3RP-416

Annual Groundwater Remediation Reports

Volume 1

January 2007

XTO ENERGY

RECEIVED

MAR 05 2007

Oil Conservation Division
Environmental Bureau

March 2, 2007

Mr. Glenn von Gonten
Hydrologist-Groundwater Remediation
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Annual Groundwater Remediation Reports

Dear Mr. von Gonten,

XTO Energy Inc. (XTO) is submitting the Annual Groundwater Remediation Reports in accordance with the NMOCD approved Groundwater Management Plan (GMP). Enclosed are summary reports with analytical data, summary tables, site maps, potentiometric surface diagrams and recommendations/proposed actions for:

- Baca Gas Com A #1A 3R0104
- Bruington Gas Com #1 3R0106
- Carson Gas Com #1E 3R415
- EJ Johnson C #1E 3R0385
- Federal Gas Com #H1 3R0110
- Frost, Jack B #2 3R416
- Garcia Gas Com B #1 3R0111
- Haney Gas Com B #1E 3R0113
- Hare Gas Com B #1 3R413
- Hare Gas Com B #1E 3R0384
- Hare Gas Com I #1 3R412
- Masden Gas Com #1E 3R0120
- McDaniel Gas Com B #1E 3R0121
- OH Randel #7 3R0386
- PO Pipken #3E 3R409
- Romero Gas Com A #1 3R0123
- Rowland Gas Com #1 3R124
- Snyder Gas Com #1A 3R0126
- Stedje Gas Com #1 3R0128
- Sullivan Frame A #1A
- Sullivan Gas Com D #1 3R0131
- Valdez A #1E 3R0134

We have also enclosed an Annual Report for one site that meets the closure requirements outlined in the GMP. XTO respectfully requests closure of:

- Abrams J #1 3R0100

In previously submitted reports three sites met the closure requirements outlined in the GMP and XTO requested closure on those sites in January 2006. Per your request reports for the below listed sites are being submitted again.

- Armenta Gas Com #1E 3R0394
- Bergin Gas Com #1E 3R0105
- State Gas Com BS #1 3R0127

Thank you for your review of the reports. XTO looks forward to hearing from you regarding closure requests and proposed remediation actions. If you have any questions please do not hesitate to contact me at (505) 566-7942.

Respectfully,

Lisa Winn
Environmental Coordinator
San Juan Division

cc: Mr. Brandon Powell, Environmental, NMOCD District III Office, Aztec, NM
Mr. Martin Nee, Lodestar Services Inc.
File- San Juan Groundwater

JACK FROST B #2

XTO ENERGY INC.

ANNUAL GROUNDWATER REPORT

2006

JACK FROST B #2
(D) SECTION 27 – T27N – R10W, NMPM
SAN JUAN COUNTY, NEW MEXICO

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

January 2007

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Attachment 1:	2006 Laboratory Reports
Attachment 2:	Pit Closure report (08/94)

2006 XTO GROUNDWATER REPORT

FROST, JACK B #2

SITE DETAILS

Legals - Twn: 27N **Rng:** 10W **Sec:** 27 **Unit:** D
NMOCD Hazard Ranking: 30 **Land Type:** FEDERAL

PREVIOUS ACTIVITIES

Excavation: Aug-94 (400 CY)
Quarterly Sampling Initiated: Sep-99
Sampling Re-initiated: Jun-06
Monitor Wells: Sep-99
Additional Monitor Well: Aug-06

SITE MAP

A site map is presented as Figure 1.

SUMMARY TABLES

Groundwater monitoring wells have been sampled for benzene, toluene, ethyl benzene, and total xylenes (BTEX) and general water quality parameters since 1994. A summary of the laboratory results from BTEX analysis is presented as Table 1. A summary of general water quality data is presented as Table 2. Copies of the laboratory data sheets and associated quality assurance/quality control data for 2006 are presented as Attachment 1.

POTENTIOMETRIC SURFACE DIAGRAMS

Field data collected for site monitoring activities indicates a groundwater gradient that trends towards the west with a slight southwest component, following surface contours and the general flow of the arroyo. Figures 2-4 illustrate the estimated groundwater gradients for June 2006, September 2006, and December 2006, respectively.

