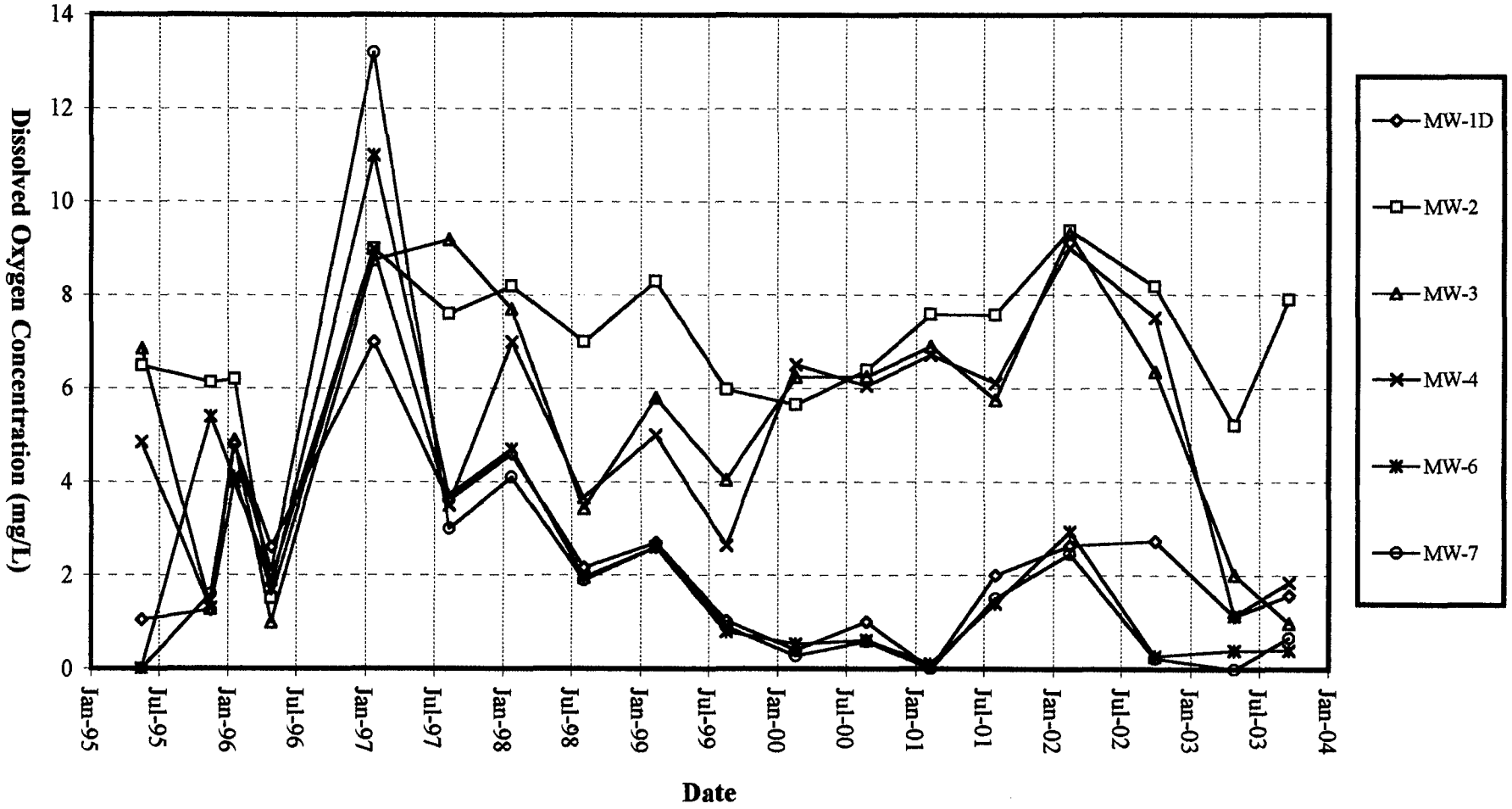


Figure 8
Nitrate Concentrations Versus Time

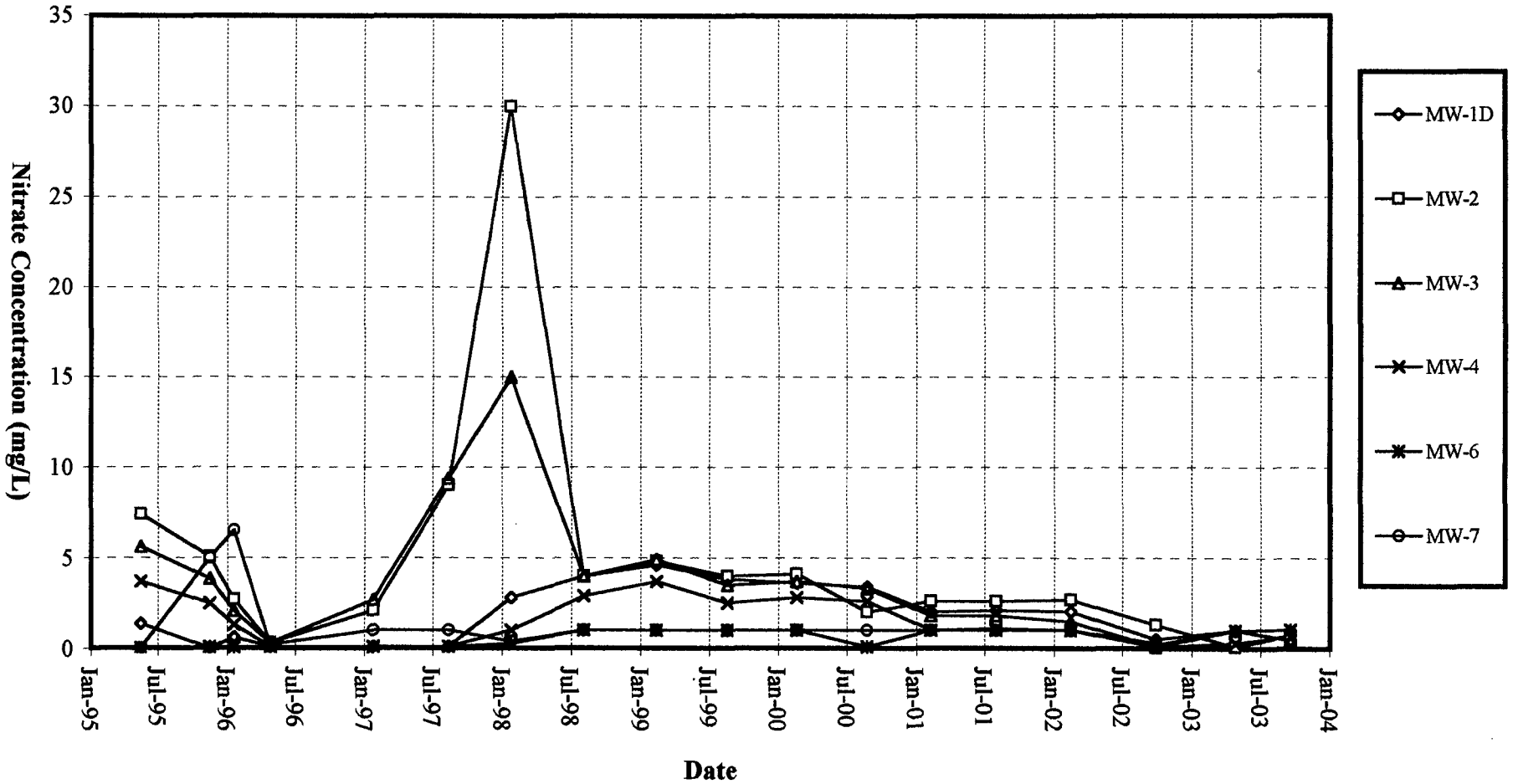


Figure 9
Sulfate Concentrations Versus Time

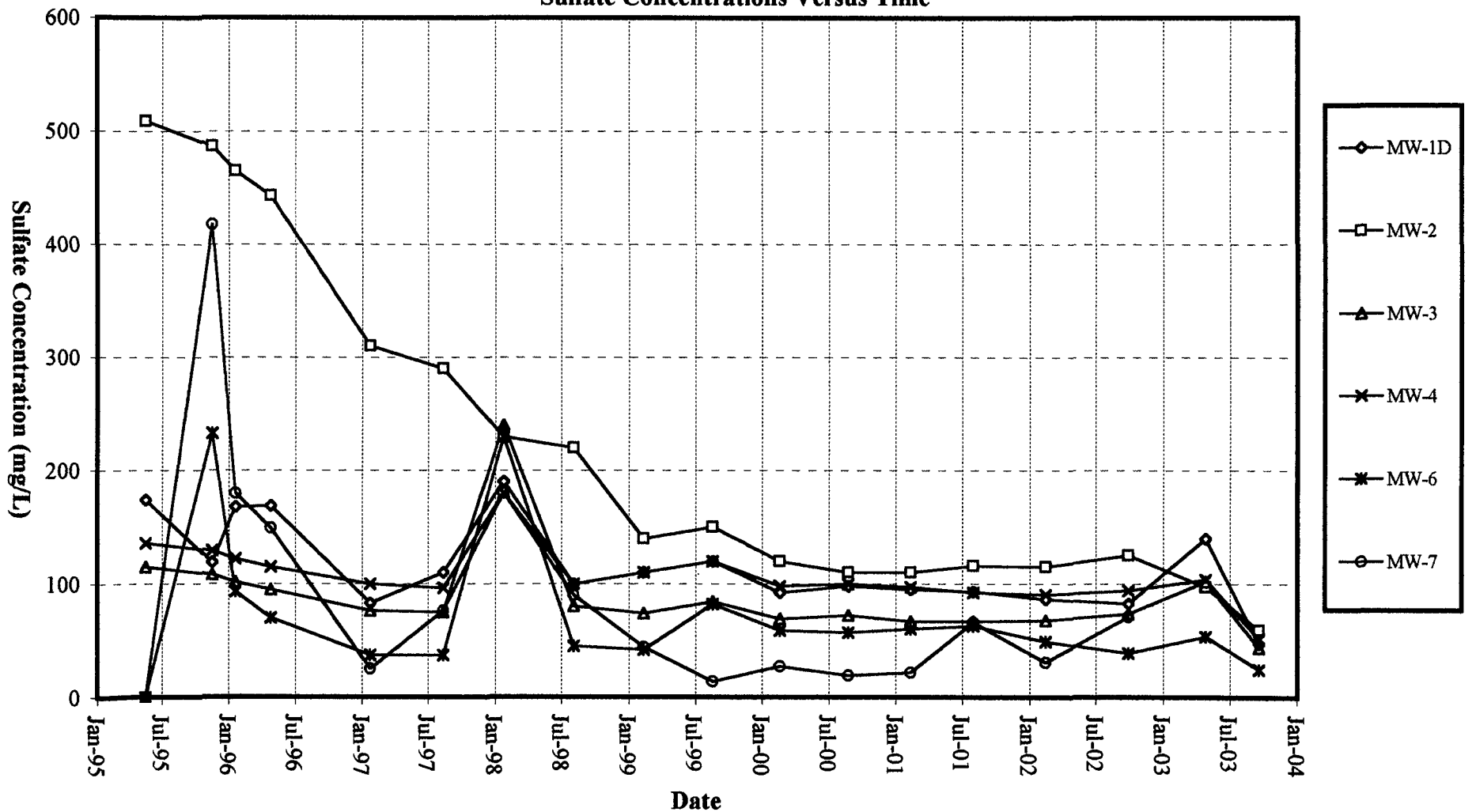
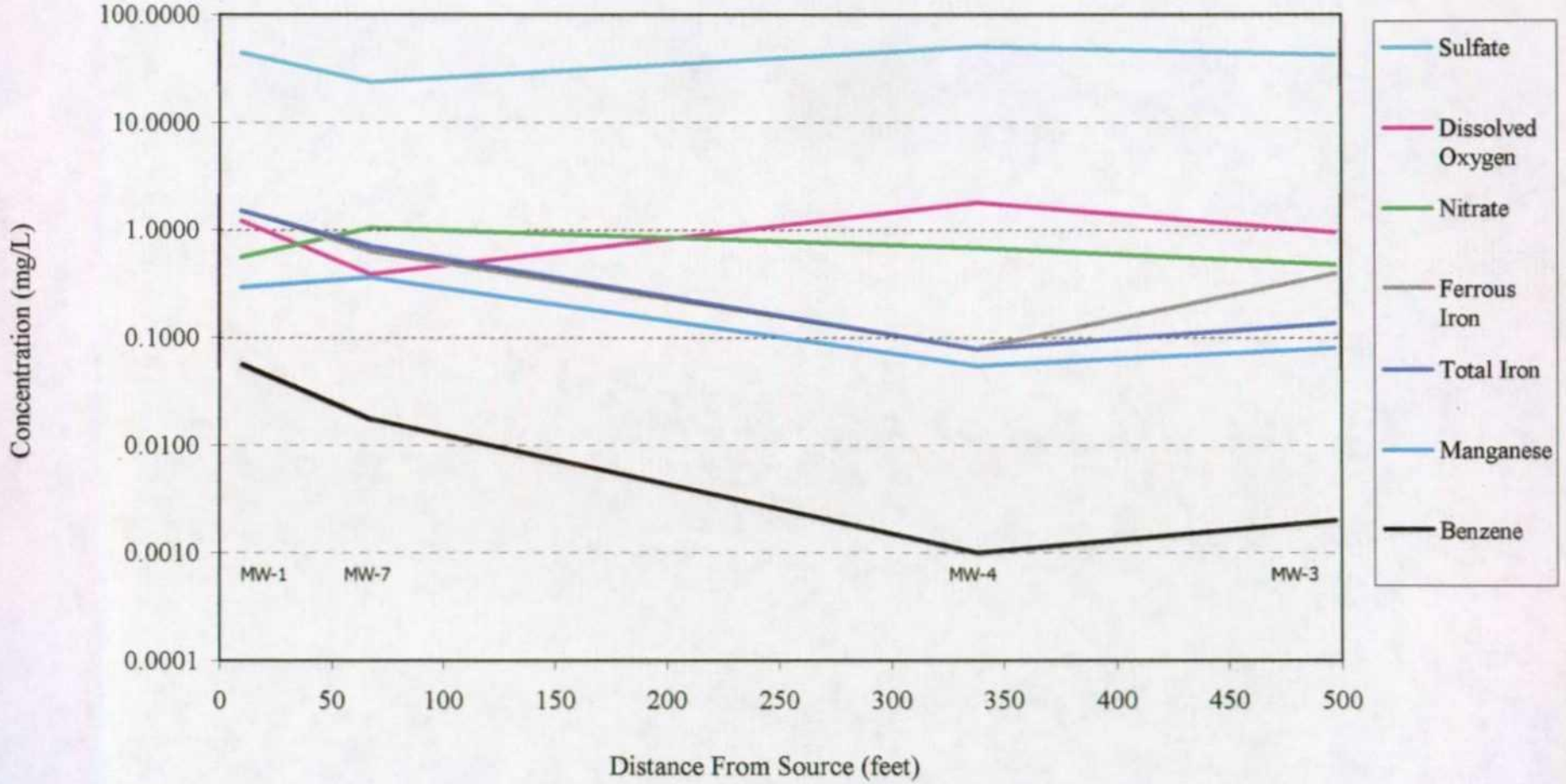


Figure 10
Benzene and Biological Parameter Concentrations
Versus Downgradient Distance From Source
(September 18, 2003)



7.0 Remediation System Performance

LNAPL remediation at the Monument Booster Station is presently being conducted utilizing hydrophobic absorbent socks in both MW-1 and MW-5. Xitech product recovery pumps were initially installed in monitoring wells MW-I and MW-5 on January 31, 1997 to replace the hand bailing and gravity siphoning techniques used previously. On March 13, 1998 the Xitech pump in MW-5 was replaced with a passive bailer. On April 20, 1999, the passive bailer in MW-5 was replaced with a hydrophobic adsorbent sock. On December 20, 1999 the Xitech pump in MW-1 was removed and replaced with an adsorbent sock. As of October 29, 2003, a total of approximately 163.6 gallons of LNAPL (condensate) have been removed from monitoring wells MW-1 and MW-5. Product recovery volumes are listed below in Table 6. A graph of LNAPL thickness measurements from each of the impacted wells and the cumulative LNAPL recovery versus time is provided in Figure 11.

