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2007 AGWMR

MAR 2008

XTO ENERGY INC.

ANNUAL GROUNDWATER REPORT

2007

MASDEN GAS COM #1E
(D) SECTION 28 – T29N – R11W, NMPM
SAN JUAN COUNTY, NEW MEXICO

PREPARED FOR:
MR. GLENN VON GONTEN
NEW MEXICO OIL CONSERVATION DIVISION

January 2008

TABLE OF CONTENTS

Appendices

2007 XTO GROUNDWATER REPORT

MASDEN GAS COM #1E

SITE DETAILS

LEGALS - TWN: 29N **RNG:** 11W **SEC:** 28 **UNIT:** D
NMOCD HAZARD RANKING: 30 **LAND TYPE:** FEE

PREVIOUS ACTIVITIES

Excavation: Dec-93 (350 CY) **Monitoring Wells:** Sep/Oct-99
Quarterly Sampling Initiated: Nov-99

SITE MAP

A site map is presented as Figure 1.

SUMMARY TABLES

A summary of laboratory results from historical and current groundwater monitoring is presented as Table 1. A summary of general water quality data from 1999 is presented as Table 2. Copies of the laboratory data sheets and associated quality assurance/quality control data for 2006 and 2007 are presented as Attachment 1.

POTENTIOMETRIC SURFACE DIAGRAMS

Field data collected during site monitoring activities indicate a groundwater gradient that during August and November 2006 the groundwater gradient was to the northeast away from the San Juan River. During February and May 2007 water surface elevations indicate a gradient to the southwest, a reversal of almost 180 degrees. The site is approximately 500 feet from the San Juan River and within the irrigated flood plain. The gradient is relatively shallow and varies from .036 ft/ft to the northeast to .004 ft/ft to the southwest. The groundwater at the site is shallow; approximately three feet beneath ground surface and therefore likely to show a rapid response to irrigation and precipitation. The shallow groundwater coupled with irrigation and precipitation could account for the variability of the local gradient. Figures 2 – 5 illustrate the estimated groundwater gradients for 2006 and 2007.

ANNUAL GROUNDWATER REMEDIATION REPORTS

Previous groundwater reports submitted to New Mexico Oil Conservation Division (NMOCD) in 2005 and 2006 recommended quarterly sampling of the groundwater monitoring wells, in accordance with the NMOCD approved Groundwater Management Plan.

2007 ACTIVITIES

Quarterly groundwater samples were collected from MW-1, MW-2, and MW-3. Groundwater analytical data has been below New Mexico Water Quality Control Commission (NMWQCC) standards for four consecutive quarters.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Bore/Test Hole Reports are presented as Figures 6 - 8 representing drilling that occurred on site in September and October 1999.

2007 XTO GROUNDWATER REPORT

DISPOSITION OF GENERATED WASTES

Waste generated (groundwater) during monitoring well sampling and development was placed in the produced water tank located on the well site.

CONCLUSIONS

January 1998 XTO Energy Inc. (XTO) acquired the Masden Gas Com #1E from Amoco Production Company. XTO understands the initial evaluation of groundwater impact came from samples of groundwater collected during the pit assessment phase in August 1992 (Attachment 2). It seems the detection limits of the laboratory equipment were extraordinarily high causing the parameters to appear low (below detection limits). Additional samples were collected from the bottom of the blow pit following excavation of impacted soil. Laboratory analysis of the initial sample indicated elevated levels of dissolved phase benzene, toluene, ethyl benzene and total xylenes (BTEX) in the groundwater. In 1999 three groundwater monitoring wells were installed to delineate the extent of hydrocarbon impact to groundwater. Monitoring well MW-2 was installed near the center of the source area (closed and backfilled earthen blow pit). Monitoring wells numbered MW-1 and MW-3 were placed down gradient of MW-2. BTEX constituents were not detected above the laboratory equipment detection limits (0.2 ug/L) in any of the three monitoring wells. Sampling was terminated and site closure requests were submitted.

Correspondence from NMOCD in December 2000 denied closure at this site until four (4) consecutive quarters of groundwater sampling demonstrated BTEX constituents below NMWQCC standards.

Groundwater analytical data from MW-1, MW-2, and MW-3 for four (4) consecutive quarters have demonstrated no detectable levels of BTEX constituents and NMWQCC standards have been met. The quarterly sampling has confirmed no rebound of BTEX constituents has occurred, therefore, XTO requests closure of this site.

RECOMMENDATIONS

- XTO requests closure of this site.
- Following OCD approval for closure, all monitoring well locations will be abandoned in accordance with the monitoring well abandonment plan.

TABLE 1

XTO ENERGY INC. GROUNDWATER LAB RESULTS

MASDEN GC #1E- BLOW PIT
UNIT D, SEC. 28, T29N, R11W

					BTEX EPA Method 801 (PPB)			
Sample Date	Monitor Well No.	DTW (ft)	TD (ft)	Product (ft)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)
4-Nov-99	MW #1	7.71	10		ND	ND	ND	ND
29-Aug-06		7.93	10		ND	ND	ND	ND
27-Nov-06		6.89	10.08		ND	ND	ND	ND
19-Feb-07		6.67	10		ND	ND	ND	ND
16-May-07		6.87	10		ND	ND	ND	ND
4-Nov-99	MW #2	5.81	13		ND	ND	ND	ND
29-Aug-06		6.17	6.44		ND	ND	ND	ND
27-Nov-06		5.15	6.7		ND	ND	ND	ND
19-Feb-07		4.63	6.44		ND	ND	ND	ND
16-May-07		5.01	6.44		ND	ND	ND	ND
4-Nov-99	MW #3	4.95	12		ND	ND	ND	ND
29-Aug-06			5.23		MW silted in/dry			
27-Nov-06		2.5	5.16		ND	ND	ND	ND
19-Feb-07		4.21	5.15		ND	ND	ND	ND
16-May-07		4.16	5.15		ND	ND	ND	ND
NMWQCC GROUNDWATER STANDARDS					10	750	750	620