2006 ACTIVITIES

Annual Groundwater Remediation Report- The 2005 annual report was submitted to New Mexico Oil Conservation Division (NMOCD) in April 2006, proposing installation of an additional groundwater monitor well and quarterly sampling of the groundwater monitor wells, in accordance with the NMOCD approved Groundwater Management Plan. In August 2006, groundwater monitor well MW-4 was installed cross to down gradient of the estimated source area. Groundwater monitor well MW-2R was installed within the source area to replace the original MW-2. All monitor wells were resurveyed November 2006.
Groundwater Monitoring – Groundwater samples were collected from monitoring wells MW-1 through MW-4 during the last two quarters of 2006. Laboratory analytical results have been below standards or not detectable for three quarters at MW-1 and MW-3 and for two quarters at MW-2R and MW-4 (additional installation) at this site. Quarterly groundwater samples will continue in 2007 until four consecutive quarters have been reported below New Mexico Water Quality Control Commission (NMWQCC) standards.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Bore/Test Hole Reports are presented are presented as Figures 5-7 representing drilling that occurred on site in September 1999 and Figures 8-11 are presented for the monitoring wells installed during 2006.

2006 XTO GROUNDWATER REPORT

DISPOSITION OF GENERATED WASTES

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

CONCLUSIONS

January 1998 XTO Energy Inc. (XTO) acquired the Jack Frost B #2 from Amoco Production Company. XTO understands the initial evaluation of groundwater impact came from samples collected from groundwater pooling in the bottom of the excavated pit (Attachment 2). The analytical results of the initial groundwater samples indicated elevated levels of BTEX constituents. Following closure of the pit, groundwater monitor wells were installed and groundwater samples were collected for laboratory analysis in September 1999 and again in February and June 2000. Groundwater collected for analysis from monitor well MW-2 exhibited BTEX concentrations that exceed NMWQCC standards. Subsequent sampling events showed a decrease in BTEX constituents to trace levels. Up gradient monitor well MW-1 and down gradient monitor well MW-3 exhibit no detectable concentrations of BTEX constituents during the 2000 sampling events

Groundwater analytical data from MW-1, MW-2R, MW-3, and MW-4 for two and three quarters in 2006 have demonstrated no detectable levels or trace levels of BTEX constituents. The quarterly sampling will continue into 2007 until four (4) consecutive quarters have been analyzed for BTEX constituents and indicate groundwater is below NMWQCC standards fro BTEX.

RECOMMENDATIONS

- Quarterly sampling will continue at all monitor wells until analytical results show hydrocarbon constituents are below New Mexico groundwater standards for four (4) consecutive quarters.
- Following OCD approval for closure, all monitor well locations will be abandoned in accordance with the monitoring well abandonment plan.