Table 6
LNAPL Recovery Volumes
Duke Energy Field Services - Monument Booster Station

Date	LNAPL Thickness (feet)		LNAPL Recovered (gallons)				Cumulative LNAPL Recovered (gallons)
	MW-1	MW-5	MW-1		MW-5		
07/24/95	2.48	---	10	HB	---		10
07/27/95	0.53	---	2	SWAP	---		12
11/15/95	1.35	0.77	1.4	SWAP	---		13.4
11/21/95	1.86	0.76	---		---		13.4
12/20/95	2.14	0.75	---		---		13.4
01/18/96	2.18	0.75	---		---		13.4
03/08/96	---	---	15	Pump	---		28.4
04/24/96	2.09	0.79	0	Pump	---		28.4
06/14/96	2.27	0.82	12	Pump	1.5	HB	41.9
01/27/97	2.21	0.59	4	Pump	0	Pump	45.9
01/31/97	---	---	0	Pump	0	Pump	45.9
02/07/97	---	---	4	Pump	2	Pump	51.9
02/19/97	---	---	10	Pump	0	Pump	61.9
08/11/97	0.02	0.09	23	Pump	6	Pump	90.9
08/09/97	0.03	0.08	1.5	Pump	0	Pump	92.4
09/18/97	0.04	---	2.5	Pump	0	Pump	94.9
10/07/97	---	---	1.5	Pump	0	Pump	96.4
10/22/97	---	0.04	1	Pump	0	Pump	97.4
11/25/97	---	0.09	1.5	Pump	0.5	Pump	99.4
12/09/97	---	0.22	0.0	Pump	0.00	Pump	99.4
01/09/98	---	---	2	Pump	0.00	Pump	101.4
01/23/98	0.08	0.04	0.0	Pump	0.50	Pump	101.9
02/24/98	0.03	0.33	2	Pump	0.00	PB	103.9
03/23/98	0.00	0.38	2	Pump	0.07	PB	106.0
06/23/98	0.03	0.58	5	Pump	0.04	PB	111.0
08/03/98	0.01	0.53	0.0	Pump	0.05	PB	111.1
09/18/98	0.09	0.36	3	Pump	0.16	PB	114.2
10/28/98	0.07	0.31	0.5	Pump	0.00	PB	114.7
11/17/98	0.03	0.27	0.5	Pump	0.01	PB	115.2
02/10/99	0.09	0.76	1.5	Pump	0.01	PB	116.7
03/24/99	0.27	1.20	0.0	Pump	0.05	PB	116.8
04/20/99	0.49	1.64	0.5	Pump	0.94	PB	118.2
05/13/99	0.02	0.19	3	Pump	0.40	PB	121.6
06/14/99	0.02	0.32	1	Pump	0.50	Sock	123.1
08/04/99	0.03	0.51	0.0	Pump	0.40	Sock	123.5
08/17/99	0.01	0.39	0.0	Pump	0.50	Sock	124.0
09/14/99	0.04	0.37	1	Pump	0.60	Sock	125.6
10/26/99	0.22	0.53	1	Pump	0.50	Sock	127.1
11/22/99	0.24	0.37	0.5	Pump	0.50	Sock	128.1
12/20/99	0.01	0.32	0.5	Pump	0.42	Sock	129.1

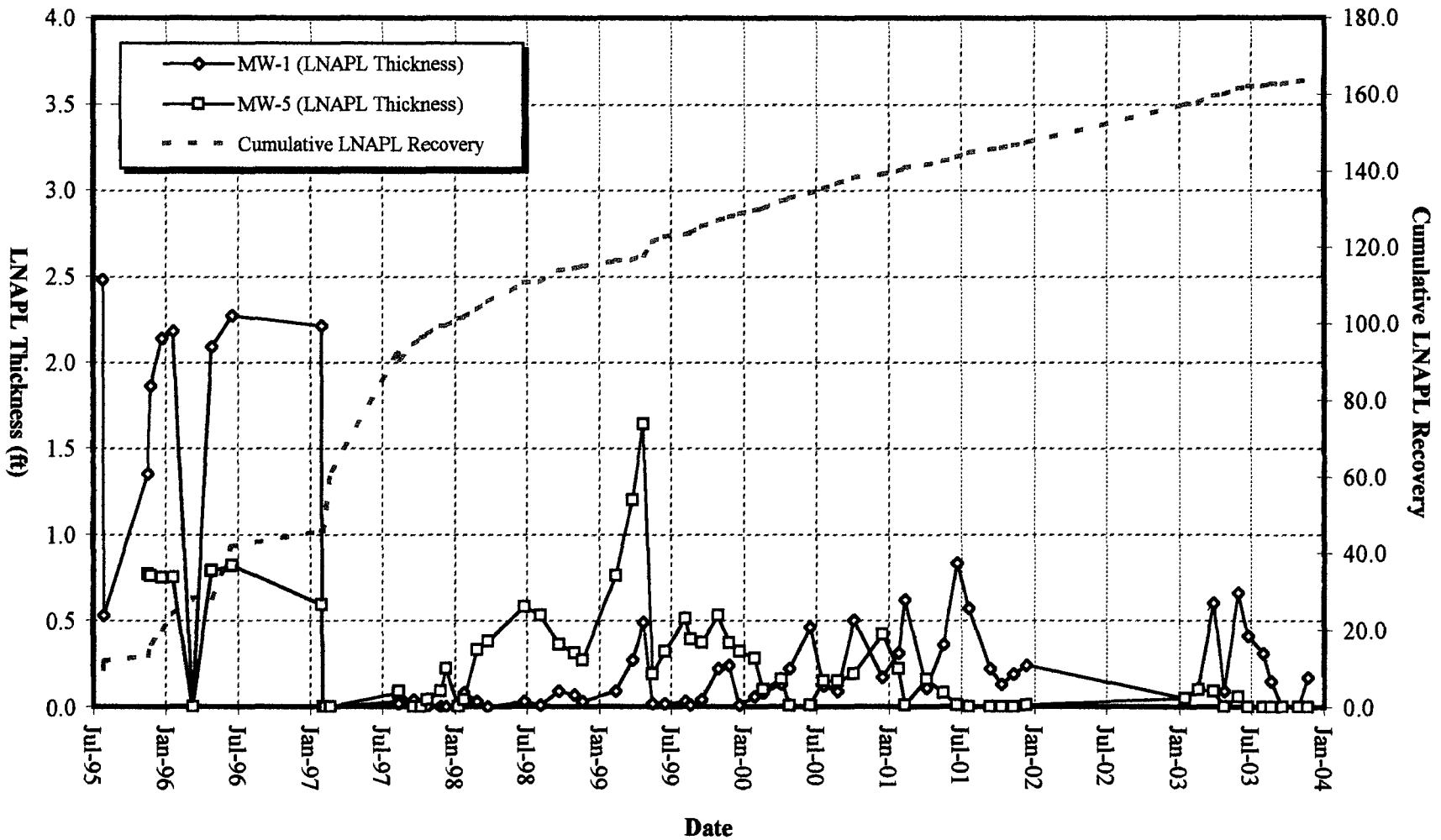
LNAPL recovery methods used:
HB: Hand bailing using PVC bailer
SWAP: Gravity siphon demonstration
Pump: Xitech ADJ 1000 Smart Skimmer (Product Recovery System)
PB: Passive bailer with hydrophobic filter
Sock: Hydrophobic (oil adsorbent) sock

Table 6 (Continued)
LNAPL Recovery Volumes
Duke Energy Field Services - Monument Booster Station

Date	LNAPL Thickness (feet)		LNAPL Recovered (gallons)				Cumulative LNAPL Recovered (gallons)
	MW-1	MW-5	MW-1		MW-5		
01/26/00	0.06	0.28	0.40	Sock	0.40	Sock	129.9
02/17/00	0.08	0.10	0.40	Sock	0.20	Sock	130.5
04/04/00	0.13	0.16	0.60	Sock	1.20	Sock	132.3
04/24/00	0.22	0.01	0.45	Sock	0.35	Sock	133.1
06/15/00	0.46	0.01	1.07	Sock	0.28	Sock	134.4
07/19/00	0.12	0.15	0.63	Sock	0.55	Sock	135.6
08/23/00	0.09	0.15	0.54	Sock	0.72	Sock	136.8
10/03/00	0.50	0.19	1.13	Sock	0.39	Sock	138.4
12/14/00	0.17	0.42	0.51	Sock	0.46	Sock	139.3
01/23/01	0.31	0.22	0.46	Sock	0.33	Sock	140.1
02/09/01	0.62	0.01	0.77	Sock	0.19	Sock	141.1
04/04/01	0.11	0.16	0.35	Sock	0.34	Sock	141.8
05/16/01	0.36	0.08	0.73	Sock	0.26	Sock	142.8
06/19/01	0.83	0.01	0.95	Sock	0.08	Sock	143.8
07/20/01	0.57	0.00	1.18	Sock	0.01	Sock	145.0
09/10/01	0.22	0.00	0.79	Sock	0.06	Sock	145.8
10/09/01	0.13	<0.01	0.44	Sock	0.02	Sock	146.3
11/08/01	0.19	<0.01	0.58	Sock	0.02	Sock	146.9
12/11/01	0.24	0.01	0.57	Sock	0.01	Sock	147.5
01/18/02	0.12	0.20	0.35	Sock	0.08	Sock	147.9
02/13/02	0.69	0.01	1.11	Sock	0.13	Sock	149.1
03/14/02	0.14	<0.01	0.55	Sock	0.16	Sock	149.8
04/10/02	0.08	<0.01	0.42	Sock	0.16	Sock	150.4
05/14/02	0.22	0.01	0.62	Sock	0.18	Sock	151.2
06/18/02	0.69	0.01	1.09	Sock	0.15	Sock	152.5
07/12/02	0.37	<0.01	0.61	Sock	0.01	Sock	153.1
08/14/02	0.75	0.02	1.36	Sock	0.04	Sock	154.5
09/24/02	0.69	<0.01	1.39	Sock	0.03	Sock	155.9
10/24/02	0.27	<0.01	0.70	Sock	0.00	Sock	156.6
11/22/02	0.08	<0.01	0.16	Sock	0.08	Sock	156.9
12/17/02	0.08	0.02	0.22	Sock	0.15	Sock	157.2
01/15/03	0.05	0.05	0.19	Sock	0.18	Sock	157.6
02/18/03	0.11	0.10	0.26	Sock	0.16	Sock	158.0
03/28/03	0.60	0.09	1.59	Sock	0.19	Sock	159.8
04/23/03	0.09	<0.01	0.26	Sock	0.11	Sock	160.2
05/29/03	0.66	0.06	1.41	Sock	0.11	Sock	161.7
06/23/03	0.41	<0.01	0.42	Sock	0.03	Sock	162.1
07/30/03	0.31	0.00	0.18	Sock	0.01	Sock	162.3
08/20/03	0.15	0.00	0.41	Sock	0.00	Sock	162.7
09/18/03	<0.01	0.00	0.00	Sock	0.00	Sock	162.7
10/28/03	<0.01	0.00	0.70	Sock	0.00	Sock	163.4
11/21/03	0.17	0.00	0.16	Sock	0.00	Sock	163.6
Total Volume of Product Recovered:			140.1	(MW-1)	23.5	(MW-5)	163.6

LNAPL recovery methods used:
HB: Hand bailing using PVC bailer
SWAP: Gravity siphon demonstration
Pump: Xitech ADJ 1000 Smart Skimmer (Product Recovery System)
PB: Passive bailer with hydrophobic filter
Sock: Hydrophobic (oil adsorbent) sock

Figure 11
LNAPL Recovery Versus Time



8.0 Conclusions

Conclusions relevant to groundwater conditions and the remediation performance at the Monument Booster Station are presented below.

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations in monitoring wells MW-1D, MW-2, MW-3, MW-4, and MW-6 are presently below New Mexico Water Quality Control Commission (WQCC) standards. With the exception of the August 1999 sample recovered from MW-2 and the August 1999 and February 2000 samples recovered from MW-3, the BTEX concentrations in each of these wells have remained below the WQCC standard levels since 1995.

- Only the benzene concentrations from the current and historic groundwater samples recovered from MW-1 (0.057 mg/L), MW-5 (0.022 mg/L), and MW-7 (0.018 mg/L) exceed the WQCC standard.

- As of October 28, 2003, a total of approximately 163.6 gallons of light non-aqueous phase liquids (LNAPL) has been removed from monitoring wells MW-1 and MW-5 using a combination of gravity siphoning, hand bailing, passive skimmer, adsorbent sock, and pneumatic pump recovery methods.

- Observed spatial and time-relevant trends of biological parameters (DO, NO_3, SO_4, Fe^{+2}, total Fe, and total Mn) indicate the efficacy of indigenous microorganisms in degrading the dissolved hydrocarbons within the plume. The biodegradation capacity of electron acceptors and metabolic byproducts (10.48 mg/L) far exceeds the highest benzene concentration observed on site in the past (1.13 mg/L in MW-7 during the January 1996 sampling event) by a ratio of 9.3 to 1. The most recent benzene concentration in MW-7 was 0.018 mg/L during the September 2003 sampling event. This indicates that the biodegradation process has been occurring and will continue.