TABLE 2

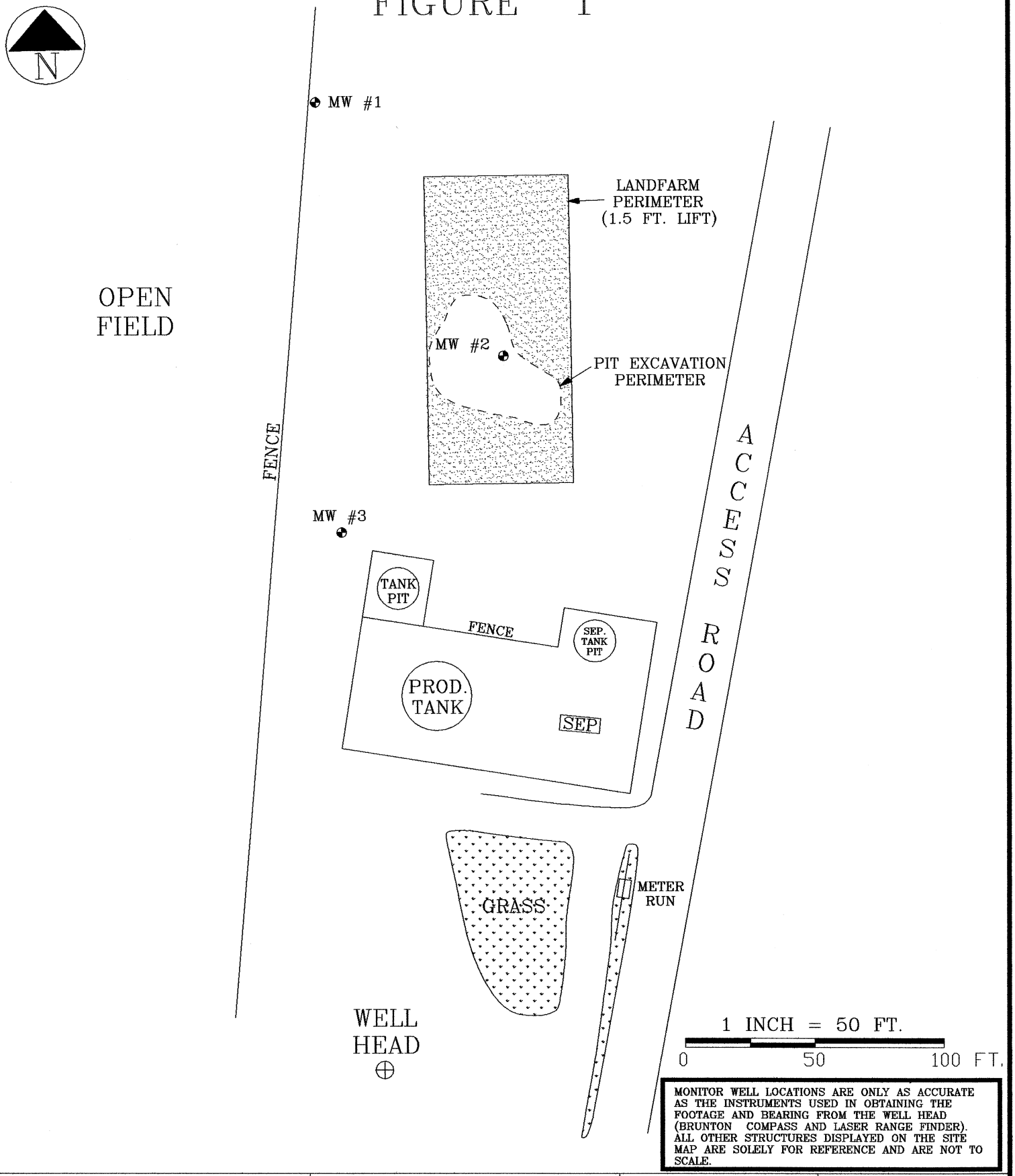
XTO ENERGY INC. GROUNDWATER LAB RESULTS

MASDEN GC #1E- BLOW PIT
UNIT D, SEC. 28, T29N, R11W

Sample Date: November 4, 1999

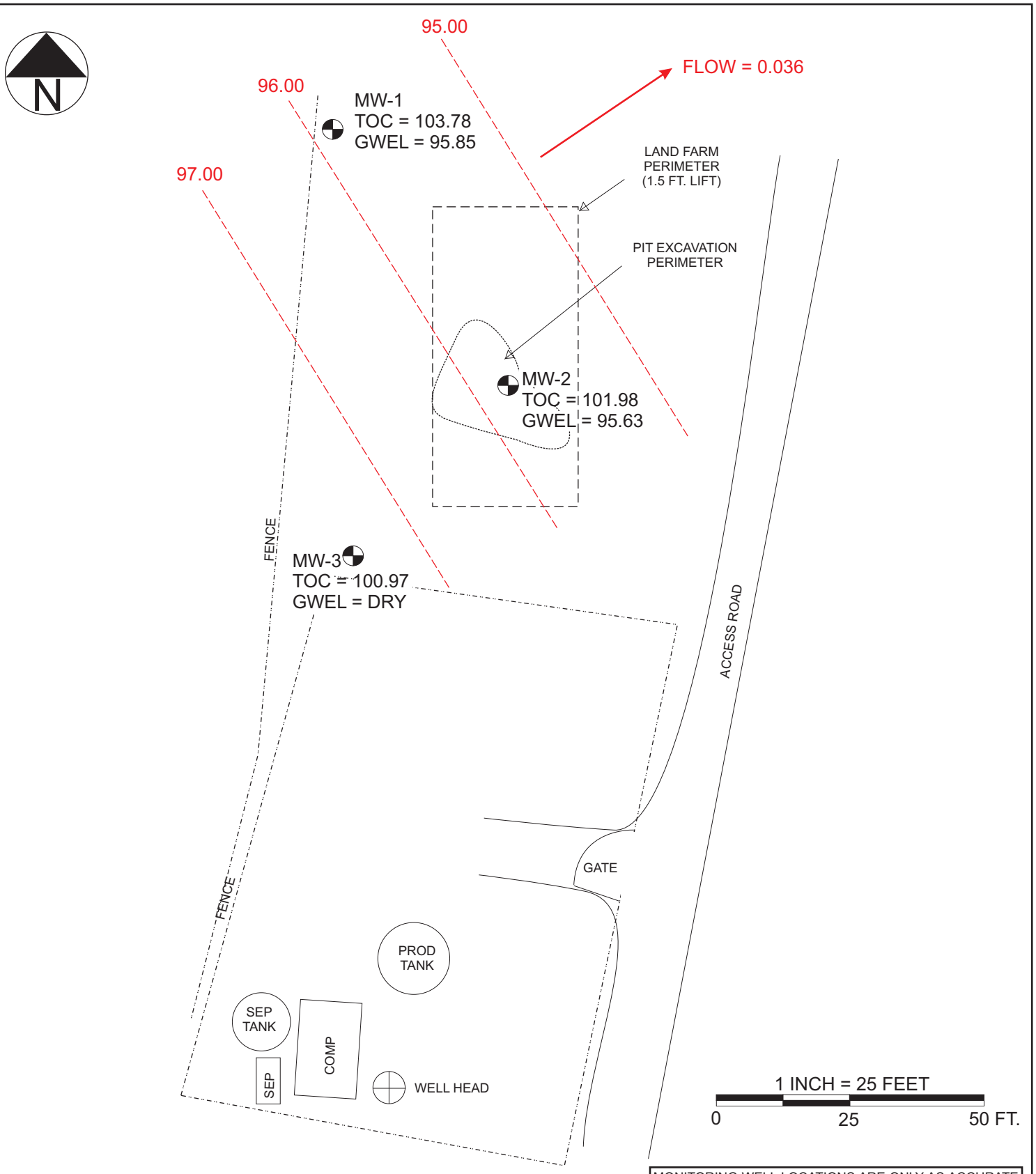
PARAMETERS	MW #1	MW #2	MW #3	UNITS
LAB Ph	7.47	7.5	7.23	s.u.
LAB CONDUCTIVITY @ 25 C	20,230	15,100	17,620	umhos/cm
TOTAL DISSOLVED SOLIDS @ 180 C	10,150	7,540	8,800	mg/L
TOTAL DISSOLVED SOLIDS (Calc)	10,097	7,481	8,739	mg/L
SODIUM ABSORPTION RATIO	38.9	31.9	37.6	ratio
TOTAL ALKALINITY AS CaCO3	516	518	580	mg/L
TOTAL HARDNESS AS CaCO3	1,020	821	827	mg/L
BICARBONATE AS HCO3	516	518	580	mg/L
CARBONATE AS CO3	< 1	< 1	< 1	mg/L
HYDROXIDE AS OH	< 1	< 1	< 1	mg/L
NITRATE NITORGEN	0.6	< 0.1	< 0.1	mg/L
NITRITE NITROGEN	0.007	0.003	0.003	mg/L
CHLORIDE	1.3	1.3	1.7	mg/L
FLUORIDE	9.1	2.13	1.95	mg/L
PHOSPHATE	0.3	0.1	0.3	mg/L
SULFATE	6,580	4,800	5,600	mg/L
IRON	< 0.001	< 0.001	0.212	mg/L
CALCIUM	96.8	79.8	80.4	mg/L
MAGNESIUM	189	151	152	mg/L
POTASSIUM	52.1	34.2	68.7	mg/L
SODIUM	2,855	2,098	2,482	mg/L
CATION/ANION DIFFERENCE	0.05	0.03	0.01	%

FIGURE 1



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND ARE NOT TO SCALE.

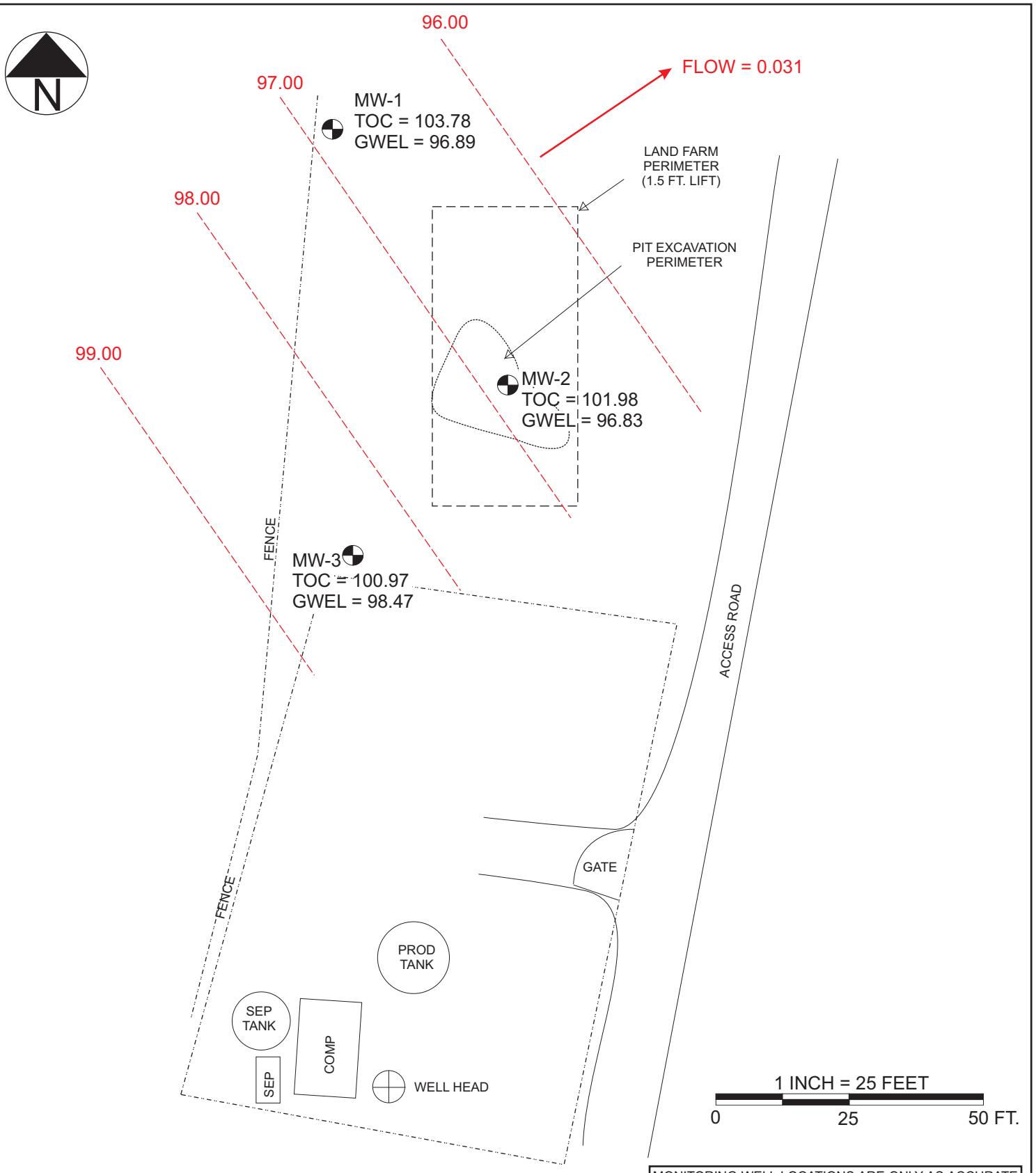
XTO ENERGY INC. MASDEN GC # 1E NW/4 NW/4 SEC. 28, T29N, R11W SAN JUAN COUNTY, NEW MEXICO	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	PROJECT: MW INSTALL. DRAWN BY: NJV FILENAME: MA-1E-SM.SKD	SITE MAP 10/99