TABLE 1
XTO ENERGY INC. GROUNDWATER LAB RESULTS

FROST, JACK B #2- SEPARATOR PIT
UNIT D, SEC. 27, T27N, R10W

Revised Date: February 1, 2007

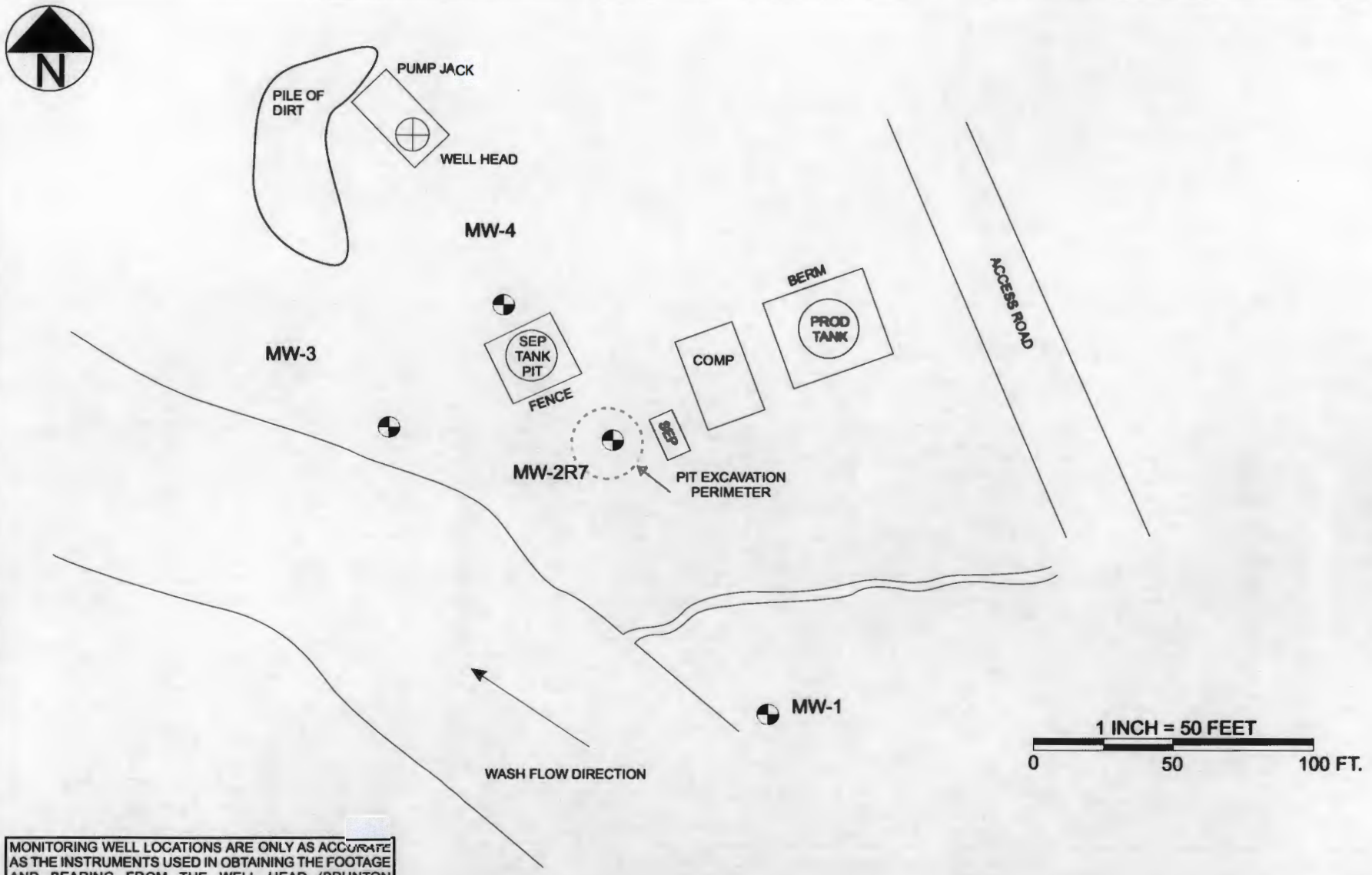
Sample Date	Monitor Well No.	DTW (ft)	TD (ft)	Product (ft)	Benzene ug/L	Toluene ug/L	Ethyl Benzene ug/L	Total Xylene ug/L
5-Aug-94	Initial GW Sample				48	411	ND	91.1
27-Sep-99	MW #1	8.73	20		24.9	4	ND	6.3
18-Feb-00		9.26			ND	ND	ND	ND
20-Jun-00		9.28			ND	ND	ND	ND
20-Jun-06		10.24	20.44		ND	ND	ND	ND
20-Sep-06		10.34	20.4		ND	ND	ND	ND
5-Dec-06		9.74	20.4		ND	ND	ND	ND
27-Sep-99	MW #2	11.71	20		350	60.1	90.5	253.9
18-Feb-00		11.87			0.9	ND	2.6	3.9
20-Jun-00		11.38			0.5	ND	1.6	3.5
20-Jun-06		MONITORING WELL NOT FOUND						
20-Sep-06	MW #2R	13.44	22.44		ND	ND	1	3.7
5-Dec-06		13.33	22.44		ND	ND	ND	ND
27-Sep-99	MW #3	13.76	20		21.2	3.1	3.1	15.1
18-Feb-00		12.87			ND	ND	ND	ND
20-Jun-00		12.42			ND	ND	ND	ND
20-Jun-06		13.29	20.41		ND	ND	ND	ND
20-Sep-06		13.34	20.4		ND	ND	ND	ND
5-Dec-06		13.4	20.4		ND	ND	ND	ND
20-Sep-06	MW #4	13.24	22.62		46	240	53	640
5-Dec-06		13.22	22.62		73	6.4	62	130
NMWQCC GROUNDWATER STANDARDS					10	750	750	620