APPENDIX A

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Gil Van Deventer
Trident Environmental
P.O. Box 7624
Midland, TX 79708

Report Date: May 7, 2003

Work Order: 3043019

Cost Center #: V-104
Project Location: Monument Booster
Project Name: Duke Energy Field Services
Project Number: Monument Booster

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
6445	MW-1d	water	2003-04-25	16:40	2003-04-30
6446	MW-2	water	2003-04-25	14:30	2003-04-30
6447	MW-3	water	2003-04-25	10:40	2003-04-30
6448	MW-4	water	2003-04-25	12:16	2003-04-30
6449	MW-6	water	2003-04-25	13:20	2003-04-30
6450	MW-7	water	2003-04-25	15:45	2003-04-30
6451	Duplicate	water	2003-04-25	00:00	2003-04-30
6452	Rinsate	water	2003-04-25	17:00	2003-04-30
6453	Trip Blank	water	2003-04-25	00:00	2003-04-30

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 6445 - MW-1d

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	1350	Date Analyzed:	2003-04-30	Analyzed By:	DK
Prep Batch:	1208	Date Prepared:	2003-04-30	Prepared By:	DK

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.00500		mg/L	5	0.00100
Toluene		<0.00500		mg/L	5	0.00100
Ethylbenzene		<0.00500		mg/L	5	0.00100
Xylene (isomers)		<0.00500		mg/L	5	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.452	mg/L	5	0.100	90	61 - 127
4-Bromofluorobenzene (4-BFB)		0.456	mg/L	5	0.100	91	72.6 - 130

Sample: 6445 - MW-1d

Analysis:	Fe, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	1438	Date Analyzed:	2003-05-07	Analyzed By:	RR
Prep Batch:	1203	Date Prepared:	2003-05-01	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Iron		0.194		mg/L	1	0.0500

Sample: 6445 - MW-1d

Analysis:	Mn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	1438	Date Analyzed:	2003-05-07	Analyzed By:	RR
Prep Batch:	1203	Date Prepared:	2003-05-01	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Manganese		0.181		mg/L	1	0.0250

Sample: 6446 - MW-2

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	1304	Date Analyzed:	2003-04-30	Analyzed By:	DK
Prep Batch:	1166	Date Prepared:	2003-04-30	Prepared By:	DK

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.00100		mg/L	1	0.00100
Toluene		<0.00100		mg/L	1	0.00100
Ethylbenzene		<0.00100		mg/L	1	0.00100
Xylene (isomers)		<0.00100		mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0998	mg/L	1	0.100	100	61 - 127
4-Bromofluorobenzene (4-BFB)		0.0997	mg/L	1	0.100	100	72.6 - 130

Sample: 6446 - MW-2

Analysis:	Fe, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	1438	Date Analyzed:	2003-05-07	Analyzed By:	RR
Prep Batch:	1203	Date Prepared:	2003-05-01	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Iron		0.0740	mg/L	1	0.0500

Sample: 6446 - MW-2

Analysis:	Mn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	1438	Date Analyzed:	2003-05-07	Analyzed By:	RR
Prep Batch:	1203	Date Prepared:	2003-05-01	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Manganese		<0.0250	mg/L	1	0.0250

Sample: 6447 - MW-3

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	1304	Date Analyzed:	2003-04-30	Analyzed By:	DK
Prep Batch:	1166	Date Prepared:	2003-04-30	Prepared By:	DK

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00500	mg/L	5	0.00100
Toluene		<0.00500	mg/L	5	0.00100
Ethylbenzene		<0.00500	mg/L	5	0.00100
Xylene (isomers)		<0.00500	mg/L	5	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.499	mg/L	5	0.100	100	61 - 127
4-Bromofluorobenzene (4-BFB)		0.504	mg/L	5	0.100	101	72.6 - 130

Sample: 6447 - MW-3

Analysis:	Fe, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	1438	Date Analyzed:	2003-05-07	Analyzed By:	RR
Prep Batch:	1203	Date Prepared:	2003-05-01	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Iron		0.323	mg/L	1	0.0500

Sample: 6447 - MW-3

Analysis:	Mn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	1438	Date Analyzed:	2003-05-07	Analyzed By:	RR
Prep Batch:	1203	Date Prepared:	2003-05-01	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Manganese		0.0940	mg/L	1	0.0250

Sample: 6448 - MW-4

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	1304	Date Analyzed:	2003-04-30	Analyzed By:	DK
Prep Batch:	1166	Date Prepared:	2003-04-30	Prepared By:	DK

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene (isomers)		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.103	mg/L	1	0.100	103	61 - 127
4-Bromofluorobenzene (4-BFB)		0.102	mg/L	1	0.100	102	72.6 - 130

Sample: 6448 - MW-4

Analysis:	Fe, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	1438	Date Analyzed:	2003-05-07	Analyzed By:	RR
Prep Batch:	1203	Date Prepared:	2003-05-01	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Iron		<0.0500	mg/L	1	0.0500

Sample: 6448 - MW-4

Analysis:	Mn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	1438	Date Analyzed:	2003-05-07	Analyzed By:	RR
Prep Batch:	1203	Date Prepared:	2003-05-01	Prepared By:	TP

continued ...

sample 6448 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Total Manganese		0.0750	mg/L	1	0.0250

Sample: 6449 - MW-6

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	1304	Date Analyzed:	2003-04-30	Analyzed By:	DK
Prep Batch:	1166	Date Prepared:	2003-04-30	Prepared By:	DK

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene (isomers)		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.101	mg/L	1	0.100	101	61 - 127
4-Bromofluorobenzene (4-BFB)		0.106	mg/L	1	0.100	106	72.6 - 130

Sample: 6449 - MW-6

Analysis:	Fe, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	1438	Date Analyzed:	2003-05-07	Analyzed By:	RR
Prep Batch:	1203	Date Prepared:	2003-05-01	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Iron		0.582	mg/L	1	0.0500

Sample: 6449 - MW-6

Analysis:	Mn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	1438	Date Analyzed:	2003-05-07	Analyzed By:	RR
Prep Batch:	1203	Date Prepared:	2003-05-01	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Manganese		0.378	mg/L	1	0.0250

Sample: 6450 - MW-7

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	1304	Date Analyzed:	2003-04-30	Analyzed By:	DK

Prep Batch: 1166 Date Prepared: 2003-04-30 Prepared By: DK

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		0.157		mg/L	5	0.00100
Toluene		<0.00500		mg/L	5	0.00100
Ethylbenzene		0.192		mg/L	5	0.00100
Xylene (isomers)		0.0199		mg/L	5	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.493	mg/L	5	0.100	98	61 - 127
4-Bromofluorobenzene (4-BFB)		0.526	mg/L	5	0.100	105	72.6 - 130

Sample: 6450 - MW-7

Analysis: Fe, Total Analytical Method: S 6010B Prep Method: S 3010A
QC Batch: 1438 Date Analyzed: 2003-05-07 Analyzed By: RR
Prep Batch: 1203 Date Prepared: 2003-05-01 Prepared By: TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Iron		4.20		mg/L	1	0.0500

Sample: 6450 - MW-7

Analysis: Mn, Total Analytical Method: S 6010B Prep Method: S 3010A
QC Batch: 1438 Date Analyzed: 2003-05-07 Analyzed By: RR
Prep Batch: 1203 Date Prepared: 2003-05-01 Prepared By: TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Manganese		0.278		mg/L	1	0.0250

Sample: 6451 - Duplicate

Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5030B
QC Batch: 1304 Date Analyzed: 2003-04-30 Analyzed By: DK
Prep Batch: 1166 Date Prepared: 2003-04-30 Prepared By: DK

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		0.150		mg/L	5	0.00100
Toluene		<0.00500		mg/L	5	0.00100
Ethylbenzene		0.184		mg/L	5	0.00100
Xylene (isomers)		0.0181		mg/L	5	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.469	mg/L	5	0.100	94	61 - 127
4-Bromofluorobenzene (4-BFB)		0.503	mg/L	5	0.100	100	72.6 - 130

Sample: 6452 - Rinsate

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	1304	Date Analyzed:	2003-04-30	Analyzed By:	DK
Prep Batch:	1166	Date Prepared:	2003-04-30	Prepared By:	DK

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene (isomers)		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0959	mg/L	1	0.100	96	61 - 127
4-Bromofluorobenzene (4-BFB)		0.0977	mg/L	1	0.100	98	72.6 - 130

Sample: 6453 - Trip Blank

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	1305	Date Analyzed:	2003-04-30	Analyzed By:	DK
Prep Batch:	1167	Date Prepared:	2003-04-30	Prepared By:	DK

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		0.00130	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene (isomers)		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0982	mg/L	1	0.100	98	78.7 - 110
4-Bromofluorobenzene (4-BFB)		0.0911	mg/L	1	0.100	91	77.8 - 110

Method Blank (1) QC Batch: 1304

Parameter	Flag	Result	Units	MDL
Benzene		<0.000350	mg/L	0.00035
Toluene		<0.000550	mg/L	0.00055
Ethylbenzene		<0.000690	mg/L	0.00069
Xylene (isomers)		<0.00183	mg/L	0.00183

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0986	mg/L	1	0.100	99	61 - 127
4-Bromofluorobenzene (4-BFB)		0.0987	mg/L	1	0.100	99	72.6 - 130

Method Blank (1) QC Batch: 1305

Parameter	Flag	Result	Units	MDL
Benzene		<0.000410	mg/L	0.00041
Toluene		<0.000760	mg/L	0.00076
Ethylbenzene		<0.00120	mg/L	0.0012
Xylene (isomers)		<0.00183	mg/L	0.00183

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0973	mg/L	1	0.100	97	78.7 - 110
4-Bromofluorobenzene (4-BFB)		0.0893	mg/L	1	0.100	89	77.8 - 110

Method Blank (1) QC Batch: 1350

Parameter	Flag	Result	Units	MDL
Benzene		<0.000350	mg/L	0.00035
Toluene		<0.000550	mg/L	0.00055
Ethylbenzene		<0.000690	mg/L	0.00069
Xylene (isomers)		<0.00183	mg/L	0.00183

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0988	mg/L	1	0.100	99	61 - 127
4-Bromofluorobenzene (4-BFB)		0.097	mg/L	1	0.100	97	72.6 - 130

Method Blank (1) QC Batch: 1438

Parameter	Flag	Result	Units	MDL
Total Iron		<0.00220	mg/L	0.0022

Method Blank (1) QC Batch: 1438

Parameter	Flag	Result	Units	MDL
Total Manganese		<0.000275	mg/L	0.000275

Laboratory Control Spike (LCS-1) QC Batch: 1304

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	0.0940	0.0946	mg/L	1	0.100	<0.000350	94	1	77.7 - 115	20
Benzene	0.0940	0.0946	mg/L	1	0.100	<0.000350	94	1	77.7 - 115	20
Toluene	0.0949	0.0956	mg/L	1	0.100	<0.000550	95	1	76.5 - 114	20
Toluene	0.0949	0.0956	mg/L	1	0.100	<0.000550	95	1	76.5 - 114	20
Ethylbenzene	0.0979	0.0989	mg/L	1	0.100	<0.000690	98	1	78.7 - 112	20
Ethylbenzene	0.0979	0.0989	mg/L	1	0.100	<0.000690	98	1	78.7 - 112	20
Xylene (isomers)	0.295	0.299	mg/L	1	0.300	<0.00183	98	1	66.3 - 123	20

continued ...

control spikes continued ...

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Xylene (isomers)	0.295	0.299	mg/L	1	0.300	<0.00183	98	1	66.3 - 123	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0967	0.0973	mg/L	1	0.100	97	97	61 - 127
Trifluorotoluene (TFT)	0.0967	0.0973	mg/L	1	0.100	97	97	61 - 127
4-Bromofluorobenzene (4-BFB)	0.105	0.105	mg/L	1	0.100	105	105	72.6 - 130
4-Bromofluorobenzene (4-BFB)	0.105	0.105	mg/L	1	0.100	105	105	72.6 - 130

Laboratory Control Spike (LCS-1) QC Batch: 1305

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	0.0974	0.0956	mg/L	1	0.100	<0.000410	97	2	80.5 - 113	20
Benzene	0.0974	0.0956	mg/L	1	0.100	<0.000410	97	2	80.5 - 113	20
Toluene	0.0979	0.0960	mg/L	1	0.100	<0.000760	98	2	81.2 - 112	20
Toluene	0.0979	0.0960	mg/L	1	0.100	<0.000760	98	2	81.2 - 112	20
Ethylbenzene	0.0980	0.0962	mg/L	1	0.100	<0.00120	98	2	82.2 - 112	20
Ethylbenzene	0.0980	0.0962	mg/L	1	0.100	<0.00120	98	2	82.2 - 112	20
Xylene (isomers)	0.297	0.291	mg/L	1	0.300	<0.00183	99	2	80.6 - 112	20
Xylene (isomers)	0.297	0.291	mg/L	1	0.300	<0.00183	99	2	80.6 - 112	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0971	0.0958	mg/L	1	0.100	97	96	78.7 - 110
Trifluorotoluene (TFT)	0.0971	0.0958	mg/L	1	0.100	97	96	78.7 - 110
4-Bromofluorobenzene (4-BFB)	0.0943	0.0927	mg/L	1	0.100	94	93	77.8 - 110
4-Bromofluorobenzene (4-BFB)	0.0943	0.0927	mg/L	1	0.100	94	93	77.8 - 110

Laboratory Control Spike (LCS-1) QC Batch: 1350

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	0.0939	0.0989	mg/L	1	0.100	<0.000350	94	5	77.7 - 115	20
Benzene	0.0939	0.0989	mg/L	1	0.100	<0.000350	94	5	77.7 - 115	20
Toluene	0.0932	0.0976	mg/L	1	0.100	<0.000550	93	5	76.5 - 114	20
Toluene	0.0932	0.0976	mg/L	1	0.100	<0.000550	93	5	76.5 - 114	20
Ethylbenzene	0.0971	0.0995	mg/L	1	0.100	<0.000690	97	2	78.7 - 112	20
Ethylbenzene	0.0971	0.0995	mg/L	1	0.100	<0.000690	97	2	78.7 - 112	20
Xylene (isomers)	0.292	0.299	mg/L	1	0.300	<0.00183	97	2	66.3 - 123	20
Xylene (isomers)	0.292	0.299	mg/L	1	0.300	<0.00183	97	2	66.3 - 123	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0943	0.0964	mg/L	1	0.100	94	96	61 - 127
Trifluorotoluene (TFT)	0.0943	0.0964	mg/L	1	0.100	94	96	61 - 127
4-Bromofluorobenzene (4-BFB)	0.105	0.105	mg/L	1	0.100	105	105	72.6 - 130

continued ...

control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
4-Bromofluorobenzene (4-BFB)	0.105	0.105	mg/L	1	0.100	105	105	72.6 - 130

Laboratory Control Spike (LCS-1) QC Batch: 1438

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Iron	0.488	0.490	mg/L	1	0.500	<0.00220	98	0	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 1438

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Manganese	0.264	0.256	mg/L	1	0.250	<0.000275	106	3	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 1438

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Iron	4.68	4.71	mg/L	1	0.500	4.2	96	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 1438