TOC = TOP OF CASING ELEVATION
GWEL = GROUNDWATER ELEVATION
- - - = INFERRED GROUNDWATER CONTOUR LINE

MONITORING WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	MASDEN GC #1E NW/4 NW/4 SEC. 28, T29N, R11W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 12/01/06	FIGURE 2 GROUNDWATER GRADIENT MAP 08/29/2006



TOC = TOP OF CASING ELEVATION
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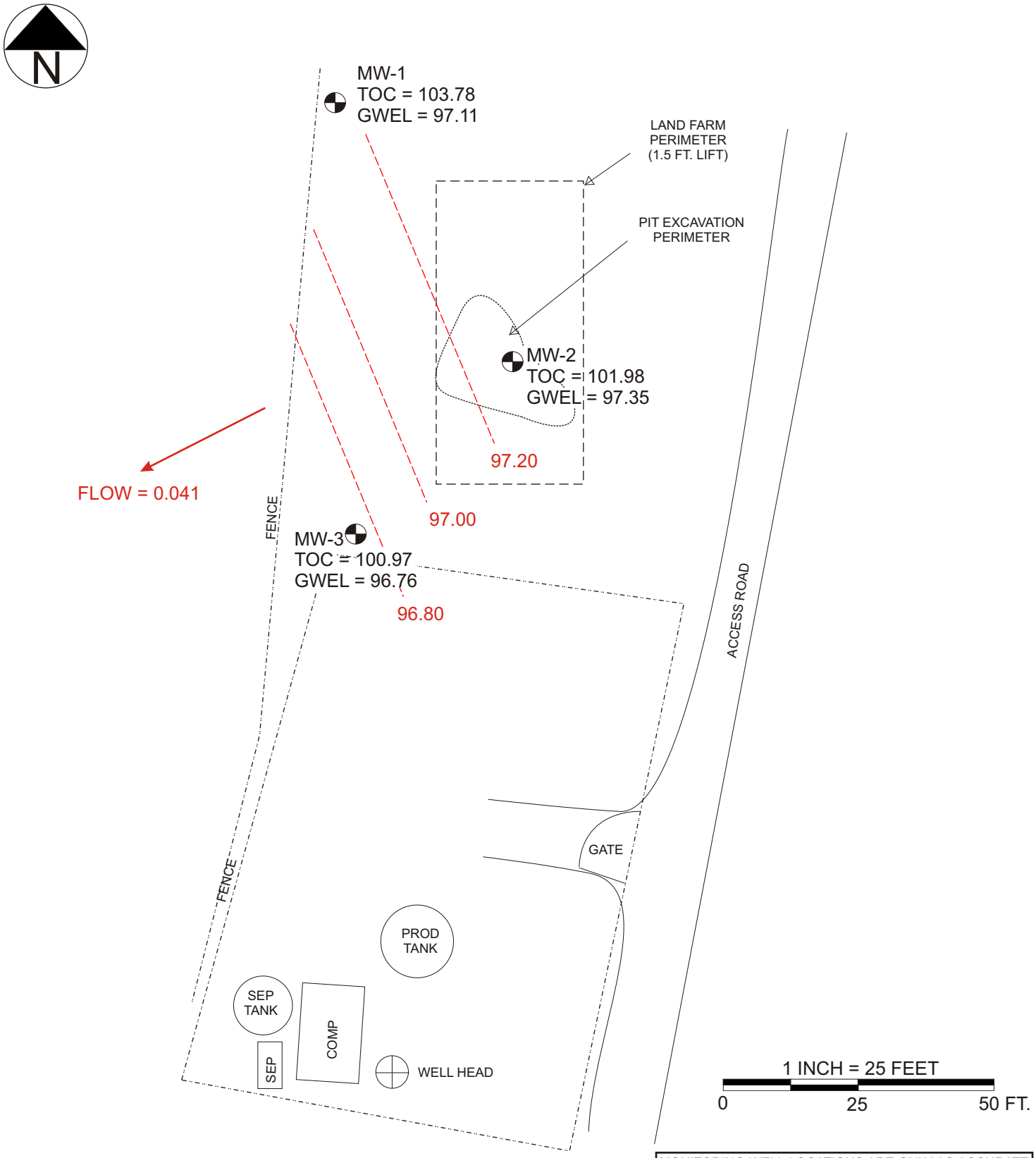
Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	MASDEN GC #1E NW/4 NW/4 SEC. 28, T29N, R11W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 12/01/06	FIGURE 3 GROUNDWATER GRADIENT MAP 11/27/2006



TOC = TOP OF CASING ELEVATION
GWEL = GROUNDWATER ELEVATION
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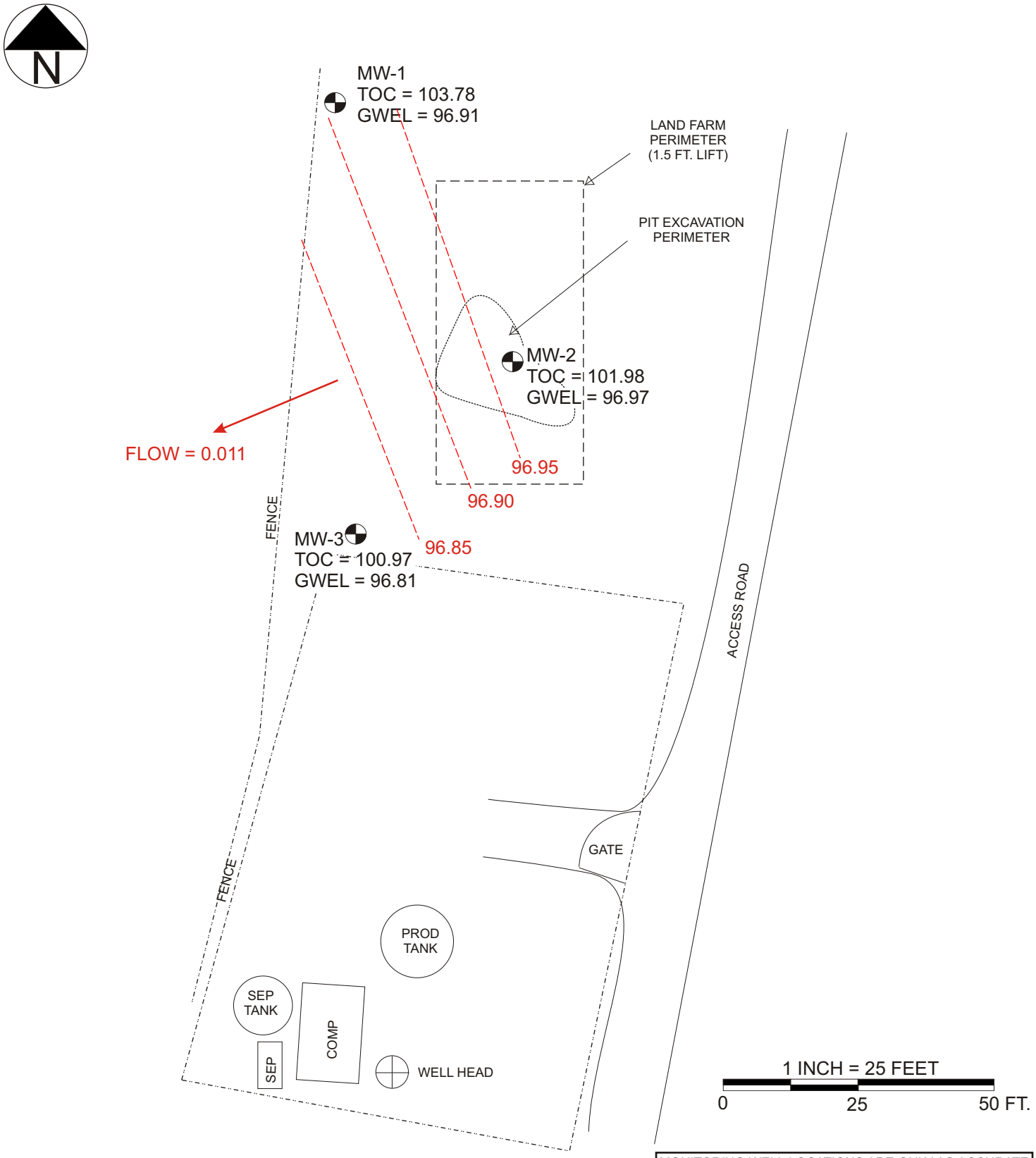
Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	MASDEN GC #1E NW/4 NW/4 SEC. 28, T29N, R11W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 02/20/07	GROUNDWATER GRADIENT MAP FIGURE 4 02/19/2007