TABLE 2
XTO ENERGY INC. GROUNDWATER LAB RESULTS

FROST, JACK B #2- SEPARATOR PIT
UNIT D, SEC. 27, T27N, R10W

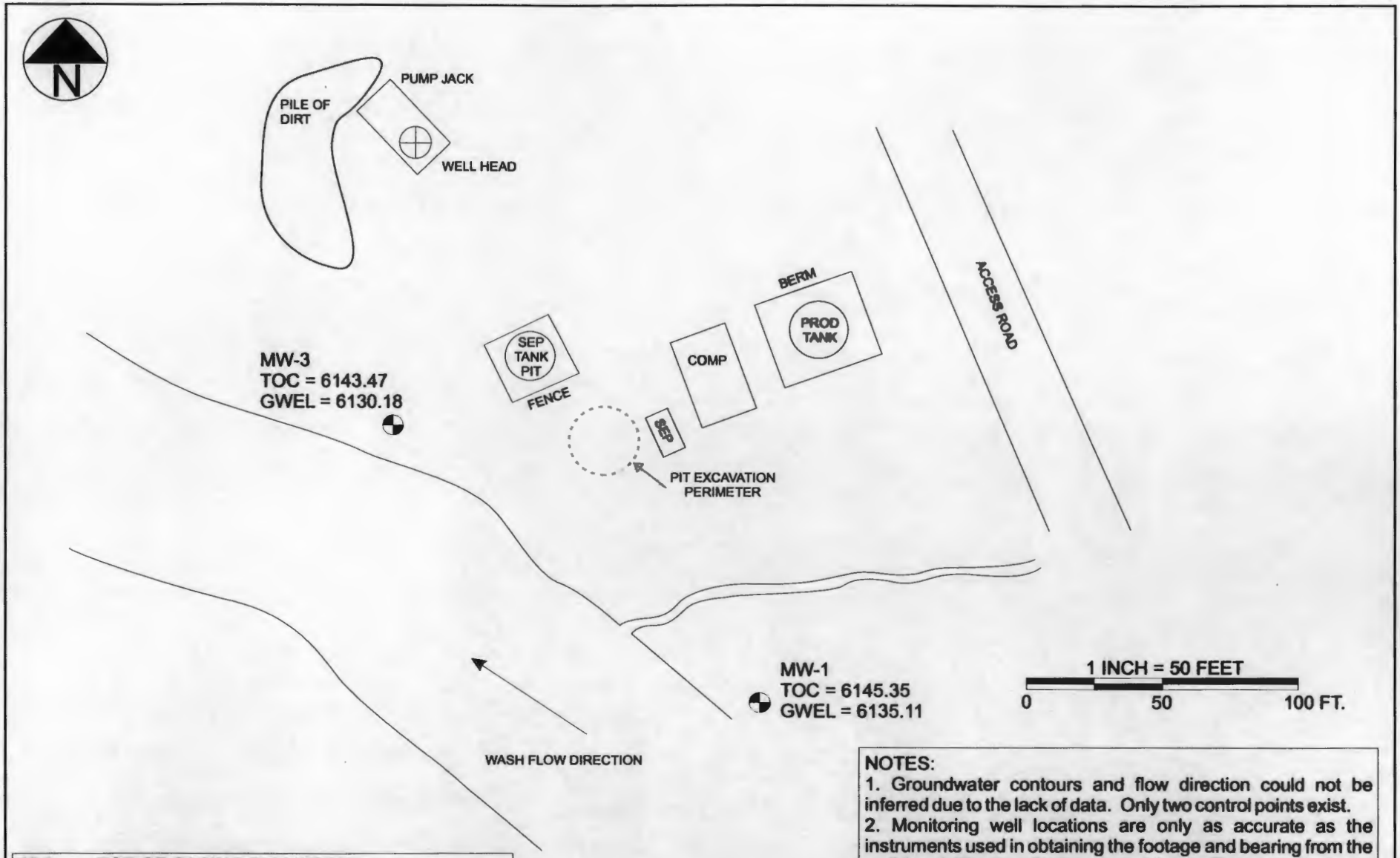
Revised Date: February 1, 2007
Sample Date: September 27, 1999

PARAMETERS	MW #1	MW #2	MW #3	UNITS
LAB Ph	7.85	7.98	7.8	s.u.
LAB CONDUCTIVITY @ 25 C	6,810	1,876	4,180	umhos/cm
TOTAL DISSOLVED SOLIDS @ 180 C	3,400	915	2,080	mg/L
TOTAL DISSOLVED SOLIDS (Calc)	3,370	710	1,980	mg/L
SODIUM ABSORPTION RATIO	48.9	10.5	39.2	ratio
TOTAL ALKALINITY AS CaCO3	638	316	524	mg/L
TOTAL HARDNESS AS CaCO3	94	78	52	mg/L
BICARBONATE AS HCO3	638	316	524	mg/L
CARBONATE AS CO3	< 1	< 1	< 1	mg/L
HYDROXIDE AS OH	< 1	< 1	< 1	mg/L
NITRATE NITORGEN	0.1	1	0.5	mg/L
NITRITE NITROGEN	0.004	0.300	0.021	mg/L
CHLORIDE	5	2	4.5	mg/L
FLUORIDE	1.96	1.21	4.4	mg/L
PHOSPHATE	0.9	6.5	1	mg/L
SULFATE	1,850	260	983	mg/L
IRON	0.007	0.288	0.042	mg/L
CALCIUM	28.8	25.6	18.4	mg/L
MAGNESIUM	5.4	3.4	1.5	mg/L
POTASSIUM	3.0	3.0	3.0	mg/L
SODIUM	1,090	214	650	mg/L
CATION/ANION DIFFERENCE	0.25	0.02	0.2	%



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.