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Manganese	0.550	0.550	mg/L	1	0.250	0.278	109	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (CCV-1) QC Batch: 1304

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0919	92	85 - 115	2003-04-30
Toluene		mg/L	0.100	0.0926	93	85 - 115	2003-04-30
Ethylbenzene		mg/L	0.100	0.0974	97	85 - 115	2003-04-30
Xylene (isomers)		mg/L	0.300	0.295	98	85 - 115	2003-04-30

Standard (CCV-2) QC Batch: 1304

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0993	99	85 - 115	2003-04-30
Toluene		mg/L	0.100	0.0977	98	85 - 115	2003-04-30
Ethylbenzene		mg/L	0.100	0.100	100	85 - 115	2003-04-30
Xylene (isomers)		mg/L	0.300	0.300	100	85 - 115	2003-04-30

Standard (CCV-1) QC Batch: 1305

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0953	95	85 - 115	2003-04-30
Toluene		mg/L	0.100	0.0955	96	85 - 115	2003-04-30
Ethylbenzene		mg/L	0.100	0.0958	96	85 - 115	2003-04-30
Xylene (isomers)		mg/L	0.300	0.290	96	85 - 115	2003-04-30

Standard (CCV-2) QC Batch: 1305

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0945	94	85 - 115	2003-04-30
Toluene		mg/L	0.100	0.0946	95	85 - 115	2003-04-30
Ethylbenzene		mg/L	0.100	0.0948	95	85 - 115	2003-04-30
Xylene (isomers)		mg/L	0.300	0.288	96	85 - 115	2003-04-30

Standard (CCV-1) QC Batch: 1350

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.110	110	85 - 115	2003-04-30
Toluene		mg/L	0.100	0.109	109	85 - 115	2003-04-30
Ethylbenzene		mg/L	0.100	0.102	102	85 - 115	2003-04-30
Xylene (isomers)		mg/L	0.300	0.318	106	85 - 115	2003-04-30

Standard (CCV-2) QC Batch: 1350

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.110	110	85 - 115	2003-04-30
Toluene		mg/L	0.100	0.111	111	85 - 115	2003-04-30
Ethylbenzene		mg/L	0.100	0.112	112	85 - 115	2003-04-30
Xylene (isomers)		mg/L	0.300	0.338	113	85 - 115	2003-04-30

Standard (ICV-1) QC Batch: 1438

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Iron		mg/L	1.00	1.01	101	90 - 110	2003-05-07

Standard (ICV-1) QC Batch: 1438

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Manganese		mg/L	0.500	0.531	106	90 - 110	2003-05-07

Standard (CCV-1) QC Batch: 1438

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Iron		mg/L	1.00	0.977	98	90 - 110	2003-05-07

Standard (CCV-1) QC Batch: 1438

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Manganese		mg/L	0.500	0.524	105	90 - 110	2003-05-07

TRIDENT ENVIRONMENTAL

Trident Environmental
P.O. Box 7624
Midland, Texas 79708
(915) 682-0808
(915) 682-0727 (Fax)

V-104-0403-1

Chain of Custody

Date 4-28-03 Page 1 of 1

Lab Name: TraceAnalysis Inc.
Address: 12600 W I-20
Odessa, Tx.
Telephone: (915) 563-1800

Samplers (SIGNATURES)

Sample Identification	Matrix	Date	Time	Sample Type: G - Grab, C- Composite	BTEX (EPA 8021B)	MTBE (EPA 8021B)	SVOC (EPA 8270)	PAH (EPA 8270)	VOC (EPA 8260)	TPH (EPA 418.1)	TPH (TX-1005)	TPH (TX-1006)	GRO (EPA 8015G)	DRO (EPA 8015D)	TDS (EPA 160.1)	Anions/Cations	TCLP Metals	Total Metals: As, Ba, Cr, Pb, Fe, & Mn	SO4 and NO3						Number of Containers
MW-1d 6445	Water	4-25-03	1640		✓													✓								3
MW-2 46	Water	4-25-03	1430		✓													✓								3
MW-3 47	Water	4-25-03	1040		✓													✓								3
MW-4 48	Water	4-25-03	1316		✓													✓								3
MW-6 49	Water	4-25-03	1320		✓													✓								3
MW-7 50	Water	4-25-03	1545		✓													✓								3
Duplicate 51	Water	4-25-03	0000		✓																					2
Rinsate 52	Water	4-25-03	1700		✓																					2
Trip Blank 53	Water	4-25-03	092402		✓																					2

Analysis Request

Project Information		Sample Receipt	
Project Name:	Duke Energy Field Services	Total Containers:	
Project Location:	Monument Booster	COC Seals:	
Project Manager:	Gil Van Deventer	Rec'd Good Cond/Cold:	4°
Cost Center No.:	V-104	Conforms to Records:	
Shipping ID No.:		Lab No.:	
Bill to (see below):			

Special Instructions/Comments: Please send invoice direct to client:
Duke Energy Field Services, Attn: Tim Hunsucker, Mail Code: EC12ZB,
PO Box 1006, Charlotte NC 28201

Relinquished By: (1) (Company)	Relinquished By: (2) (Company)	Relinquished By: (3) (Company)
Trident Environmental	TRACE ANALYSIS	
(Printed Name) Gil Van Deventer	(Printed Name) HELEN SHELTON	(Printed Name)
(Signature)	(Signature) Helen Shelton	(Signature)
(Date) 4/28/03 (Time) 9:20pm	(Date) 4/29/03 (Time) 1730	(Date) (Time)
Received By: (1) (Company)	**Received By:** (2) (Company)	**Received By:** (3) (Company)
TRACE ANALYSIS		TraceAnalysis
(Printed Name) HELEN SHELTON	(Printed Name)	(Printed Name) Vicki Hensley
(Signature) Helen Shelton	(Signature)	(Signature)
(Date) 4/28/03 (Time) 9:20 PM	(Date) (Time)	(Date) 4-30-03 (Time) 11:30

Copy signed original form for Trident Environmental records

MW-1d samples - H.S

ANALYTICAL REPORT

Prepared for:

GILBERT VAN DEVENTER
TRIDENT ENVIRONMENTAL
P.O. BOX 7624
MIDLAND, TX 79708

Project:	Monument Booster/
PO#:	V-104
Order#:	G0306361
Report Date:	04/29/2003

Certificates
US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

TRIDENT ENVIRONMENTAL
P.O. BOX 7624
MIDLAND, TX 79708
682-0727

Order#: G0306361
Project: V-104
Project Name: Monument Booster/
Location: Monument Booster

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0306361-01	MW-1d	WATER	4/25/03 16:40	4/28/03 9:32	HDPE L	Ice
	Lab Testing: Nitrogen, Nitrate Sulfate	**Rejected:** No		**Temp:** 0.0C		
0306361-02	MW-2	WATER	4/25/03 14:30	4/28/03 9:32	HDPE L	Ice
	Lab Testing: Nitrogen, Nitrate Sulfate	**Rejected:** No		**Temp:** 0.0C		
0306361-03	MW-3	WATER	4/25/03 10:40	4/28/03 9:32	HDPE L	Ice
	Lab Testing: Nitrogen, Nitrate Sulfate	**Rejected:** No		**Temp:** 0.0C		
0306361-04	NW-4	WATER	4/25/03 12:16	4/28/03 9:32	HDPE L	Ice
	Lab Testing: Nitrogen, Nitrate Sulfate	**Rejected:** No		**Temp:** 0.0C		
0306361-05	MW-6	WATER	4/25/03 13:20	4/28/03 9:32	HDPE L	Ice
	Lab Testing: Nitrogen, Nitrate Sulfate	**Rejected:** No		**Temp:** 0.0C		
0306361-06	MW-7	WATER	4/25/03 15:45	4/28/03 9:32	HDPE L	Ice
	Lab Testing: Nitrogen, Nitrate Sulfate	**Rejected:** No		**Temp:** 0.0C		

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

GILBERT VAN DEVENTER
TRIDENT ENVIRONMENTAL
P.O. BOX 7624
MIDLAND, TX 79708

Order#: G0306361
Project: V-104
Project Name: Monument Booster/
Location: Monument Booster

Lab ID: 0306361-01
Sample ID: MW-1d

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Nitrogen, Nitrate	1.0	mg/L	1	0.10	353.3	4/26/03	SB
Sulfate	140	mg/L	2.5	1.25	375.4	4/28/03	SB

Lab ID: 0306361-02
Sample ID: MW-2

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Nitrogen, Nitrate	0.1	mg/L	1	0.10	353.3	4/26/03	SB
Sulfate	97.0	mg/L	2.5	1.25	375.4	4/28/03	SB

Lab ID: 0306361-03
Sample ID: MW-3

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Nitrogen, Nitrate	<0.1	mg/L	1	0.10	353.3	4/26/03	SB
Sulfate	102	mg/L	2.5	1.25	375.4	4/28/03	SB

Lab ID: 0306361-04
Sample ID: NW-4

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Nitrogen, Nitrate	0.3	mg/L	1	0.10	353.3	4/26/03	SB
Sulfate	104	mg/L	2.5	1.25	375.4	4/28/03	SB

Lab ID: 0306361-05
Sample ID: MW-6

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Nitrogen, Nitrate	<0.1	mg/L	1	0.10	353.3	4/26/03	SB
Sulfate	53.5	mg/L	2.5	1.25	375.4	4/28/03	SB

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

GILBERT VAN DEVENTER
TRIDENT ENVIRONMENTAL
P.O. BOX 7624
MIDLAND, TX 79708

Order#: G0306361
Project: V-104
Project Name: Monument Booster/
Location: Monument Booster

Lab ID: 0306361-06
Sample ID: MW-7

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Nitrogen, Nitrate	<0.1	mg/L	1	0.10	353.3	4/26/03	SB
Sulfate	45.8	mg/L	2.5	1.25	375.4	4/28/03	SB

Approval: Raland K Tuttle 4-29-03
Raland K. Tuttle, Lab Director, QA Officer Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0306361

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Nitrogen, Nitrate-mg/L	0005344-01			<0.1		
Sulfate-mg/L	0005343-01			<0.50		
DUPLICATE WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Nitrogen, Nitrate-mg/L	0306361-01	1		1.0		0.%
Sulfate-mg/L	0306361-01	140		141		0.7%
SRM WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Nitrogen, Nitrate-mg/L	0005344-04		2	1.9	95.%	
Sulfate-mg/L	0005343-04		50	52.0	104.%	

TRIDENT ENVIRONMENTAL

Trident Environmental
P.O. Box 7624
Midland, Texas 79708
(915) 682-0808
(915) 682-0727 (Fax)

V-104-0403-2

Chain of Custody

Date 4-25-03 Page 1 of 1

Lab Name: Environmental Lab of Texas, Inc.
Address: 12600 West I-20 East
Odessa, TX 79763
Telephone: (915) 563-1800 Fax: (915) 563-1713

Samplers (SIGNATURES)

Sample Identification	Matrix	Date	Time	Sample Type: G - Grab, C- Composite	BTEX (EPA 8021B)	MTBE (EPA 8021B)	SVOC (EPA 8270)	PAH (EPA 8270)	VOC (EPA 8260)	TPH (EPA 418.1)	TPH (TX-1005)	TPH (TX-1006)	GRO (EPA 8015)	DRO (EPA 8015)	TDS (EPA 160.1)	Anions/Cations	TCLP Metals	Total Metals: Al, As, B, Cr, Fe, & Mn	SO4 and NO3						Number of Containers
0346034-01 MW-1d	Water	4-25-03	1640																✓						1
02 MW-2	Water	4-25-03	1430																✓						1
03 MW-3	Water	4-25-03	1040																✓						1
04 MW-4	Water	4-25-03	1216																✓						1
05 MW-6	Water	4-25-03	1320																✓						1
06 MW-7	Water	4-25-03	1545																✓						1

Project Information		Sample Receipt		Relinquished By: (1) (Company)	Relinquished By: (2) (Company)	Relinquished By: (3) (Company)
Project Name:	Duke Energy Field Services	Total Containers:		Trident Environmental		
Project Location:	Monument Booster	COC Seals:		(Printed Name) Gil Van Deventer	(Printed Name)	(Printed Name)
Project Manager:	Gil Van Deventer	Rec'd Good Cond/Cold:	OC	(Signature)	(Signature)	(Signature)
Cost Center No.:	V-104	Conforms to Records:		(Date) 4/25/03 (Time) 9:30pm	(Date) (Time)	(Date) (Time)
Shipping ID No.:		Lab No.:		Received By: (1) (Company) KC ELOT	Received By: (2) (Company)	Received By: (3) (Company)
Bill to (see below):				(Printed Name) KA/And K Tuttle	(Printed Name)	(Printed Name)
Special Instructions/Comments: Please send invoice direct to client: Duke Energy Field Services, Attn: Tim Hunsucker, Mail Code: EC12ZB, PO Box 1006, Charlotte NC 28201				(Signature)	(Signature)	(Signature)
				(Date) 4-26-03 (Time) 0800	(Date) (Time)	(Date) (Time)

Copy signed original form for Trident Environmental records

Summary Report

Dale Littlejohn
Trident Environmental
P.O. Box 7624
Midland, TX 79708

Report Date: October 9, 2003

Work Order: 3092107

Cost Center #: V-104
Project Location: Monument Booster
Project Name: Duke Energy Field Services

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
17799	MW-1	water	2003-09-18	17:10	2003-09-20
17800	MW-1d	water	2003-09-18	16:30	2003-09-20
17801	MW-2	water	2003-09-18	13:45	2003-09-20
17802	MW-3	water	2003-09-18	12:30	2003-09-20
17803	MW-4	water	2003-09-18	14:16	2003-09-20
17804	MW-5	water	2003-09-18	14:40	2003-09-20
17805	MW-6	water	2003-09-18	15:10	2003-09-20
17806	MW-7	water	2003-09-18	15:56	2003-09-20
17807	Duplicate	water	2003-09-18	00:00	2003-09-20
17808	Rinsate	water	2003-09-18	16:30	2003-09-20
17877	Trip Blank	water	2003-09-18	00:00	2003-09-20

	BTEX			
Sample - Field Code	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (isomers) (mg/L)
17799 - MW-1	0.0572	<0.0100	<0.0100	<0.0100
17800 - MW-1d	0.00210	<0.00100	<0.00100	<0.00100
17801 - MW-2	0.00150	<0.00100	<0.00100	<0.00100
17802 - MW-3	0.00170	<0.00100	<0.00100	<0.00100
17803 - MW-4	<0.00100	<0.00100	<0.00100	<0.00100
17804 - MW-5	0.0216	<0.00100	0.0195	0.0158
17805 - MW-6	0.00200	0.00220	<0.00100	0.00110
17806 - MW-7	0.0175	<0.00100	0.0230	0.00420
17807 - Duplicate	0.0186	<0.00100	0.0241	0.00450
17808 - Rinsate	<0.00100	<0.00100	<0.00100	<0.00100
17877 - Trip Blank	<0.00100	<0.00100	<0.00100	<0.00100

Sample: 17799 - MW-1

Param	Flag	Result	Units	RL
Total Boron		0.438	mg/L	0.00500
Chloride		48.4	mg/L	0.500
Total Iron		1.43	mg/L	0.0500
Fluoride		2.72	mg/L	0.200
Total Manganese		0.302	mg/L	0.0250

continued ...

sample 17799 continued ...