TOC = TOP OF CASING ELEVATION
GWEL = GROUNDWATER ELEVATION
– – – = INFERRED GROUNDWATER CONTOUR LINE

MONITORING WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	MASDEN GC #1E NW/4 NW/4 SEC. 28, T29N, R11W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 05/21/07	GROUNDWATER GRADIENT MAP FIGURE 5 05/16/2007

FIGURE 6

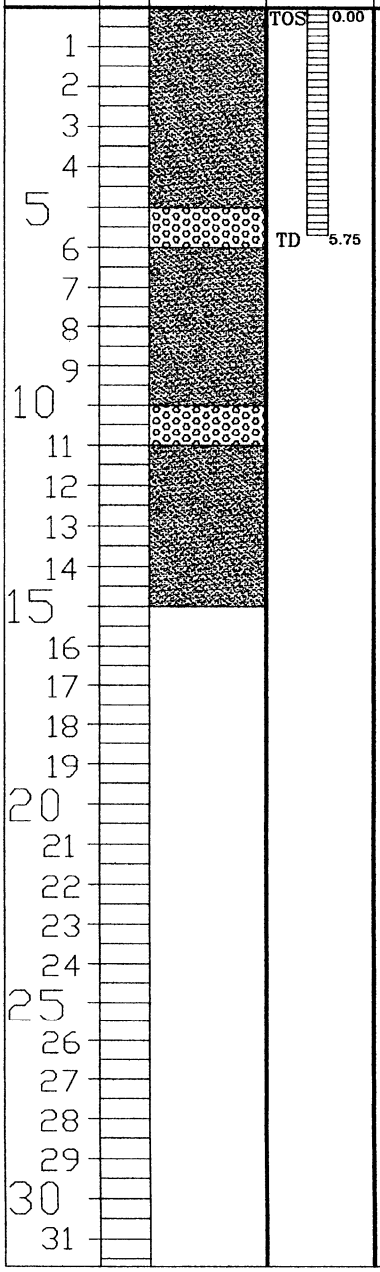
BLAGG ENGINEERING, Inc.

P.O. BOX 87
BLOOMFIELD, NM. 87413
(505) 632-1199

BORE / TEST HOLE REPORT

BORING #..... BH - 1
MW #..... 1
PAGE #..... 1
DATE STARTED 9/24/99
DATE FINISHED 9/24/99
OPERATOR..... REP
PREPARED BY NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: MASDEN GC #1E
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 378 FT., N4W FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 4.25 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST TO SATURATED, FIRM, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.00 - 5.00 FT. INTERVAL).

▼ GW DEPTH ON 11/4/99 = 3.46 FT. (APPROX.) FROM GROUND SURFACE.

SAME AS ABOVE EXCEPT WITH GRAVEL, SATURATED, (5.00 - 6.00 FT. INTERVAL).

SAME AS ABOVE EXCEPT WITHOUT GRAVEL, (6.00 - 10.00 FT. INTERVAL).

SAME AS ABOVE EXCEPT WITH GRAVEL, SATURATED, (10.00 - 11.00 FT. INTERVAL).

SAME AS ABOVE EXCEPT WITHOUT GRAVEL, (11.00 - 15.00 FT. INTERVAL).

NOTE: ▨ - SAND.

▨ - SAND AND GRAVEL.

TOS - TOP OF SCREEN FROM GROUND SURFACE.
TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
GW - GROUND WATER.

BORING ANNULAR COLLAPSED BELOW 5.75 FT. BELOW GRADE.

DRAWING: BH-1.SKD	DATE: 1/17/00	DWN BY: NJV

FIGURE 7

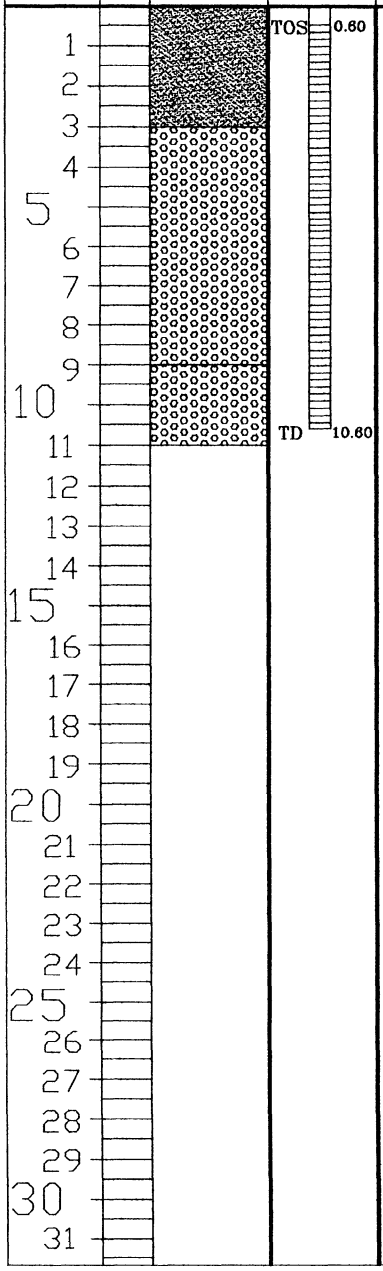
BLAGG ENGINEERING, Inc.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

BORE / TEST HOLE REPORT

BORING #..... BH - 2
MW #..... 2
PAGE #..... 2
DATE STARTED 10/14/99
DATE FINISHED 10/14/99
OPERATOR..... DE
PREPARED BY NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: MASDEN GC #1E
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (ENVIROTECH CME 61)
BORING LOCATION: 282 FT., N9.5E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 2.40 FT. ABOVE GROUND SURFACE.

MODERATE YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.00 - 3.00 FT. INTERVAL).

▼ GW DEPTH ON 11/4/99 = 3.41 FT. (APPROX.) FROM GROUND SURFACE.

DARK GRAY SAND AND GRAVEL, NON COHESIVE, SLIGHTLY MOIST TO SATURATED, FIRM TO LOOSE, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY (3.00 - 9.00 FT. INTERVAL).

OLIVE GRAY SAND AND GRAVEL, NON COHESIVE, SATURATED, FIRM TO LOOSE, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY (9.00 - 11.00 FT. INTERVAL).

NOTE:
- SAND.
- SAND AND GRAVEL.
- TOS - TOP OF SCREEN FROM GROUND SURFACE.
- TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW - GROUND WATER.

DRAWING: BH-2.SKD | DATE: 1/17/00 | DWN BY: NJV

FIGURE 8

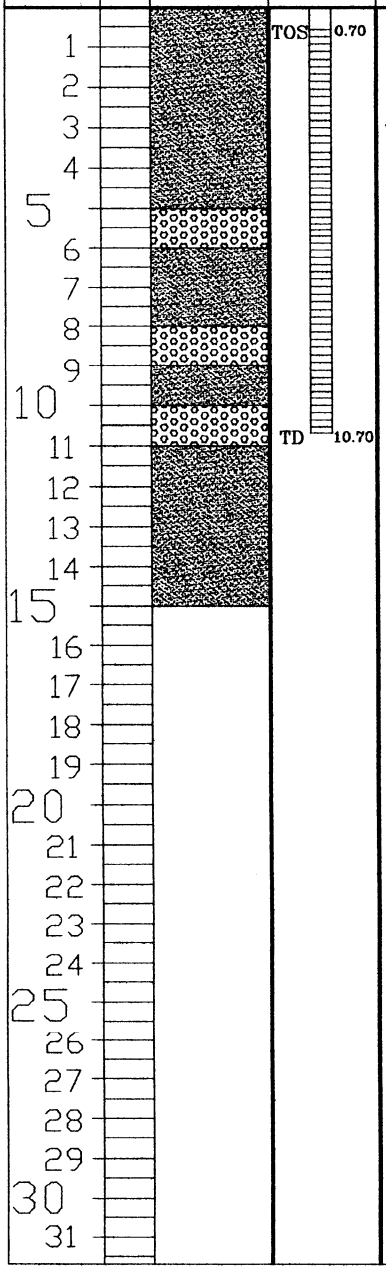
BLAGG ENGINEERING, Inc.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

BORE / TEST HOLE REPORT

BORING # BH - 3
MW # 3
PAGE # 3
DATE STARTED 9/24/99
DATE FINISHED 9/24/99
OPERATOR REP
PREPARED BY NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: MASDEN GC #1E
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 210 FT., N4.5W FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 1.30 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST TO SATURATED, FIRM, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.00 – 5.00 FT. INTERVAL).

▼ GW DEPTH ON 11/4/99 = 3.65 FT. (APPROX.) FROM GROUND SURFACE.

SAME AS ABOVE EXCEPT WITH GRAVEL, SATURATED, (5.00 – 6.00 FT. INTERVAL).

SAME AS ABOVE EXCEPT WITHOUT GRAVEL, (6.00 – 8.00 FT. INTERVAL).

SAME AS ABOVE EXCEPT WITH GRAVEL, SATURATED, (8.00 – 9.00 FT. INTERVAL).

SAME AS ABOVE EXCEPT WITHOUT GRAVEL, (9.00 – 10.00 FT. INTERVAL).

SAME AS ABOVE EXCEPT WITH GRAVEL, SATURATED, (10.00 – 11.00 FT. INTERVAL).

SAME AS ABOVE EXCEPT WITHOUT GRAVEL, (11.00 – 15.00 FT. INTERVAL).

NOTE: – SAND.

– SAND AND GRAVEL.

TOS – TOP OF SCREEN FROM GROUND SURFACE.
TD – TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
GW – GROUND WATER.

DRAWING: BH-3.SKD | DATE: 1/17/00 | DWN BY: NJV

Hall Environmental Analysis Laboratory, Inc.

Date: *06-Sep-06*

CLIENT: XTO Energy
Project: XTO Groundwater
Lab Order: 0609023

Lab ID: 0609023-01
Collection Date: 8/29/2006 4:03:00 PM
Client Sample ID: Masden Gas Com 1E MW-~~3~~ 1
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	9/5/2006 11:01:53 AM
Toluene	ND	1.0		µg/L	1	9/5/2006 11:01:53 AM
Ethylbenzene	ND	1.0		µg/L	1	9/5/2006 11:01:53 AM
Xylenes, Total	ND	3.0		µg/L	1	9/5/2006 11:01:53 AM
Surr: 4-Bromofluorobenzene	98.8	72.2-125		%REC	1	9/5/2006 11:01:53 AM

Lab ID: 0609023-02
Collection Date: 8/29/2006 4:15:00 PM
Client Sample ID: Masden Gas Com 1E MW-2
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	9/5/2006 11:30:49 AM
Toluene	ND	1.0		µg/L	1	9/5/2006 11:30:49 AM
Ethylbenzene	ND	1.0		µg/L	1	9/5/2006 11:30:49 AM
Xylenes, Total	ND	3.0		µg/L	1	9/5/2006 11:30:49 AM
Surr: 4-Bromofluorobenzene	94.2	72.2-125		%REC	1	9/5/2006 11:30:49 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: XTO Groundwater
Work Order: 0609023

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 5ML REAGENT BLA		*MBLK*			Batch ID: R20558		Analysis Date:	9/5/2006 9:05:41 AM	
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	3.0						
Sample ID: 100NG BTEX CCV		*LCS*			Batch ID: R20558		Analysis Date:	9/5/2006 9:34:46 AM	
Benzene	18.47	µg/L	1.0	92.4	85	115			
Toluene	18.11	µg/L	1.0	90.6	85	118			
Ethylbenzene	18.79	µg/L	1.0	94.0	85	116			
Xylenes, Total	53.77	µg/L	3.0	88.1	85	119			

Qualifiers:

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *05-Dec-06*

CLIENT: XTO Energy
Project: Ground Water

Lab Order: 0611364

Lab ID: 0611364-01 **Collection Date:** 11/27/2006 3:02:00 PM
Client Sample ID: Masden Gas Com 1E MW-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	11/30/2006 2:57:08 PM
Toluene	ND	1.0		µg/L	1	11/30/2006 2:57:08 PM
Ethylbenzene	ND	1.0		µg/L	1	11/30/2006 2:57:08 PM
Xylenes, Total	ND	3.0		µg/L	1	11/30/2006 2:57:08 PM
Surr: 4-Bromofluorobenzene	80.9	70.2-105		%REC	1	11/30/2006 2:57:08 PM

Lab ID: 0611364-02 **Collection Date:** 11/27/2006 2:30:00 PM
Client Sample ID: Masden Gas Com 1E MW-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	11/30/2006 3:27:13 PM
Toluene	ND	1.0		µg/L	1	11/30/2006 3:27:13 PM
Ethylbenzene	ND	1.0		µg/L	1	11/30/2006 3:27:13 PM
Xylenes, Total	ND	3.0		µg/L	1	11/30/2006 3:27:13 PM
Surr: 4-Bromofluorobenzene	81.5	70.2-105		%REC	1	11/30/2006 3:27:13 PM

Lab ID: 0611364-03 **Collection Date:** 11/27/2006 2:26:00 PM
Client Sample ID: Masden Gas Com 1E MW-1 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	11/30/2006 3:57:16 PM
Toluene	ND	1.0		µg/L	1	11/30/2006 3:57:16 PM
Ethylbenzene	ND	1.0		µg/L	1	11/30/2006 3:57:16 PM
Xylenes, Total	ND	3.0		µg/L	1	11/30/2006 3:57:16 PM
Surr: 4-Bromofluorobenzene	80.7	70.2-105		%REC	1	11/30/2006 3:57:16 PM

Qualifiers:
- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: Ground Water **Work Order:** 0611364

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 5ML RB		*MBLK*			Batch ID: R21633		Analysis Date: 11/30/2006 8:50:27 AM		
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	3.0						
Sample ID: 125NG BTEX CCV-B		*LCS*			Batch ID: R21633		Analysis Date: 12/1/2006 8:28:43 AM		
Benzene	24.67	µg/L	1.0	98.7	85.9	113			
Toluene	24.24	µg/L	1.0	97.0	86.4	113			
Ethylbenzene	23.65	µg/L	1.0	94.6	83.5	118			
Xylenes, Total	71.15	µg/L	3.0	94.9	83.4	122			

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *26-Feb-07*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0702229

Lab ID: 0702229-13
Collection Date: 2/19/2007 2:12:00 PM
Client Sample ID: Masden GC IE MW-3
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	2/22/2007 6:56:28 PM
Benzene	ND	1.0		µg/L	1	2/22/2007 6:56:28 PM
Toluene	ND	1.0		µg/L	1	2/22/2007 6:56:28 PM
Ethylbenzene	ND	1.0		µg/L	1	2/22/2007 6:56:28 PM
Xylenes, Total	ND	2.0		µg/L	1	2/22/2007 6:56:28 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 6:56:28 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 6:56:28 PM
Surr: 4-Bromofluorobenzene	86.5	70.2-105		%REC	1	2/22/2007 6:56:28 PM

Lab ID: 0702229-14
Collection Date: 2/19/2007 2:33:00 PM
Client Sample ID: Masden GC IE MW-2
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	2/22/2007 7:26:36 PM
Benzene	ND	1.0		µg/L	1	2/22/2007 7:26:36 PM
Toluene	ND	1.0		µg/L	1	2/22/2007 7:26:36 PM
Ethylbenzene	ND	1.0		µg/L	1	2/22/2007 7:26:36 PM
Xylenes, Total	ND	2.0		µg/L	1	2/22/2007 7:26:36 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 7:26:36 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 7:26:36 PM
Surr: 4-Bromofluorobenzene	87.0	70.2-105		%REC	1	2/22/2007 7:26:36 PM

Lab ID: 0702229-15
Collection Date: 2/19/2007 2:55:00 PM
Client Sample ID: Masden GC IE MW-1
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	2/22/2007 7:56:40 PM
Benzene	ND	1.0		µg/L	1	2/22/2007 7:56:40 PM
Toluene	ND	1.0		µg/L	1	2/22/2007 7:56:40 PM
Ethylbenzene	ND	1.0		µg/L	1	2/22/2007 7:56:40 PM
Xylenes, Total	ND	2.0		µg/L	1	2/22/2007 7:56:40 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 7:56:40 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 7:56:40 PM
Surr: 4-Bromofluorobenzene	87.2	70.2-105		%REC	1	2/22/2007 7:56:40 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: Ground Water **Work Order:** 0702229