Param	Flag	Result	Units	RL
Total Dissolved Solids		506.0	mg/L	10.00

Sample: 17800 - MW-1d

Param	Flag	Result	Units	RL
Total Boron		0.153	mg/L	0.00500
Chloride		49.0	mg/L	0.500
Total Iron		<0.0500	mg/L	0.0500
Fluoride		2.77	mg/L	0.200
Total Manganese		0.133	mg/L	0.0250
Total Dissolved Solids		517.0	mg/L	10.00

Sample: 17801 - MW-2

Param	Flag	Result	Units	RL
Total Boron		0.305	mg/L	0.00500
Chloride		2230	mg/L	0.500
Total Iron		<0.0500	mg/L	0.0500
Fluoride		2.24	mg/L	0.200
Total Manganese		<0.0250	mg/L	0.0250
Total Dissolved Solids		4400	mg/L	10.00

Sample: 17802 - MW-3

Param	Flag	Result	Units	RL
Total Boron		0.265	mg/L	0.00500
Chloride		176	mg/L	0.500
Total Iron		<0.0500	mg/L	0.0500
Fluoride		1.69	mg/L	0.200
Total Manganese		0.0820	mg/L	0.0250
Total Dissolved Solids		754.0	mg/L	10.00

Sample: 17803 - MW-4

Param	Flag	Result	Units	RL
Total Boron		0.288	mg/L	0.00500
Chloride		147	mg/L	0.500
Total Iron		<0.0500	mg/L	0.0500
Fluoride		1.48	mg/L	0.200
Total Manganese		0.0560	mg/L	0.0250
Total Dissolved Solids		882.0	mg/L	10.00

Sample: 17804 - MW-5

continued ...

sample 17804 continued ...

Param	Flag	Result	Units	RL
Total Boron		0.264	mg/L	0.00500
Chloride		49.9	mg/L	0.500
Total Iron		2.87	mg/L	0.0500
Fluoride		2.01	mg/L	0.200
Total Manganese		0.469	mg/L	0.0250
Total Dissolved Solids		512.0	mg/L	10.00

Sample: 17805 - MW-6

Param	Flag	Result	Units	RL
Total Boron		0.653	mg/L	0.00500
Chloride		121	mg/L	0.500
Total Iron		0.725	mg/L	0.0500
Fluoride		1.57	mg/L	0.200
Total Manganese		0.373	mg/L	0.0250
Total Dissolved Solids		858.0	mg/L	10.00

Sample: 17806 - MW-7

Param	Flag	Result	Units	RL
Total Boron		0.262	mg/L	0.00500
Chloride		50.3	mg/L	0.500
Total Iron		3.77	mg/L	0.0500
Fluoride		2.40	mg/L	0.200
Total Manganese		0.312	mg/L	0.0250
Total Dissolved Solids		533.0	mg/L	10.00

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Dale Littlejohn
Trident Environmental
P.O. Box 7624
Midland, TX 79708

Report Date: October 9, 2003

Work Order: 3092107

Cost Center #: V-104
Project Location: Monument Booster
Project Name: Duke Energy Field Services
Project Number: Monument Booster

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
17799	MW-1	water	2003-09-18	17:10	2003-09-20
17800	MW-1d	water	2003-09-18	16:30	2003-09-20
17801	MW-2	water	2003-09-18	13:45	2003-09-20
17802	MW-3	water	2003-09-18	12:30	2003-09-20
17803	MW-4	water	2003-09-18	14:16	2003-09-20
17804	MW-5	water	2003-09-18	14:40	2003-09-20
17805	MW-6	water	2003-09-18	15:10	2003-09-20
17806	MW-7	water	2003-09-18	15:56	2003-09-20
17807	Duplicate	water	2003-09-18	00:00	2003-09-20
17808	Rinsate	water	2003-09-18	16:30	2003-09-20
17877	Trip Blank	water	2003-09-18	00:00	2003-09-20

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 17799 - MW-1

Analysis:	B, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Boron		0.438		mg/L	1	0.00500

Sample: 17799 - MW-1

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	4631	Date Analyzed:	2003-09-24	Analyzed By:	MT
Prep Batch:	4154	Date Prepared:	2003-09-24	Prepared By:	MT

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		0.0572		mg/L	10	0.00100
Toluene		<0.0100		mg/L	10	0.00100
Ethylbenzene		<0.0100		mg/L	10	0.00100
Xylene (isomers)		<0.0100		mg/L	10	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.848	mg/L	10	0.100	85	70 - 130
4-Bromofluorobenzene (4-BFB)		0.950	mg/L	10	0.100	95	70 - 130

Sample: 17799 - MW-1

Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	4548	Date Analyzed:	2003-09-23	Analyzed By:	JSW
Prep Batch:	4077	Date Prepared:	2003-09-22	Prepared By:	JSW

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		48.4		mg/L	5	0.500

Sample: 17799 - MW-1

Analysis:	Fe, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Iron		1.43		mg/L	1	0.0500

Sample: 17799 - MW-1

Analysis:	Fluoride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	4548	Date Analyzed:	2003-09-23	Analyzed By:	JSW
Prep Batch:	4077	Date Prepared:	2003-09-22	Prepared By:	JSW

Parameter	Flag	Result	RL	Units	Dilution	RL
Fluoride		2.72		mg/L	5	0.200

Sample: 17799 - MW-1

Analysis:	Mn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Manganese		0.302		mg/L	1	0.0250

Sample: 17799 - MW-1

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	4598	Date Analyzed:	2003-09-25	Analyzed By:	JSW
Prep Batch:	4122	Date Prepared:	2003-09-24	Prepared By:	JSW

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Dissolved Solids		506.0		mg/L	1	10.00

Sample: 17800 - MW-1d

Analysis:	B, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Boron		0.153		mg/L	1	0.00500

Sample: 17800 - MW-1d

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	4631	Date Analyzed:	2003-09-24	Analyzed By:	MT
Prep Batch:	4154	Date Prepared:	2003-09-24	Prepared By:	MT

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		0.00210		mg/L	1	0.00100

continued . . .

sample 17800 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene (isomers)		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0836	mg/L	1	0.100	84	70 - 130
4-Bromofluorobenzene (4-BFB)		0.0953	mg/L	1	0.100	95	70 - 130

Sample: 17800 - MW-1d

Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	4548	Date Analyzed:	2003-09-23	Analyzed By:	JSW
Prep Batch:	4077	Date Prepared:	2003-09-22	Prepared By:	JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		49.0	mg/L	5	0.500

Sample: 17800 - MW-1d

Analysis:	Fe, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Iron		<0.0500	mg/L	1	0.0500

Sample: 17800 - MW-1d

Analysis:	Fluoride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	4548	Date Analyzed:	2003-09-23	Analyzed By:	JSW
Prep Batch:	4077	Date Prepared:	2003-09-22	Prepared By:	JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Fluoride		2.77	mg/L	5	0.200

Sample: 17800 - MW-1d

Analysis:	Mn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Manganese		0.133	mg/L	1	0.0250

Sample: 17800 - MW-1d

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	4598	Date Analyzed:	2003-09-25	Analyzed By:	JSW
Prep Batch:	4122	Date Prepared:	2003-09-24	Prepared By:	JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		517.0	mg/L	1	10.00

Sample: 17801 - MW-2

Analysis:	B, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Boron		0.305	mg/L	1	0.00500

Sample: 17801 - MW-2

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	4631	Date Analyzed:	2003-09-24	Analyzed By:	MT
Prep Batch:	4154	Date Prepared:	2003-09-24	Prepared By:	MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		0.00150	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene (isomers)		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0827	mg/L	1	0.100	83	70 - 130
4-Bromofluorobenzene (4-BFB)		0.0946	mg/L	1	0.100	95	70 - 130

Sample: 17801 - MW-2

Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	4548	Date Analyzed:	2003-09-23	Analyzed By:	JSW
Prep Batch:	4077	Date Prepared:	2003-09-22	Prepared By:	JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2230	mg/L	100	0.500

Sample: 17801 - MW-2

Analysis:	Fe, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Iron		<0.0500	mg/L	1	0.0500

Sample: 17801 - MW-2

Analysis:	Fluoride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	4548	Date Analyzed:	2003-09-23	Analyzed By:	JSW
Prep Batch:	4077	Date Prepared:	2003-09-22	Prepared By:	JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Fluoride		2.24	mg/L	10	0.200

Sample: 17801 - MW-2

Analysis:	Mn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Manganese		<0.0250	mg/L	1	0.0250

Sample: 17801 - MW-2

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	4598	Date Analyzed:	2003-09-25	Analyzed By:	JSW
Prep Batch:	4122	Date Prepared:	2003-09-24	Prepared By:	JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		4400	mg/L	1	10.00

Sample: 17802 - MW-3

Analysis:	B, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR

Prep Batch: 4095 Date Prepared: 2003-09-23 Prepared By: TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Boron		0.265	mg/L	1	0.00500

Sample: 17802 - MW-3

Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5030B
QC Batch: 4631 Date Analyzed: 2003-09-24 Analyzed By: MT
Prep Batch: 4154 Date Prepared: 2003-09-24 Prepared By: MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		0.00170	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene (isomers)		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0908	mg/L	1	0.100	91	70 - 130
4-Bromofluorobenzene (4-BFB)		0.0965	mg/L	1	0.100	96	70 - 130

Sample: 17802 - MW-3

Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 4548 Date Analyzed: 2003-09-23 Analyzed By: JSW
Prep Batch: 4077 Date Prepared: 2003-09-22 Prepared By: JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		176	mg/L	5	0.500

Sample: 17802 - MW-3

Analysis: Fe, Total Analytical Method: S 6010B Prep Method: S 3010A
QC Batch: 4953 Date Analyzed: 2003-10-09 Analyzed By: RR
Prep Batch: 4095 Date Prepared: 2003-09-23 Prepared By: TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Iron		<0.0500	mg/L	1	0.0500

Sample: 17802 - MW-3

Analysis: Fluoride (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 4548 Date Analyzed: 2003-09-23 Analyzed By: JSW
Prep Batch: 4077 Date Prepared: 2003-09-22 Prepared By: JSW

Parameter	Flag	Result	RL	Units	Dilution	RL
Fluoride		1.69		mg/L	5	0.200

Sample: 17802 - MW-3

Analysis:	Mn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Manganese		0.0820		mg/L	1	0.0250

Sample: 17802 - MW-3

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	4598	Date Analyzed:	2003-09-25	Analyzed By:	JSW
Prep Batch:	4122	Date Prepared:	2003-09-24	Prepared By:	JSW

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Dissolved Solids		754.0		mg/L	1	10.00

Sample: 17803 - MW-4

Analysis:	B, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Boron		0.288		mg/L	1	0.00500

Sample: 17803 - MW-4

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	4631	Date Analyzed:	2003-09-24	Analyzed By:	MT
Prep Batch:	4154	Date Prepared:	2003-09-24	Prepared By:	MT

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.00100		mg/L	1	0.00100
Toluene		<0.00100		mg/L	1	0.00100
Ethylbenzene		<0.00100		mg/L	1	0.00100
Xylene (isomers)		<0.00100		mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0873	mg/L	1	0.100	87	70 - 130
4-Bromofluorobenzene (4-BFB)		0.0947	mg/L	1	0.100	95	70 - 130

Sample: 17803 - MW-4

Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	4689	Date Analyzed:	2003-09-29	Analyzed By:	JSW
Prep Batch:	4207	Date Prepared:	2003-09-26	Prepared By:	JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		147	mg/L	5	0.500

Sample: 17803 - MW-4

Analysis:	Fe, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Iron		<0.0500	mg/L	1	0.0500

Sample: 17803 - MW-4

Analysis:	Fluoride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	4689	Date Analyzed:	2003-09-29	Analyzed By:	JSW
Prep Batch:	4207	Date Prepared:	2003-09-26	Prepared By:	JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Fluoride		1.48	mg/L	5	0.200

Sample: 17803 - MW-4

Analysis:	Mn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4953	Date Analyzed:	2003-10-09	Analyzed By:	RR
Prep Batch:	4095	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Manganese		0.0560	mg/L	1	0.0250

Sample: 17803 - MW-4

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A

QC Batch: 4598 | Date Analyzed: 2003-09-25 | Analyzed By: JSW
Prep Batch: 4122 | Date Prepared: 2003-09-24 | Prepared By: JSW

Parameter	Flag	Result	RL Units	Dilution	RL
Total Dissolved Solids		882.0	mg/L	1	10.00

Sample: 17804 - MW-5

Analysis: B, Total | Analytical Method: S 6010B | Prep Method: S 3010A
QC Batch: 4893 | Date Analyzed: 2003-10-02 | Analyzed By: RR
Prep Batch: 4096 | Date Prepared: 2003-09-23 | Prepared By: TP

Parameter	Flag	Result	RL Units	Dilution	RL
Total Boron		0.264	mg/L	1	0.00500

Sample: 17804 - MW-5

Analysis: BTEX | Analytical Method: S 8021B | Prep Method: S 5030B
QC Batch: 4631 | Date Analyzed: 2003-09-24 | Analyzed By: MT
Prep Batch: 4154 | Date Prepared: 2003-09-24 | Prepared By: MT

Parameter	Flag	Result	RL Units	Dilution	RL
Benzene		0.0216	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		0.0195	mg/L	1	0.00100
Xylene (isomers)		0.0158	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[1]	0.0647	mg/L	1	0.100	65	70 - 130
4-Bromofluorobenzene (4-BFB)		0.0950	mg/L	1	0.100	95	70 - 130

Sample: 17804 - MW-5

Analysis: Chloride (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 4548 | Date Analyzed: 2003-09-23 | Analyzed By: JSW
Prep Batch: 4077 | Date Prepared: 2003-09-22 | Prepared By: JSW

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		49.9	mg/L	5	0.500

Sample: 17804 - MW-5

Analysis: Fe, Total | Analytical Method: S 6010B | Prep Method: S 3010A

[1] Low TFT surrogate recovery due to matrix interference. BFB surrogate recovery shows the method to be in control.