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 0702229-10A MSD		*MSD*			Batch ID: **R22570**		Analysis Date:	2/22/2007 3:25:51 PM	
Methyl tert-butyl ether (MTBE)	19.30	µg/L	2.5	96.5	51.2	138	0.897	28	
Benzene	19.64	µg/L	1.0	98.2	85.9	113	2.69	27	
Toluene	19.77	µg/L	1.0	98.8	86.4	113	1.36	19	
Ethylbenzene	19.78	µg/L	1.0	98.9	83.5	118	2.27	10	
Xylenes, Total	59.88	µg/L	2.0	99.8	83.4	122	2.13	13	
1,2,4-Trimethylbenzene	19.41	µg/L	1.0	97.1	83.5	115	2.48	21	
1,3,5-Trimethylbenzene	19.43	µg/L	1.0	97.2	85.2	113	2.27	10	
Sample ID: 5ML REAGENT BLA		*MBLK*			Batch ID: **R22570**		Analysis Date:	2/22/2007 8:13:34 AM	
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
Sample ID: 5ML REAGENT BLA		*MBLK*			Batch ID: **R22594**		Analysis Date:	2/23/2007 8:08:20 AM	
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID: **R22570**		Analysis Date:	2/22/2007 3:55:54 PM	
Methyl tert-butyl ether (MTBE)	19.74	µg/L	2.5	98.7	51.2	138			
Benzene	20.24	µg/L	1.0	101	85.9	113			
Toluene	20.28	µg/L	1.0	101	86.4	113			
Ethylbenzene	20.44	µg/L	1.0	102	83.5	118			
Xylenes, Total	61.89	µg/L	2.0	103	83.4	122			
1,2,4-Trimethylbenzene	20.52	µg/L	1.0	103	83.5	115			
1,3,5-Trimethylbenzene	20.33	µg/L	1.0	102	85.2	113			
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID: **R22594**		Analysis Date:	2/23/2007 8:14:12 PM	
Methyl tert-butyl ether (MTBE)	17.63	µg/L	2.5	88.2	51.2	138			
Benzene	20.52	µg/L	1.0	103	85.9	113			
Toluene	20.30	µg/L	1.0	102	86.4	113			
Ethylbenzene	20.25	µg/L	1.0	101	83.5	118			
Xylenes, Total	61.56	µg/L	2.0	103	83.4	122			
1,2,4-Trimethylbenzene	20.17	µg/L	1.0	101	83.5	115			
1,3,5-Trimethylbenzene	20.03	µg/L	1.0	100	85.2	113			
Sample ID: 0702229-10A MS		*MS*			Batch ID: **R22570**		Analysis Date:	2/22/2007 2:55:46 PM	
Methyl tert-butyl ether (MTBE)	19.48	µg/L	2.5	97.4	51.2	138			
Benzene	20.17	µg/L	1.0	101	85.9	113			
Toluene	20.04	µg/L	1.0	100	86.4	113			

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: Ground Water **Work Order:** 0702229

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 0702229-10A MS		*MS*			Batch ID: **R22570**		Analysis Date:	2/22/2007 2:55:46 PM	
Ethylbenzene	20.24	µg/L	1.0	101	83.5	118			
Xylenes, Total	61.17	µg/L	2.0	102	83.4	122			
1,2,4-Trimethylbenzene	19.90	µg/L	1.0	99.5	83.5	115			
1,3,5-Trimethylbenzene	19.88	µg/L	1.0	99.4	85.2	113			

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *29-May-07*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0705289

Lab ID: 0705289-13 **Collection Date:** 5/16/2007 10:42:00 AM
Client Sample ID: ~~McCoy GCD #1E MW-1~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	30	10		µg/L	10	5/24/2007 7:07:56 PM
Toluene	760	10		µg/L	10	5/24/2007 7:07:56 PM
Ethylbenzene	1700	100		µg/L	100	5/24/2007 6:35:15 PM
Xylenes, Total	24000	200		µg/L	100	5/24/2007 6:35:15 PM
Surr: 4-Bromofluorobenzene	91.2	70.2-105		%REC	10	5/24/2007 7:07:56 PM

Lab ID: 0705289-14 **Collection Date:** 5/16/2007 2:20:00 PM
Client Sample ID: Masden GC #1E MW-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	5/25/2007 11:03:08 AM
Toluene	ND	1.0		µg/L	1	5/25/2007 11:03:08 AM
Ethylbenzene	ND	1.0		µg/L	1	5/25/2007 11:03:08 AM
Xylenes, Total	ND	2.0		µg/L	1	5/25/2007 11:03:08 AM
Surr: 4-Bromofluorobenzene	86.0	70.2-105		%REC	1	5/25/2007 11:03:08 AM

Lab ID: 0705289-15 **Collection Date:** 5/16/2007 2:44:00 PM
Client Sample ID: Masden GC #1E MW-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	5/24/2007 10:38:08 PM
Toluene	ND	1.0		µg/L	1	5/24/2007 10:38:08 PM
Ethylbenzene	ND	1.0		µg/L	1	5/24/2007 10:38:08 PM
Xylenes, Total	ND	2.0		µg/L	1	5/24/2007 10:38:08 PM
Surr: 4-Bromofluorobenzene	85.9	70.2-105		%REC	1	5/24/2007 10:38:08 PM

Qualifiers:
- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *29-May-07*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0705289

Lab ID: 0705289-16 **Collection Date:** 5/16/2007 3:10:00 PM
Client Sample ID: Masden GC #1E MW-1 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	5/24/2007 11:08:06 PM
Toluene	ND	1.0		µg/L	1	5/24/2007 11:08:06 PM
Ethylbenzene	ND	1.0		µg/L	1	5/24/2007 11:08:06 PM
Xylenes, Total	ND	2.0		µg/L	1	5/24/2007 11:08:06 PM
Surr: 4-Bromofluorobenzene	84.9	70.2-105		%REC	1	5/24/2007 11:08:06 PM

Lab ID: 0705289-17 **Collection Date:**
Client Sample ID: Trip Blank **Matrix:** TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	5/24/2007 11:38:12 PM
Toluene	ND	1.0		µg/L	1	5/24/2007 11:38:12 PM
Ethylbenzene	ND	1.0		µg/L	1	5/24/2007 11:38:12 PM
Xylenes, Total	ND	2.0		µg/L	1	5/24/2007 11:38:12 PM
Surr: 4-Bromofluorobenzene	86.7	70.2-105		%REC	1	5/24/2007 11:38:12 PM

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: Ground Water **Work Order:** 0705289

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 0705289-02A MSD		*MSD*			Batch ID: **R23705**		Analysis Date:	5/23/2007 9:34:21 PM	
Benzene	19.06	µg/L	1.0	95.3	85.9	113	0.794	27	
Toluene	19.13	µg/L	1.0	95.7	86.4	113	0.812	19	
Ethylbenzene	19.00	µg/L	1.0	95.0	83.5	118	0.462	10	
Xylenes, Total	56.16	µg/L	2.0	93.6	83.4	122	0.901	13	
Sample ID: 0705289-16A MSD		*MSD*			Batch ID: **R23752**		Analysis Date:	5/25/2007 10:32:54 AM	
Benzene	20.43	µg/L	1.0	102	85.9	113	1.85	27	
Toluene	20.97	µg/L	1.0	105	86.4	113	1.52	19	
Ethylbenzene	20.81	µg/L	1.0	104	83.5	118	2.27	10	
Xylenes, Total	61.35	µg/L	2.0	102	83.4	122	1.79	13	
Sample ID: 5ML RB-II		*MBLK*			Batch ID: **R23705**		Analysis Date:	5/23/2007 10:03:56 AM	
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 5ML REAGENT BLA		*MBLK*			Batch ID: **R23736**		Analysis Date:	5/24/2007 8:33:09 AM	
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 5ML REAGENT BLA		*MBLK*			Batch ID: **R23752**		Analysis Date:	5/25/2007 8:32:19 AM	
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID: **R23705**		Analysis Date:	5/23/2007 11:04:02 AM	
Benzene	18.93	µg/L	1.0	94.6	85.9	113			
Toluene	19.74	µg/L	1.0	98.7	86.4	113			
Ethylbenzene	19.87	µg/L	1.0	99.3	83.5	118			
Xylenes, Total	60.16	µg/L	2.0	100	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID: **R23736**		Analysis Date:	5/24/2007 9:38:17 PM	
Benzene	19.56	µg/L	1.0	97.8	85.9	113			
Toluene	19.93	µg/L	1.0	99.7	86.4	113			
Ethylbenzene	19.97	µg/L	1.0	99.9	83.5	118			
Xylenes, Total	59.82	µg/L	2.0	99.7	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID: **R23752**		Analysis Date:	5/25/2007 2:03:57 PM	
Benzene	19.64	µg/L	1.0	98.2	85.9	113			
Toluene	20.09	µg/L	1.0	100	86.4	113			
Ethylbenzene	19.98	µg/L	1.0	99.9	83.5	118			
Xylenes, Total	59.73	µg/L	2.0	99.5	83.4	122			
Sample ID: 0705289-02A MS		*MS*			Batch ID: **R23705**		Analysis Date:	5/23/2007 9:04:25 PM	
Benzene	19.21	µg/L	1.0	96.0	85.9	113			
Toluene	19.29	µg/L	1.0	96.4	86.4	113			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: Ground Water **Work Order:** 0705289

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 0705289-02A MS		*MS*			Batch ID: **R23705**		Analysis Date:	5/23/2007 9:04:25 PM	
Ethylbenzene	19.09	µg/L	1.0	95.4	83.5	118			
Xylenes, Total	56.66	µg/L	2.0	94.4	83.4	122			
Sample ID: 0705289-16A MS		*MS*			Batch ID: **R23752**		Analysis Date:	5/25/2007 10:02:41 AM	
Benzene	20.05	µg/L	1.0	100	85.9	113			
Toluene	20.66	µg/L	1.0	103	86.4	113			
Ethylbenzene	20.34	µg/L	1.0	102	83.5	118			
Xylenes, Total	60.26	µg/L	2.0	99.8	83.4	122			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

121701

JJ

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

94127

FIELD REPORT: SITE ASSESSMENT

1221

JOB No: 92140
PAGE No: 1 of ____

PROJECT: PIT ASSESSMENTS & CLOSURE
CLIENT: AMOCO PRODUCTION COMPANY
CONTRACTOR: ENVIROTECH, INC.
EQUIPMENT USED: Backhoe w/ 24"

DATE STARTED: 5/11/92
DATE FINISHED: 5/11/92
ENVIRO. SPCLT: RB
OPERATOR: DB
ASSISTANT: LT

LOCATION: LSE: Masden Gas WELL: 1E QD: NW/1/4 NW/4
SEC: 28 TWP: T29N RNG: R11W PM: NMPM CNTY: SJ ST: NM PIT: BLOW PIT
LAND USE: Rangeland w/ excess alkalinity soils
SURFACE CONDITIONS: Unlined earthen pit (60'x60') with water in pit.