QC Batch: 4893 | Date Analyzed: 2003-10-02 | Analyzed By: RR
Prep Batch: 4096 | Date Prepared: 2003-09-23 | Prepared By: TP

Parameter	Flag	Result	RL Units	Dilution	RL
Total Iron		2.87	mg/L	1	0.0500

Sample: 17804 - MW-5

Analysis: Fluoride (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 4548 | Date Analyzed: 2003-09-23 | Analyzed By: JSW
Prep Batch: 4077 | Date Prepared: 2003-09-22 | Prepared By: JSW

Parameter	Flag	Result	RL Units	Dilution	RL
Fluoride		2.01	mg/L	5	0.200

Sample: 17804 - MW-5

Analysis: Mn, Total | Analytical Method: S 6010B | Prep Method: S 3010A
QC Batch: 4893 | Date Analyzed: 2003-10-02 | Analyzed By: RR
Prep Batch: 4096 | Date Prepared: 2003-09-23 | Prepared By: TP

Parameter	Flag	Result	RL Units	Dilution	RL
Total Manganese		0.469	mg/L	1	0.0250

Sample: 17804 - MW-5

Analysis: TDS | Analytical Method: SM 2540C | Prep Method: N/A
QC Batch: 4598 | Date Analyzed: 2003-09-25 | Analyzed By: JSW
Prep Batch: 4122 | Date Prepared: 2003-09-24 | Prepared By: JSW

Parameter	Flag	Result	RL Units	Dilution	RL
Total Dissolved Solids		512.0	mg/L	1	10.00

Sample: 17805 - MW-6

Analysis: B, Total | Analytical Method: S 6010B | Prep Method: S 3010A
QC Batch: 4893 | Date Analyzed: 2003-10-02 | Analyzed By: RR
Prep Batch: 4096 | Date Prepared: 2003-09-23 | Prepared By: TP

Parameter	Flag	Result	RL Units	Dilution	RL
Total Boron		0.653	mg/L	1	0.00500

Sample: 17805 - MW-6

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	4631	Date Analyzed:	2003-09-24	Analyzed By:	MT
Prep Batch:	4154	Date Prepared:	2003-09-24	Prepared By:	MT

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		0.00200		mg/L	1	0.00100
Toluene		0.00220		mg/L	1	0.00100
Ethylbenzene		<0.00100		mg/L	1	0.00100
Xylene (isomers)		0.00110		mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0918	mg/L	1	0.100	92	70 - 130
4-Bromofluorobenzene (4-BFB)		0.0925	mg/L	1	0.100	92	70 - 130

Sample: 17805 - MW-6

Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	4689	Date Analyzed:	2003-09-29	Analyzed By:	JSW
Prep Batch:	4207	Date Prepared:	2003-09-26	Prepared By:	JSW

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		121		mg/L	5	0.500

Sample: 17805 - MW-6

Analysis:	Fe, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4893	Date Analyzed:	2003-10-02	Analyzed By:	RR
Prep Batch:	4096	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Iron		0.725		mg/L	1	0.0500

Sample: 17805 - MW-6

Analysis:	Fluoride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	4689	Date Analyzed:	2003-09-29	Analyzed By:	JSW
Prep Batch:	4207	Date Prepared:	2003-09-26	Prepared By:	JSW

Parameter	Flag	Result	RL	Units	Dilution	RL
Fluoride		1.57		mg/L	5	0.200

Sample: 17805 - MW-6

Analysis:	Mn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4893	Date Analyzed:	2003-10-02	Analyzed By:	RR

Prep Batch: 4096 Date Prepared: 2003-09-23 Prepared By: TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Manganese		0.373	mg/L	1	0.0250

Sample: 17805 - MW-6

Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A
QC Batch: 4598 Date Analyzed: 2003-09-25 Analyzed By: JSW
Prep Batch: 4122 Date Prepared: 2003-09-24 Prepared By: JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		858.0	mg/L	1	10.00

Sample: 17806 - MW-7

Analysis: B, Total Analytical Method: S 6010B Prep Method: S 3010A
QC Batch: 4893 Date Analyzed: 2003-10-02 Analyzed By: RR
Prep Batch: 4096 Date Prepared: 2003-09-23 Prepared By: TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Boron		0.262	mg/L	1	0.00500

Sample: 17806 - MW-7

Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5030B
QC Batch: 4631 Date Analyzed: 2003-09-24 Analyzed By: MT
Prep Batch: 4154 Date Prepared: 2003-09-24 Prepared By: MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		0.0175	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		0.0230	mg/L	1	0.00100
Xylene (isomers)		0.00420	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0811	mg/L	1	0.100	81	70 - 130
4-Bromofluorobenzene (4-BFB)		0.0964	mg/L	1	0.100	96	70 - 130

Sample: 17806 - MW-7

Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 4611 Date Analyzed: 2003-09-25 Analyzed By: JSW
Prep Batch: 4136 Date Prepared: 2003-09-24 Prepared By: JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		50.3	mg/L	5	0.500

Sample: 17806 - MW-7

Analysis:	Fe, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4893	Date Analyzed:	2003-10-02	Analyzed By:	RR
Prep Batch:	4096	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Iron		3.77	mg/L	1	0.0500

Sample: 17806 - MW-7

Analysis:	Fluoride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	4611	Date Analyzed:	2003-09-25	Analyzed By:	JSW
Prep Batch:	4136	Date Prepared:	2003-09-24	Prepared By:	JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Fluoride		2.40	mg/L	5	0.200

Sample: 17806 - MW-7

Analysis:	Mn, Total	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	4893	Date Analyzed:	2003-10-02	Analyzed By:	RR
Prep Batch:	4096	Date Prepared:	2003-09-23	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Manganese		0.312	mg/L	1	0.0250

Sample: 17806 - MW-7

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	4598	Date Analyzed:	2003-09-25	Analyzed By:	JSW
Prep Batch:	4122	Date Prepared:	2003-09-24	Prepared By:	JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		533.0	mg/L	1	10.00

Sample: 17807 - Duplicate

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	4631	Date Analyzed:	2003-09-24	Analyzed By:	MT

Prep Batch: 4154 Date Prepared: 2003-09-24 Prepared By: MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		0.0186	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		0.0241	mg/L	1	0.00100
Xylene (isomers)		0.00450	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0819	mg/L	1	0.100	82	70 - 130
4-Bromofluorobenzene (4-BFB)		0.0957	mg/L	1	0.100	96	70 - 130

Sample: 17808 - Rinsate

Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5030B
QC Batch: 4631 Date Analyzed: 2003-09-24 Analyzed By: MT
Prep Batch: 4154 Date Prepared: 2003-09-24 Prepared By: MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene (isomers)		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0811	mg/L	1	0.100	81	70 - 130
4-Bromofluorobenzene (4-BFB)		0.0926	mg/L	1	0.100	93	70 - 130

Sample: 17877 - Trip Blank

Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5030B
QC Batch: 4631 Date Analyzed: 2003-09-24 Analyzed By: MT
Prep Batch: 4154 Date Prepared: 2003-09-24 Prepared By: MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene (isomers)		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0780	mg/L	1	0.100	78	70 - 130
4-Bromofluorobenzene (4-BFB)		0.0902	mg/L	1	0.100	90	70 - 130

Method Blank (1) QC Batch: 4548

Parameter	Flag	Result	Units	RL
Chloride		<0.500	mg/L	0.5

Method Blank (1) QC Batch: 4548

Parameter	Flag	Result	Units	RL
Fluoride		<0.200	mg/L	0.2

Method Blank (1) QC Batch: 4598

Parameter	Flag	Result	Units	RL
Total Dissolved Solids		<10.00	mg/L	10

Method Blank (1) QC Batch: 4611

Parameter	Flag	Result	Units	RL
Chloride		<0.500	mg/L	0.5

Method Blank (1) QC Batch: 4611

Parameter	Flag	Result	Units	RL
Fluoride		<0.200	mg/L	0.2

Method Blank (1) QC Batch: 4631

Parameter	Flag	Result	Units	RL
Benzene		<0.00100	mg/L	0.001
Toluene		<0.00100	mg/L	0.001
Ethylbenzene		<0.00100	mg/L	0.001
Xylene (isomers)		<0.00100	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0857	mg/L	1	0.100	86	70 - 130
4-Bromofluorobenzene (4-BFB)		0.0971	mg/L	1	0.100	97	70 - 130

Method Blank (1) QC Batch: 4689

Parameter	Flag	Result	Units	RL
Chloride		<0.500	mg/L	0.5

Method Blank (1) QC Batch: 4689

Parameter	Flag	Result	Units	RL
Fluoride		<0.200	mg/L	0.2

Method Blank (1) QC Batch: 4893

Parameter	Flag	Result	Units	RL
Total Boron		<0.00500	mg/L	0.005

Method Blank (1) QC Batch: 4893

Parameter	Flag	Result	Units	RL
Total Iron		<0.0500	mg/L	0.05

Method Blank (1) QC Batch: 4893

Parameter	Flag	Result	Units	RL
Total Manganese		<0.0250	mg/L	0.025

Method Blank (1) QC Batch: 4953

Parameter	Flag	Result	Units	RL
Total Boron		<0.00500	mg/L	0.005

Method Blank (1) QC Batch: 4953

Parameter	Flag	Result	Units	RL
Total Iron		<0.0500	mg/L	0.05

Method Blank (1) QC Batch: 4953

Parameter	Flag	Result	Units	RL
Total Manganese		<0.0250	mg/L	0.025

Duplicate (1) QC Batch: 4598

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1090	1048	mg/L	1	4	14.2

Laboratory Control Spike (LCS-1) QC Batch: 4548

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit.
Chloride	12.1	11.8	mg/L	1	12.5	<1.49	97	2	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 4548

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Fluoride	2.48	2.48	mg/L	1	2.50	<0.0153	99	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 4611

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	12.7	12.6	mg/L	1	12.5	<1.49	102	1	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 4611

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Fluoride	2.52	2.55	mg/L	1	2.50	<0.0153	101	1	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 4631

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	0.0965	0.0971	mg/L	1	0.100	<0.000410	96	1	79.7 - 110	20
Toluene	0.0951	0.0959	mg/L	1	0.100	<0.000760	95	1	81.7 - 108	20

continued ...

control spikes continued ...

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Ethylbenzene	0.0930	0.0941	mg/L	1	0.100	<0.00100	93	1	80.4 - 109	20
Xylene (isomers)	0.269	0.272	mg/L	1	0.300	<0.00100	90	1	81 - 109	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0933	0.0916	mg/L	1	0.100	93	92	65.5 - 119
4-Bromofluorobenzene (4-BFB)	0.0961	0.0956	mg/L	1	0.100	96	96	68.6 - 120

Laboratory Control Spike (LCS-1) QC Batch: 4689

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	12.0	12.1	mg/L	1	12.5	<1.49	96	1	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 4689

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Fluoride	2.43	2.44	mg/L	1	2.50	<0.0153	97	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 4893

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Boron	0.0450	0.0460	mg/L	1	0.0500	<0.000728	90	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 4893

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Iron	0.499	0.501	mg/L	1	0.500	<0.00220	100	0	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 4893

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Manganese	0.237	0.237	mg/L	1	0.250	<0.000275	95	0	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 4953

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Boron	0.0530	0.0520	mg/L	1	0.0500	<0.000728	106	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 4953

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Iron	0.470	0.472	mg/L	1	0.500	<0.00220	94	0	85 - 115	20
Total Iron	0.470	0.472	mg/L	1	0.500	<0.00220	94	0	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 4953

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Manganese	0.228	0.229	mg/L	1	0.250	<0.000275	91	0	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 4548

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	3430	3440	mg/L	100	12.5	2230	96	0	56.4 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 4548

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Fluoride	250	251	mg/L	100	2.50	<1.53	100	0	65.1 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 4611

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	116	115	mg/L	5	12.5	50.3	105	1	56.4 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 4611

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Fluoride	14.7	14.7	mg/L	5	2.50	2.4	98	0	65.1 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 4689

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	1570	1580	mg/L	50	12.5	1070	80	1	56.4 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 4689

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Fluoride	126	126	mg/L	50	2.50	7.98	94	0	65.1 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 4893

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Boron	0.709	0.707	mg/L	1	0.0500	0.653	112	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 4893

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Iron	1.24	1.25	mg/L	1	0.500	0.725	103	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 4893

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Manganese	0.620	0.624	mg/L	1	0.250	0.377	97	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-2) QC Batch: 4893

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Boron	0.0510	0.0500	mg/L	1	0.0500	<0.000728	102	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-2) QC Batch: 4893

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Iron	0.523	0.524	mg/L	1	0.500	0.012	102	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-2) QC Batch: 4893

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Manganese	0.301	0.301	mg/L	1	0.250	0.064	95	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 4953

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Boron	0.0540	0.0540	mg/L	1	0.0500	<0.000728	108	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 4953

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Iron	0.483	0.489	mg/L	1	0.500	0.003	96	1	75 - 125	20
Total Iron	0.483	0.489	mg/L	1	0.500	0.003	96	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 4953

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Manganese	0.378	0.381	mg/L	1	0.250	0.142	94	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1) QC Batch: 4548

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.9	95	90 - 110	2003-09-23

Standard (ICV-1) QC Batch: 4548

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	2.50	2.55	102	90 - 110	2003-09-23

Standard (CCV-1) QC Batch: 4548

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.8	94	90 - 110	2003-09-23

Standard (CCV-1) QC Batch: 4548

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	2.50	2.51	100	90 - 110	2003-09-23

Standard (ICV-1) QC Batch: 4598

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1001	100	90 - 110	2003-09-25

Standard (CCV-1) QC Batch: 4598

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1021	102	90 - 110	2003-09-25

Standard (ICV-1) QC Batch: 4611

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	12.2	98	90 - 110	2003-09-25

Standard (ICV-1) QC Batch: 4611

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	2.50	2.62	105	90 - 110	2003-09-25

Standard (CCV-1) QC Batch: 4611

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	12.7	102	90 - 110	2003-09-25

Standard (CCV-1) QC Batch: 4611

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	2.50	2.62	105	90 - 110	2003-09-25

Standard (ICV-1) QC Batch: 4631

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0959	96	85 - 115	2003-09-24
Toluene		mg/L	0.100	0.0946	95	85 - 115	2003-09-24
Ethylbenzene		mg/L	0.100	0.0927	93	85 - 115	2003-09-24
Xylene (isomers)		mg/L	0.300	0.268	89	85 - 115	2003-09-24

Standard (CCV-1) QC Batch: 4631

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0985	98	85 - 115	2003-09-24
Toluene		mg/L	0.100	0.0965	96	85 - 115	2003-09-24
Ethylbenzene		mg/L	0.100	0.0944	94	85 - 115	2003-09-24
Xylene (isomers)		mg/L	0.300	0.273	91	85 - 115	2003-09-24

Standard (CCV-2) QC Batch: 4631

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0958	96	85 - 115	2003-09-24
Toluene		mg/L	0.100	0.0945	94	85 - 115	2003-09-24
Ethylbenzene		mg/L	0.100	0.0933	93	85 - 115	2003-09-24
Xylene (isomers)		mg/L	0.300	0.272	91	85 - 115	2003-09-24

Standard (ICV-1) QC Batch: 4689

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	12.6	101	90 - 110	2003-09-29

Standard (ICV-1) QC Batch: 4689

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	2.50	2.50	100	90 - 110	2003-09-29

Standard (CCV-1) QC Batch: 4689

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	12.5	100	90 - 110	2003-09-29