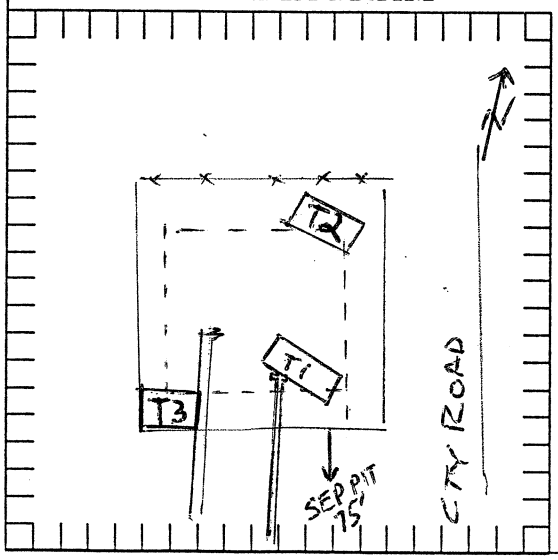
FIELD NOTES & REMARKS: T1 dug inside Blow pit area where groundwater was encountered 4'5' @ same depth as standing water in center of blow pit. T2 & T3 shows no contamination. All contamination is limited to immediate pit area.

SAMPLE INVENTORY:

SMPL ID:	SMPL TYPE:	LABORATORY ANALYSIS:
T1@5'	SOIL	HEAD
T1@GW	WATER	TPH
T2@GW	WATER	BTEX
T2@5'	SOIL	TPH

SCALE
0 20 40 FEET

SITE DIAGRAM



TEST HOLE LOGS:

TH#: 1

SOIL TYPE:	SMPL TYPE:	OVM/TPH
SW		
	INTERIOR PIT AREA	
		537
	GW	850

TH#: 2

SOIL TYPE:	SMPL TYPE:	OVM/TPH
SW		
		8
		N/D
	GW	N/D

TH#: 3

SOIL TYPE:	SMPL TYPE:	OVM/TPH
		N/D
		2
	GW	N/D

TH#: ____

SOIL TYPE:	SMPL TYPE:	OVM/TPH

SOIL TYPE: C – Clay, M – Silt, S – Sand, G – Gravel Plasticity: L – None, H – Plastic Grading: P – Poorly, W – Well

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS
HEADSPACE EXTRACTION

Client:	AMOCO	Project #:	92140
Sample ID:	T1 @ 5'	Date Reported:	08-31-92
Laboratory Number:	0604	Date Sampled:	05-11-92
Sample Matrix:	Soil	Date Received:	05-11-92
Preservative:	NA	Date Analyzed:	07-09-92
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	77	1.6
Toluene	870	1.6
Ethylbenzene	ND	1.6
p,m-Xylene	940	12.0
o-Xylene	225	1.6

Method: Method 3810, Headspace, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Masden Gas Com 1E---Blow Pit---94127

Al Chabarley
Analyst

David D Young
Review

ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

TOTAL RECOVERABLE PETROLEUM HYDROCARBON

Client:	Amoco	Report Date:	5-14-92
Sample ID:	T1 @GW	Date Sampled:	5-11-92
Laboratory Number:	0607	Date Received:	5-11-92
Analysis Requested:	418.1	Date Extracted:	5-12-92
Sample Matrix:	Water	Date Analyzed:	5-12-92
Condition:	Received on Ice	Preservative:	HCl

Parameter	Concentration (mg/l)	Det. Limit (mg/l)
Total Recoverable Petroleum Hydrocarbons	206.0	10.0

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments: Masden Gas 1E - Blow Pit

Analyst

Review

ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:		Project #:	92140
Sample ID:	T-2 @ 5'	Date Reported:	06-13-92
Laboratory Number:	0606	Date Sampled:	05-11-92
Sample Matrix:	Soil	Date Received:	NA
Preservative:	Cool	Date Analyzed:	06-05-92
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	0.0	5.0

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments: Masden Gas 1-E Blow Pit 94127

Tony Tristano
Analyst

Review

ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	T2 @ GW	Date Reported:	08-21-92
Laboratory Number:	0605	Date Sampled:	05-11-92
Sample Matrix:	Water	Date Received:	05-11-92
Preservative:	HgCl & Cool	Date Analyzed:	06-25-92
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	20.0
Toluene	ND	130.0
Ethylbenzene	ND	30.0
p,m-Xylene	ND	70.0
o-Xylene	ND	40.0

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	99.8 %
Bromfluorobenzene	86.7 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Masden Gas 1E---Blow Pit---94127

Robert M Young
Analyst

Review

1 of 21

CHAIN OF CUSTODY RECORD 94127

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
AMOCO / 92140	BLOW PIT Magden GAS LE	
Sampler: (Signature)	Chain of Custody Tape No.	
Larry Benally	COM AC	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BETX HEAD	8020	TPH/418.1				Remarks
T1@5'	05/11/92	1550	0604	SOIL	1	✓						
T2@GW	5/11/92	1625	0605	WATER	2		✓					
T2@5'	5/11/92	1625	0606	SOIL	1			✓				
T1@GW	5/11/92	1555	0607	WATER	1			✓				
TRAVEL BLK	5/10/92		0608	WATER	1		✓					
TRAVEL BLK	5/10/92		0609	SOIL	1	✓						
EQUIPMENT BLK	5/11/92	1640	0610	WATER	1		✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Larry Benally	5/11/92	1750	Michael L. Ems	5-11-92	1750
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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Farmington, New Mexico 87401
(505) 632-0615

san juan repro Form 578-81

C4127

District I
P.O. Box 1980, Hobbs, NM
District II
P.O. Drawer DD, Artesia, NM 88211
District III
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

PIT REMEDIATION AND CLOSURE REPORT

Operator: Amoco Production Company **Telephone:** (505) - 326-9200

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: Well Name MASDEN GC #1E

Location: Unit or Qtr/Qtr Sec D Sec 28 T 29N R 11W County SAN JUAN

Pit Type: Separator ___ Dehydrator ___ Other BLOW

Land Type: BLM ___, State ___, Fee ___, Other FEE

Pit Location: (Attach diagram)
Pit dimensions: length 45, width 50, depth 7'
Reference: wellhead X, other ___
Footage from reference: 280'
Direction from reference: 8 Degrees X East North X of ___ West South ___

Depth To Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet (20 points) 50 feet to 99 feet (10 points) Greater than 100 feet (0 Points)	20
Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources)	Yes (20 points) No (0 points)	0
Distance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet (20 points) 200 feet to 1000 feet (10 points) Greater than 1000 feet (0 points)	10
	RANKING SCORE (TOTAL POINTS):	30

C4127 BLOW PIT

Date Remediation Started: _____ **Date Completed:** 12/6/93

emediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 350

Landfarmed X Insitu Bioremediation ___

Other _____

Remediation Location: (ie. landfarmed onsite, name and location of offsite facility) Onsite X Offsite _____

General Description Of Remedial Action: Excavation. GROUNDWATER IMPACT.

Ground Water Encountered: No ___ Yes X Depth 5'

Final Pit: Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)

Sample location see Attached Documents MULTIPLE SAMPLES

Sample depth _____

Sample date _____ Sample time _____

Sample Results

Benzene(ppm) _____

Total BTEX(ppm) _____

Field headspace(ppm) _____

TPH _____

Ground Water Sample: Yes X No ___ (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE 2/14/00 NV

SIGNATURE BD Shaw

PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

12/7/93 LAB RESULTS TO PAUL V. - WATER CLEAN AS OF 12/3 SAMPLE.