Standard (CCV-1) QC Batch: 4689

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	2.50	2.46	98	90 - 110	2003-09-29

Standard (ICV-1) QC Batch: 4893

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Boron		mg/L	1.00	1.00	100	90 - 110	2003-10-02

Standard (ICV-1) QC Batch: 4893

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Iron		mg/L	1.00	0.998	100	90 - 110	2003-10-02

Standard (ICV-1) QC Batch: 4893

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Manganese		mg/L	1.00	0.967	97	90 - 110	2003-10-02

Standard (CCV-1) QC Batch: 4893

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Boron		mg/L	1.00	0.983	98	90 - 110	2003-10-02

Standard (CCV-1) QC Batch: 4893

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Iron		mg/L	1.00	1.00	100	90 - 110	2003-10-02

Standard (CCV-1) QC Batch: 4893

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Manganese		mg/L	1.00	0.963	96	90 - 110	2003-10-02

Standard (CCV-2) QC Batch: 4893

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Boron		mg/L	1.00	0.983	98	90 - 110	2003-10-02

Standard (CCV-2) QC Batch: 4893

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Iron		mg/L	1.00	1.02	102	90 - 110	2003-10-02

Standard (CCV-2) QC Batch: 4893

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Manganese		mg/L	1.00	0.976	98	90 - 110	2003-10-02

Standard (ICV-1) QC Batch: 4953

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Boron		mg/L	1.00	1.01	101	90 - 110	2003-10-09

Standard (ICV-1) QC Batch: 4953

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Iron		mg/L	1.00	1.00	100	90 - 110	2003-10-09

Standard (ICV-1) QC Batch: 4953

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Manganese		mg/L	1.00	1.00	100	90 - 110	2003-10-09

Standard (CCV-1) QC Batch: 4953

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Boron		mg/L	1.00	1.03	103	90 - 110	2003-10-09

Standard (CCV-1) QC Batch: 4953

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Manganese		mg/L	1.00	0.965	96	90 - 110	2003-10-09

3092107

TRIDENT ENVIRONMENTAL

Trident Environmental
P.O. Box 7624
Midland, Texas 79708
(915) 682-0808
(915) 682-0727 (Fax)

V-102-0903-1

Chain of Custody

Date 9/18/03 Page 1 of 1

Lab Name: TraceAnalysis Inc.
Address: 6701 Aberdeen, Ste. 9
Lubbock, Texas 79424
Telephone: 806-794-1296

Samplers (SIGNATURES) Gil Van Deventer, Dale T Littlejohn

Sample Identification		Matrix	Date	Time	Sample Type: G - Grab, C- Composite	BTEX (EPA 8021B)	MTBE (EPA 8021B)	SVOC (EPA 8270)	PAH (EPA 8270)	VOC (EPA 8260)	TPH (EPA 418.1)	TPH (TX-1005)	TPH (TX-1006)	GRO (EPA 8015G)	DRO (EPA 8015D)	TDS (EPA 160.1)	Anions/Cations	TCLP Metals	Total Metals: As, Pb, Se, Ba, Cd, Cr, B, Co, Fe, & Mn	Ions: Sodium, Cl, F, & TDS						Number of Containers
MW-1	17799	Water	9-18-03	1710		✓													✓	✓						4
MW-1d	800	Water	9-18-03	1630		✓													✓	✓						4
MW-2	801	Water	9-18-03	1345		✓													✓	✓						4
MW-3	802	Water	9-18-03	1230		✓													✓	✓						4
MW-4	803	Water	9-18-03	1416		✓													✓	✓						4
MW-5	804	Water	9-18-03	1440		✓													✓	✓						4
MW-6	805	Water	9-18-03	1510		✓													✓	✓						4
MW-7	806	Water	9-18-03	1556		✓													✓	✓						4
Duplicate	807	Water	9-18-03	0000		✓																				2
Rinsate	808	Water	9-18-03	1630		✓																				2

Analysis Request

Trip Blank. Project Information 17877

Project Name:	Duke Energy Field Services
Project Location:	Monument Booster
Project Manager:	Gil Van Deventer
Cost Center No..	V-102
Shipping ID No.:	
Bill to (see below):	

Sample Receipt

Total Containers:	
COC Seals:	
Rec'd Good Cond/Cold:	
Conforms to Records:	
Lab No.:	

Special Instructions/Comments: Please send invoice direct to client:
Duke Energy Field Svcs, Attn: ~~Steve Weathers, PO Box 5493, Denver, CO 80217~~

Relinquished By: (1) (Company)	Relinquished By: (2) (Company)	Relinquished By: (3) (Company)
Trident Environmental	TRACE ANALYSIS	
(Printed Name) Dale T Littlejohn	(Printed Name) HELEN SHELTON	(Printed Name)
(Signature) Dale T Littlejohn	(Signature) Helen Shelton	(Signature)
(Date) 9/19/03 (Time) 0930	(Date) 9/19/03 (Time) 1730	(Date) (Time)
Received By: (1) (Company)	**Received By: (2) (Company)**	**Received By: (3) (Company)**
TRACE ANALYSIS	Trace Analysis	
(Printed Name) HELEN SHELTON	(Printed Name) Michael Abel	(Printed Name)
(Signature) Helen Shelton	(Signature) Michael Abel	(Signature)
(Date) 9/19/03 (Time) 0930	(Date) 9/20/03 (Time) 11:00	(Date) (Time)

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MA 0°C GLI - 166130 4667

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
TRIDENT ENVIRONMENTAL
ATTN: GIL VAN DEVENTER
P.O. BOX 7624
MIDLAND, TX 79708
FAX TO: (432) 682-0727

Receiving Date: 09/18/03
Reporting Date: 09/22/03
Project Number: V-102
Project Name: DUKE ENERGY FIELD SERVICES
Project Location: MONUMENT BOOSTER

Sampling Date: 09/18/03
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH

LAB NUMBER	SAMPLE ID	SO_4 (mg/L)	NO_3 (mg/L)
ANALYSIS DATE:		09/19/03	09/19/03
H8018-1	MW 3	43.6	0.49
H8018-2	MW 2	59.2	0.76
H8018-3	MW 4	51.8	0.70
H8018-4	MW 5	39.2	0.39
H8018-5	MW 6	24.4	1.07
H8018-6	MW 7	44.8	0.82
H8018-7	MW 1D	47.0	0.48
H8018-8	MW 1	45.5	0.58
Quality Control		53.65	2.98
True Value QC		50.00	3.00
% Recovery		107	99.2
Relative Percent Difference		1.5	2.0
METHODS: EPA 600/4-79-020		375.4	353.3

Amy Hill
Chemist

9/22/03
Date

h8018

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page____ of____

Company Name:	TRIDENT ENVIRONMENTAL
Project Manager:	Gil Van Deventer
Address:	PO Box 7624
City:	Midland State: TX Zip: 79708
Phone #:	432-682-0808
Fax #:	432-682-0727
Project #:	Project Owner: DEFS
Project Name:	Duke Energy Field Services
Project Location:	Monument Booster

BILL TO	PO #:
Company:	DEFS
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRES.: ACID:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	ANALYSIS REQUEST: NaCl	SCy
H6018-1	MW-3		1	✓							✓		09/18/03	1230	L	L
-2	MW-2		1	✓							✓			1345	L	L
-3	MW-4		1	✓							✓			1416	L	L
-4	MW-5		1	✓							✓			1440	L	L
-5	MW-6		1	✓							✓			1510	L	L
-6	MW-7		1	✓							✓			1536	L	L
-7	MW-1d		1	✓							✓			1630	L	L
-8	MW-1		1	✓							✓		↓	1710	L	L

Sampler Relinquished:	Date:	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time:		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date: 09/18/2003	Received By: (Lab Staff)	REMARKS:
	Time: 6:15 P		
Delivered By: (Circle One)	Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:			

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

TRIDENT ENVIRONMENTAL

Trident Environmental
P.O. Box 7624
Midland, Texas 79708
(915) 682-0808
(915) 682-0727 (Fax)

V-102-0903-2

Chain of Custody

Date 9/18/03 Page 1 of 1

Lab Name: Cardinal Laboratories
Address: 101 East Marland Blvd.
Hobbs, NM 88240
Telephone: 505-393-2326

Samplers (SIGNATURES)

Sample Identification	Matrix	Date	Time	Sample Type: G - Grab, C- Composite	BTEX (EPA 8021B)	MTBE (EPA 8021B)	SVOC (EPA 8270)	PAH (EPA 8270)	VOC (EPA 8260)	TPH (EPA 418.1)	TPH (TX-1005)	TPH (TX-1006)	GRO (EPA 8015G)	DRO (EPA 8015D)	TDS (EPA 160.1)	Anions/Cations	TCLP Metals	Total Metals: Al, As, B, Cr, Fe, & Mn	Ions: SO_4, NO_3, ~~Cl, F, CaCO3~~						Number of Containers
MW-3	Water	9/18/03	1230	G															✓						1
MW-2	"	"	1345	G															✓						1
MW-4	"	"	1416	G															✓						1
MW-5	"	"	1440	G															✓						1
MW-6	"	"	1510	G															✓						1
MW-7	"	"	1556	G															✓						1
MW-1d	"	"	1630	G															✓						1
MW-1	"	"	1710	G															✓						1

Project Information		Sample Receipt	
Project Name:	Duke Energy Field Services	Total Containers:	
Project Location:	Monument Booster	COC Seals:	
Project Manager:	Gil Van Deventer	Rec'd Good Cond/Cold:	
Cost Center No.:	V-102	Conforms to Records:	
Shipping ID No.:		Lab No.:	
Bill to (see below):			

Special Instructions/Comments: Please send invoice direct to client:

Duke Energy Field Svcs, Attn: ~~Steve Weathers, PO Box 5493, Denver, CO 80217~~
Richard Baker

Relinquished By: (1) (Company)	Relinquished By: (2) (Company)	Relinquished By: (3) (Company)
Trident Environmental		
(Printed Name) Dale T. Littlejohn	(Printed Name)	(Printed Name)
(Signature)	(Signature)	(Signature)
(Date) (Time)	(Date) (Time)	(Date) (Time)
Received By: (1) (Company)	**Received By: (2) (Company)**	**Received By: (3) (Company)**
		Cardinal Labs
(Printed Name)	(Printed Name)	(Printed Name) Gayle A Potter
(Signature)	(Signature)	(Signature)
(Date) (Time)	(Date) (Time)	(Date) 09/18/2003 (Time) 6:15P

Copy signed original form for Trident Environmental records

APPENDIX B

MONITORING WELL

SAMPLING DATA SHEETS

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

GILBERT VAN DEVENTER
TRIDENT ENVIRONMENTAL
P.O. BOX 7624
MIDLAND, TX 79708

Order#: G0306361
Project: V-104
Project Name: Monument Booster/
Location: Monument Booster

Lab ID: 0306361-06
Sample ID: MW-7

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Nitrogen, Nitrate	<0.1	mg/L	1	0.10	353.3	4/26/03	SB
Sulfate	45.8	mg/L	2.5	1.25	375.4	4/28/03	SB

Approval: Raland K Tuttle 4-29-03
Raland K. Tuttle, Lab Director, QA Officer Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0306361

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Nitrogen, Nitrate-mg/L	0005344-01			<0.1		
Sulfate-mg/L	0005343-01			<0.50		
DUPLICATE WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Nitrogen, Nitrate-mg/L	0306361-01	1		1.0		0.%
Sulfate-mg/L	0306361-01	140		141		0.7%
SRM WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Nitrogen, Nitrate-mg/L	0005344-04		2	1.9	95.%	
Sulfate-mg/L	0005343-04		50	52.0	104.%	

TRIDENT ENVIRONMENTAL

Trident Environmental
P.O. Box 7624
Midland, Texas 79708
(915) 682-0808
(915) 682-0727 (Fax)

V-104-0403-2

Chain of Custody

Date 4-25-03 Page 1 of 1

Lab Name:	Environmental Lab of Texas, Inc.
Address:	12600 West I-20 East
	Odessa, TX 79763
Telephone:	(915) 563-1800 Fax: (915) 563-1713

Samplers (SIGNATURES)

Sample Identification	Matrix	Date	Time	Sample Type: G - Grab, C- Composite	BTEX (EPA 8021B)	MTBE (EPA 8021B)	SVOC (EPA 8270)	PAH (EPA 8270)	VOC (EPA 8260)	TPH (EPA 418.1)	TPH (TX-1005)	TPH (TX-1006)	GRO (EPA 8015)	DRO (EPA 8015)	TDS (EPA 160.1)	Anions/Cations	TCLP Metals	Total Metals: Al, As, B, Cr, Fe, & Mn	SO4 and NO3						Number of Containers
034034-01 MW-1	Water	4-25-03	1640																✓						1
02 MW-2	Water	4-25-03	1430																✓						1
03 MW-3	Water	4-25-03	1040																✓						1
04 MW-4	Water	4-25-03	1216																✓						1
05 MW-6	Water	4-25-03	1320																✓						1
06 MW-7	Water	4-25-03	1545																✓						1

Analysis Request

Project Information		Sample Receipt	
Project Name:	Duke Energy Field Services	Total Containers:	
Project Location:	Monument Booster	COC Seals:	
Project Manager:	Gil Van Deventer	Rec'd Good Cond/Cold:	0C
Cost Center No.:	V-104	Conforms to Records:	
Shipping ID No.:		Lab No.:	
Bill to (see below):			

Special Instructions/Comments: Please send invoice direct to client:

Duke Energy Field Services, Attn: Tim Hunsucker, Mail Code: EC12ZB,
PO Box 1006, Charlotte NC 28201

Relinquished By: (1) (Company)	Relinquished By: (2) (Company)	Relinquished By: (3) (Company)
Trident Environmental		
(Printed Name) Gil Van Deventer	(Printed Name)	(Printed Name)
(Signature)	(Signature)	(Signature)
(Date) 4/25/03 (Time) 9:30 am	(Date) (Time)	(Date) (Time)
Received By: (1) (Company)	**Received By: (2) (Company)**	**Received By: (3) (Company)**
ELOT		
(Printed Name) RAland K Tuttle	(Printed Name)	(Printed Name)
(Signature)	(Signature)	(Signature)
(Date) 4-26-03 (Time) 0800	(Date) (Time)	(Date) (Time)

Copy signed original form for Trident Environmental records

APPENDIX B

MONITORING WELL

SAMPLING DATA SHEETS

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-1D**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 4/25/03
PROJECT NO. V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 36.12 Feet
DEPTH TO WATER: 25.85 Feet
HEIGHT OF WATER COLUMN: 10.27 Feet
WELL DIAMETER: 2.0 Inch

5.0 Minimum Gallons to purge 3 well volumes
(Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °F	COND. *m*S/cm	pH	DO mg/L	Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1640	5	75.0	636	7.25	1.14	0.12	Hand bailed

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 1 - 500 ml plastic unpreserved container for SO_4 & NO_3 analysis. Also transferred filtered sample into 1 - 500 ml plastic container for Fe & Mn analysis.

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-2**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 4/25/03
PROJECT NO. V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 2" SuperPurger Pump
SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 43.06 Feet
DEPTH TO WATER: 29.16 Feet
HEIGHT OF WATER COLUMN: 13.90 Feet
WELL DIAMETER: 4.0 Inch

27.2 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °F	COND. mS/cm	pH	DO mg/L	Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1343	0	-	-	-	4.86	-	Pump Turned on.
1356	5	71.2	6570	6.67	5.04	-	
1400	10	71.1	5090	6.75	5.49	-	
1406	15	71.1	5170	6.74	5.65	-	
1412	20	71.9	5230	6.75	5.37	-	
1417	25	71.2	5260	6.75	5.31	-	
1424	30	72.5	5280	6.76	5.10	-	
1430	35				5.21	0.06	Pump turned off..
						1430	= Time of sample collection
						0.40	= approximate flow rate (gal/min)

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 1 - 500 ml plastic unpreserved container for SO_4 & NO_3 analysis. Also transferred filtered sample into 1 - 500 ml plastic container for Fe & Mn analysis.

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-3**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 4/25/03
PROJECT NO: V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 2" SuperPurger Pump
SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 35.47 Feet
DEPTH TO WATER: 23.49 Feet
HEIGHT OF WATER COLUMN: 11.98 Feet
WELL DIAMETER: 4.0 Inch

23.5 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °F	COND. mS/cm	pH	DO mg/L	Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
0950	0	-	-	-	2.02	-	Pump Turned on.
1005	3	75.6	1104	6.92	-	-	
1010	6	74.4	1098	6.90	1.59	-	
1015	9	72.4	1076	7.04	2.02	-	
1020	12	72.5	1031	6.90	2.30	-	
1025	15	69.2	1085	7.00	2.70	-	
1030	18	68.8	1067	7.21	5.39	-	
1035	20	72.0	1083	7.20	5.52	0.04	Pump turned off.
						1040	= Time of sample collection
						0.24	= approximate flow rate (gal/min)

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 1 - 500 ml plastic unpreserved container for SO_4 & NO_3 analysis. Also transferred filtered sample into 1 - 500 ml plastic container for Fe & Mn analysis.

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-4**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 4/25/03
PROJECT NO: V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 2" SuperPurger Pump
SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:
☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 38.71 Feet
DEPTH TO WATER: 26.64 Feet
HEIGHT OF WATER COLUMN: 12.07 Feet
WELL DIAMETER: 4.0 Inch

23.6 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °F	COND. mS/cm	pH	DO mg/L	Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1134	0	-	-	-	0.63	-	Pump Turned on.
1142	3	70.5	1125	6.73	1.12	-	
1148	6	74.0	1127	6.76	1.15	-	
1153	9	73.3	1057	6.84	1.75	-	
1154	12	74.0	1081	-	-	-	
1157	15	70.3	1069	6.90	3.45	-	Well pumped dry at 17.5 gal.
1205	18	71.0	1063	6.95	5.19	0.05	Pump turned off..
						1216	= Time of sample collection
						0.65	= approximate flow rate (gal/min)

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 1 - 500 ml plastic unpreserved container for SO_4 & NO_3 analysis. Also transferred filtered sample into 1 - 500 ml plastic container for Fe & Mn analysis.

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-6**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 4/25/03
PROJECT NO: V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 2" SuperPurger Pump
SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 39.30 Feet
DEPTH TO WATER: 25.39 Feet
HEIGHT OF WATER COLUMN: 13.91 Feet
WELL DIAMETER: 4.0 Inch

27.2 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °F	COND. mS/cm	pH	DO mg/L	Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1244	0	-	-	-	0.40	-	Pump Turned on.
1254	5	73.0	1215	6.59	0.75	-	
1259	10	71.0	1195	6.61	0.64	-	
1304	15	70.5	1200	6.59	0.55	-	
1309	20	70.5	1203	6.90	0.47	-	
1315	25	70.5	1204	6.61	0.30	-	
1319	30	70.5	1207	6.61	0.40	-	
1320	35	-	-	-	0.04	0.42	Pump turned off.
						1320	= Time of sample collection
						0.40	= approximate flow rate (gal/min)

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 1 - 500 ml plastic unpreserved container for SO_4 & NO_3 analysis. Also transferred filtered sample into 1 - 500 ml plastic container for Fe & Mn analysis.

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-7**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 4/25/03
PROJECT NO. V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 2" SuperPurger Pump
SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 36.22 Feet
DEPTH TO WATER: 25.56 Feet
HEIGHT OF WATER COLUMN: 10.66 Feet
WELL DIAMETER: 4.0 Inch

20.9 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °F	COND. mS/cm	pH	DO mg/L	Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1508	0	-	-	-	0.00	-	Pump Turned on.
1516	4	71.2	709	7.06	0.00	-	
1520	8	69.8	769	6.75	0.00	-	
1525	12	68.0	784	6.72	0.28	-	
1529	16	68.0	788	6.72	0.40	-	
1532	20	67.5	832	6.72	0.20	-	
1536	24	67.6	835	6.71	0.09	-	
1540	28	67.5	824	6.71	0.20	-	
1545	32	-	-	-	-	2.92	Pump turned off..
						1545	= Time of sample collection
							Collected duplicate sample (BTEX)
						0.86	= approximate flow rate (gal/min)

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 1 - 500 ml plastic unpreserved container for SO_4 & NO_3 analysis. Also transferred filtered sample into 1 - 500 ml plastic container for Fe & Mn analysis.

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-1**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 9/18/03
PROJECT NO. V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 36.12 Feet
DEPTH TO WATER: 26.56 Feet
HEIGHT OF WATER COLUMN: 9.56 Feet
WELL DIAMETER: 4.0 Inch

18.7 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °C / °F	COND. mS/cm	pH	DO mg/L	*Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1710	12	69.1	0.94	7.25	1.25	1.55	Bailed dry at 12 gal.
						0.05	= Ferrous Iron concentration (mg/L)*
						1710	= Time of sample collection

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 2 - 500 ml plastic unpreserved containers for NO_3, SO_4, Cl, F & TDS analysis. Also transferred filtered sample into 1 - 500 ml plastic container for B, Fe & Mn analysis.

* Used a Hach Model 2010 Spectrophotometer to measure ferrous iron in the field (Method 8146).

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-1D**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 9/18/03
PROJECT NO. V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 36.12 Feet
DEPTH TO WATER: 26.57 Feet
HEIGHT OF WATER COLUMN: 9.55 Feet
WELL DIAMETER: 2.0 Inch

4.7 Minimum Gallons to purge 3 well volumes (Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °F	COND. mS/cm	pH	DO mg/L	*Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1630	5	69.1	0.84	7.55	1.57	0.12	Hand bailed
						1630	= Time of sample collection

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 2 - 500 ml plastic unpreserved containers for NO_3, SO_4, Cl, F & TDS analysis. Also transferred filtered sample into 1 - 500 ml plastic container for B, Fe & Mn analysis.

* Used a Hach Model 2010 Spectrophotometer to measure ferrous iron in the field (Method 8146).

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-2**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 9/18/03
PROJECT NO. V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 3" Grundfos Pump

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 43.06 Feet
DEPTH TO WATER: 29.59 Feet
HEIGHT OF WATER COLUMN: 13.47 Feet
WELL DIAMETER: 4.0 Inch

26.4 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °F	COND. mS/cm	pH	DO mg/L	*Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1324	0	-	-	-	-	-	Pump Turned on.
1328	5	68.8	3.87	7.74	7.90	-	pH readings too low (bad meter?)
1332	10	70.2	3.72	7.45	9.87	-	
1335	12	70.1	3.67	7.36	10.77	-	
1338	14	70.8	7.31	7.16	10.00	-	
1341	15	70.3	7.37	7.17	10.77	-	
1345	16	70.9	7.36	7.18	10.10	0.27	Well pumped dry.
						1.00	= approximate flow rate (gal/min)
						1345	= Time of sample collection

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 2 - 500 ml plastic unpreserved containers for NO_3, SO_4, Cl, F & TDS analysis. Also transferred filtered sample into 1 - 500 ml plastic container for B, Fe & Mn analysis.

* Used a Hach Model 2010 Spectrophotometer to measure ferrous iron in the field (Method 8146).

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-3**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 9/18/03
PROJECT NO. V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 3" Grundfos Pump

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 35.47 Feet
DEPTH TO WATER: 23.94 Feet
HEIGHT OF WATER COLUMN: 11.53 Feet
WELL DIAMETER: 4.0 Inch

22.6 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °F	COND. *m*S/cm	pH	DO mg/L	*Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1201	0	-	-	-	-	-	Pump Turned on.
1205	4	69.7	1.41	7.22	0.98	-	
1209	8	70.2	1.44	7.15	0.87	-	Pumped off at 8 gal.
1219	10	70.4	1.34	7.52	6.44	0.4	Pumped off at 10 gal.
						1230	= Time of sample collection
						1.00	= approximate flow rate (gal/min)

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 2 - 500 ml plastic unpreserved containers for NO_3, SO_4, Cl, F & TDS analysis. Also transferred filtered sample into 1 - 500 ml plastic container for B, Fe & Mn analysis.

* Used a Hach Model 2010 Spectrophotometer to measure ferrous iron in the field (Method 8146).

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-4**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 9/18/03
PROJECT NO. V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 3" Grundfos Pump

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 38.71 Feet
DEPTH TO WATER: 27.05 Feet
HEIGHT OF WATER COLUMN: 11.66 Feet
WELL DIAMETER: 4.0 Inch

22.8 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °F	COND. *m*S/cm	pH	DO mg/L	*Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1403	0	-	-	-	-	-	Pump Turned on.
1406	4	70.5	2.07	7.13	1.85	-	
1409	7	71.1	1.47	7.13	0.98	-	
1413	10	71.9	1.41	7.22	3.78	0.08	Well pumped dry at 10 gal.
						1416	= Time of sample collection
						1.00	= approximate flow rate (gal/min)

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 2 - 500 ml plastic unpreserved containers for NO_3, SO_4, Cl, F & TDS analysis. Also transferred filtered sample into 1 - 500 ml plastic container for B, Fe & Mn analysis.

* Used a Hach Model 2010 Spectrophotometer to measure ferrous iron in the field (Method 8146).

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-5**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 9/18/03
PROJECT NO. V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 37.00 Feet
DEPTH TO WATER: 28.58 Feet
HEIGHT OF WATER COLUMN: 8.42 Feet
WELL DIAMETER: 4.0 Inch

16.5 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °F	COND. *m*S/cm	pH	DO mg/L	*Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1440	20	71.5	0.95	7.33	1.43	0.51	Hand bailed
						1440	= Time of sample collection

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 2 - 500 ml plastic unpreserved containers for NO_3, SO_4, Cl, F & TDS analysis. Also transferred filtered sample into 1 - 500 ml plastic container for B, Fe & Mn analysis.

* Used a Hach Model 2010 Spectrophotometer to measure ferrous iron in the field (Method 8146).

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-6**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 9/18/03
PROJECT NO. V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 3" Grundfos Pump
SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 39.30 Feet
DEPTH TO WATER: 25.95 Feet
HEIGHT OF WATER COLUMN: 13.35 Feet
WELL DIAMETER: 4.0 Inch

26.1 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °F	COND. *m*S/cm	pH	DO mg/L	*Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1450	4	73.1	1.55	7	1.67	-	Pump turned on
1452	8	71.3	1.54	7.02	1.24	-	
1455	12	70.8	1.59	6.97	0.82	-	
1457	16	70.7	1.6	6.96	0.57	-	
1500	20	70.6	1.61	6.96	0.58	-	
1502	24	70.5	1.61	6.97	0.4	-	
1507	35	-	-	-	-	0.64	Pump turned off.
						-	
						0.54	= approximate flow rate (gal/min)
						1510	= Time of sample collection

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 2 - 500 ml plastic unpreserved containers for NO_3, SO_4, Cl, F & TDS analysis. Also transferred filtered sample into 1 - 500 ml plastic container for B, Fe & Mn analysis.

* Used a Hach Model 2010 Spectrophotometer to measure ferrous iron in the field (Method 8146).

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-7**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 9/18/03
PROJECT NO. V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 3" Grundfos Pump

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 36.22 Feet
DEPTH TO WATER: 26.18 Feet
HEIGHT OF WATER COLUMN: 10.04 Feet
WELL DIAMETER: 4.0 Inch

19.7 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °F	COND. *m*S/cm	pH	DO mg/L	*Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1544	4	70.6	0.94	7.23	1.05	-	Pump turned on.
1546	8	69.9	1.04	7.07	0.64	-	
1548	12	69.1	0.98	7.21	0.69	-	
1550	16	68.7	0.95	7.28	0.69	-	
1552	20	68.6	0.93	7.28	1.07	-	
1554	24	69.3	0.93	7.25	1.80	-	
1556	27	69.2	0.95	7.27	2.37	2.63	Pump turned off..
						1556	= Time of sample collection
						1.92	= approximate flow rate (gal/min)

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 2 - 500 ml plastic unpreserved containers for NO_3, SO_4, Cl, F & TDS analysis. Also transferred filtered sample into 1 - 500 ml plastic container for B, Fe & Mn analysis.

* Used a Hach Model 2010 Spectrophotometer to measure ferrous iron in the field (Method 8146).

WELL SAMPLING DATA FORM

CLIENT: DUKE ENERGY FIELD SERVICES
WELL ID: **MW-7**
SITE NAME: MONUMENT BOOSTER STATION
DATE: 9/18/03
PROJECT NO. V-104
SAMPLER: Littlejohn / Van Deventer

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 3" Grundfos Pump
SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:
☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 36.22 Feet
DEPTH TO WATER: 26.18 Feet
HEIGHT OF WATER COLUMN: 10.04 Feet
WELL DIAMETER: 4.0 Inch

19.7 Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °F	COND. *m*S/cm	pH	DO mg/L	*Fe^{+2} mg/L	PHYSICAL APPEARANCE AND REMARKS
1544	4	70.6	0.94	7.23	1.05	-	Pump turned on.
1546	8	69.9	1.04	7.07	0.64	-	
1548	12	69.1	0.98	7.21	0.69	-	
1550	16	68.7	0.95	7.28	0.69	-	
1552	20	68.6	0.93	7.28	1.07	-	
1554	24	69.3	0.93	7.25	1.80	-	
1556	27	69.2	0.95	7.27	2.37	2.63	Pump turned off..
						1556	= Time of sample collection
						1.92	= approximate flow rate (gal/min)

COMMENTS: Transferred unfiltered sample into 2 - 40 ml VOAs preserved with HCL for BTEX analysis, and into 2 - 500 ml plastic unpreserved containers for NO_3, SO_4, Cl, F & TDS analysis. Also transferred filtered sample into 1 - 500 ml plastic container for B, Fe & Mn analysis.

* Used a Hach Model 2010 Spectrophotometer to measure ferrous iron in the field (Method 8146).