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

PIT NO: C4127
C.O.C. NO: 3191 / 3240

FIELD REPORT: CLOSURE VERIFICATION

JOB No: 92140
PAGE No: 1 of 1

LOCATION: LEASE: MASDEN GAS COM WELL # 1E QD: NW/4, NW/4,
SEC: 28 TWP: 29N RNG: 11W BM: NM CNTY: SJ ST. NM PIT: BLOW
CONTRACTOR: PAUL VELASQUEZ
EQUIPMENT USED: EXCAVATOR

DATE STARTED: 11-15-93
DATE FINISHED: 12-3-93

ENVIRONMENTAL SPECIALIST: REO

SOIL REMEDIATION: QUANTITY: ~~~500~~ 350 CUBIC YARDS,
DISPOSAL FACILITY: ~~STOCKPILED ON SITE~~ ON SITE LANDFARMED
LAND USE: FARMING
SURFACE CONDITIONS: EXCAVATED PRIOR TO ABANDONMENT

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 280 FEET NORTH FROM WELLHEAD.
PIT EXCAVATED - GROUNDWATER AT 5 FEET. WATER SAMPLE COLLECTED

12-3-93: COLLECT WATER SAMPLE AGAIN. - POND COVERED WITH ICE.

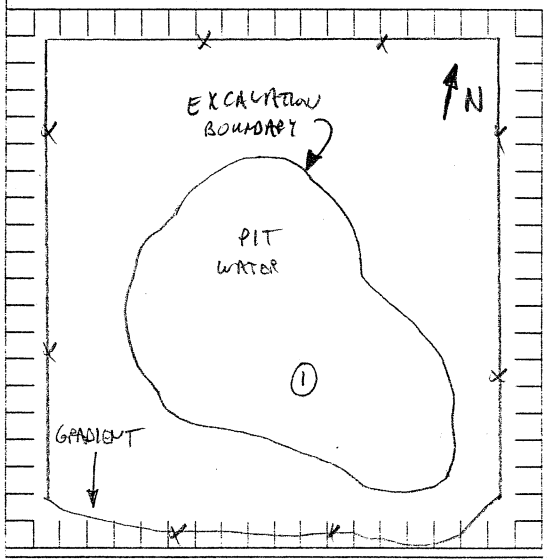
FIELD 418.1 CALCULATIONS

SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

DEPTH TO GROUNDWATER: 5' >100'
NEAREST WATER SOURCE: ~~Home 100 East~~ >1000'
NEAREST SURFACE WATER: <1000'
NMOCD RANKING SCORE >20
NMOCD TPH CLOSURE STD: 100 PPM TPH

SCALE
0 10 20 FEET

PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
11-15-93	
1 PIT @ 5'	BTEX
	WATER
12-3-93	LAB
PIT @ 5'	BTEX
	WATER
TEMP	6°C.
pH	7.8
COND.	9600

PIT PROFILE

TRAVEL NOTES: CALLOUT: 11-15-93 P.V. ONSITE: 11-15-93 1215 HRS
12-2-93 BY P.V. - ONSITE 12-3-93 0830

P 65

ENVIROTECH LABS

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	Pit @ 5'	Date Reported:	11-17-93
Laboratory Number:	6504	Date Sampled:	11-15-93
Sample Matrix:	Water	Date Received:	11-15-93
Preservative:	HgCl and Cool	Date Analyzed:	11-16-93
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	147	0.2
Toluene	760	0.3
Ethylbenzene	22.9	0.2
p,m-Xylene	421	0.2
o-Xylene	125	0.2

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	95 %
Bromofluorobenzene	100 %

Method: Method 5030A, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Masden Gas Com #1E C4127

Analyst

Review

ENVIROTECH LABS

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	Pit @ 5'	Date Reported:	12-06-93
Laboratory Number:	6611	Date Sampled:	12-03-93
Sample Matrix:	Water	Date Received:	12-03-93
Preservative:	HgCl & Cool	Date Analyzed:	12-06-93
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	1.4	0.2
Toluene	25.3	0.6
Ethylbenzene	0.9	0.3
p,m-Xylene	10.6	0.5
o-Xylene	3.6	0.3

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	99 %
Bromofluorobenzene	97 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Masden Gas Com #1E C4127

Analyst

Review

3191

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
Amoco # 92140	MASDEN GAS COM #1E	C4127

Sampler: (Signature)	Chain of Custody Tape No.
R. E. O'Neill	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX						Remarks
(1) PIT @ .5'	11-15-93	1235	6504	WATER	1	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
R. E. O'Neill	11-15-93	1305	Glenn L. Spencer	11-15-93	1305
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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3240

CHAIN OF CUSTODY RECORD

C4127

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
AMOCO # 92140	MASDEN GAS COM # 1E	
Sampler: (Signature) R. E. O'Neill	Chain of Custody Tape No. -	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX						Remarks
PIT @ 5'	12-3-93	0830	6611	WATER	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
R. E. O'Neill	12-3-93	1602	Denise L. Queen	12-3-93	1602
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.
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Farmington, New Mexico 87401
(505) 632-0615

CLIENT: CROSS TIMBERS

BLAGG ENGINEERING, INC.
P.O. BOX 87, BLOOMFIELD, NM 87413
(505) 632-1199

LOCATION NO: C4127
C.O.C. NO: 7686

FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: MASDEN GC WELL #: 1E PITS: BLOW
QUAD/UNIT: D SEC: 28 TWP: 29N RNG: 11W PM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: NW1/4 NW1/4 CONTRACTOR: P&S

DATE STARTED: 2/16/00
DATE FINISHED:
ENVIRONMENTAL SPECIALIST: NV/REP

SOIL REMEDIATION:

REMEDIATION SYSTEM: LANDFARM APPROX. CUBIC YARDAGE: 350
LAND USE: RANGE LIFT DEPTH (ft): 1.5

FIELD NOTES & REMARKS:

DEPTH TO GROUNDWATER: <50' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: <1000'
NMOCD RANKING SCORE: 30 NMOCD TPH CLOSURE STD: 100 PPM

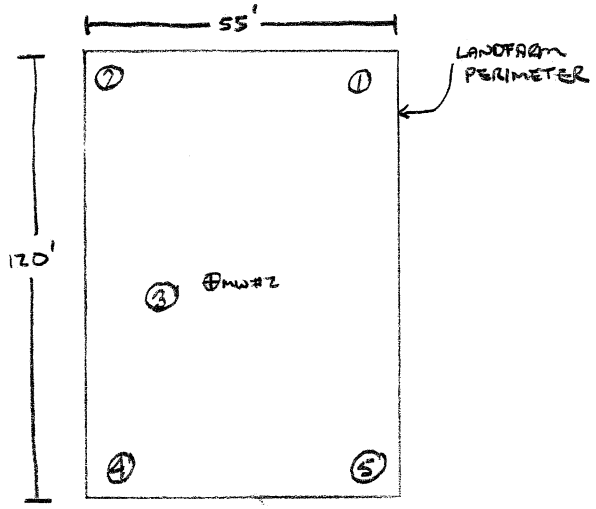
SAND AND GRAVEL. NO APPARENT STAINING OBSERVED, NO HC ODOR DETECTED. SAMPLING DEPTHS RANGE FROM 6" - 1'. COLLECTED A 5 PT. COMPOSITE SAMPLE FOR LAB ANALYSIS.

CLOSED

FIELD 418.1 CALCULATIONS

SAMP. TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

SKETCH/SAMPLE LOCATIONS N



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
LF-1	0.0

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME	RESULTS
LF-1	TPH (8015)	1110	ND

SCALE
0 FT

TRAVEL NOTES: CALLOUT: NA ONSITE: 2/16/00

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	LF - 1	Date Reported:	02-18-00
Laboratory Number:	G840	Date Sampled:	02-16-00
Chain of Custody No:	7686	Date Received:	02-16-00
Sample Matrix:	Soil	Date Extracted:	02-17-00
Preservative:	Cool	Date Analyzed:	02-17-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

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

ND - Parameter not detected at the stated detection limit.

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

Comments: **Masden GC 1E 5 Pt. Composite.**

Analyst

Review

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

CHAIN OF CUSTODY RECORD

7606

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG / CROSS TIMBERS	MASDEN GC 1E	
Sampler: REP	Client No. 403410	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (8015)						Remarks
LF-1	2-16-00	1110	G840	SOIL	1	✓						
												5PT. COMPOSITE
												SAMPLE PRESERVE:
												COOL

	Date	Time		Date	Time
Relinquished by: (Signature) Ed Hasbrouck	2-16-00	1130	Received by: (Signature) Dawn L. Ogburn	2.16.00	1130
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

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

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

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	02-17-TPH QA/QC	Date Reported:	02-18-00
Laboratory Number:	G840	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-17-00
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	12-06-99	2.9455E-002	2.9425E-002	**0.10%**	**0 - 15%**
Diesel Range C10 - C28	12-06-99	2.9706E-002	2.9646E-002	**0.20%**	**0 - 15%**

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

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

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	**ND**	**250**	**250**	**100%**	**75 - 125%**
Diesel Range C10 - C28	**ND**	**250**	**250**	**100%**	**75 - 125%**

ND - Parameter not detected at the stated detection limit.

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

Comments: **QA/QC for samples G840 and G855.**

Analyst

Review

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