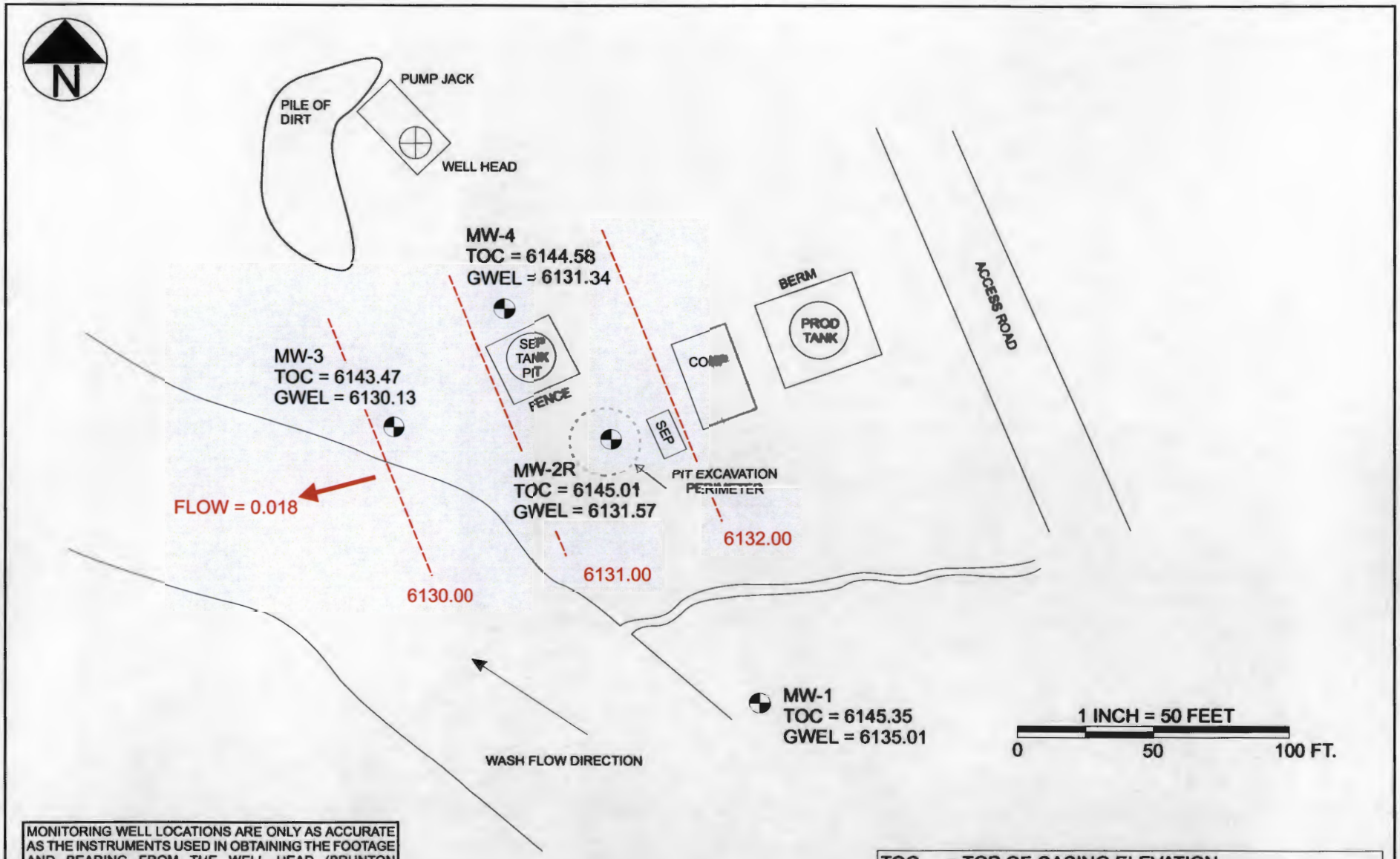
Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	JACK FROST B #2 NW/4 NW/4 SEC. 27, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 01/24/2007	FIGURE 1 SITE MAP



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

NOTES:
1. Groundwater contours and flow direction could not be inferred due to the lack of data. Only two control points exist.
2. 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.

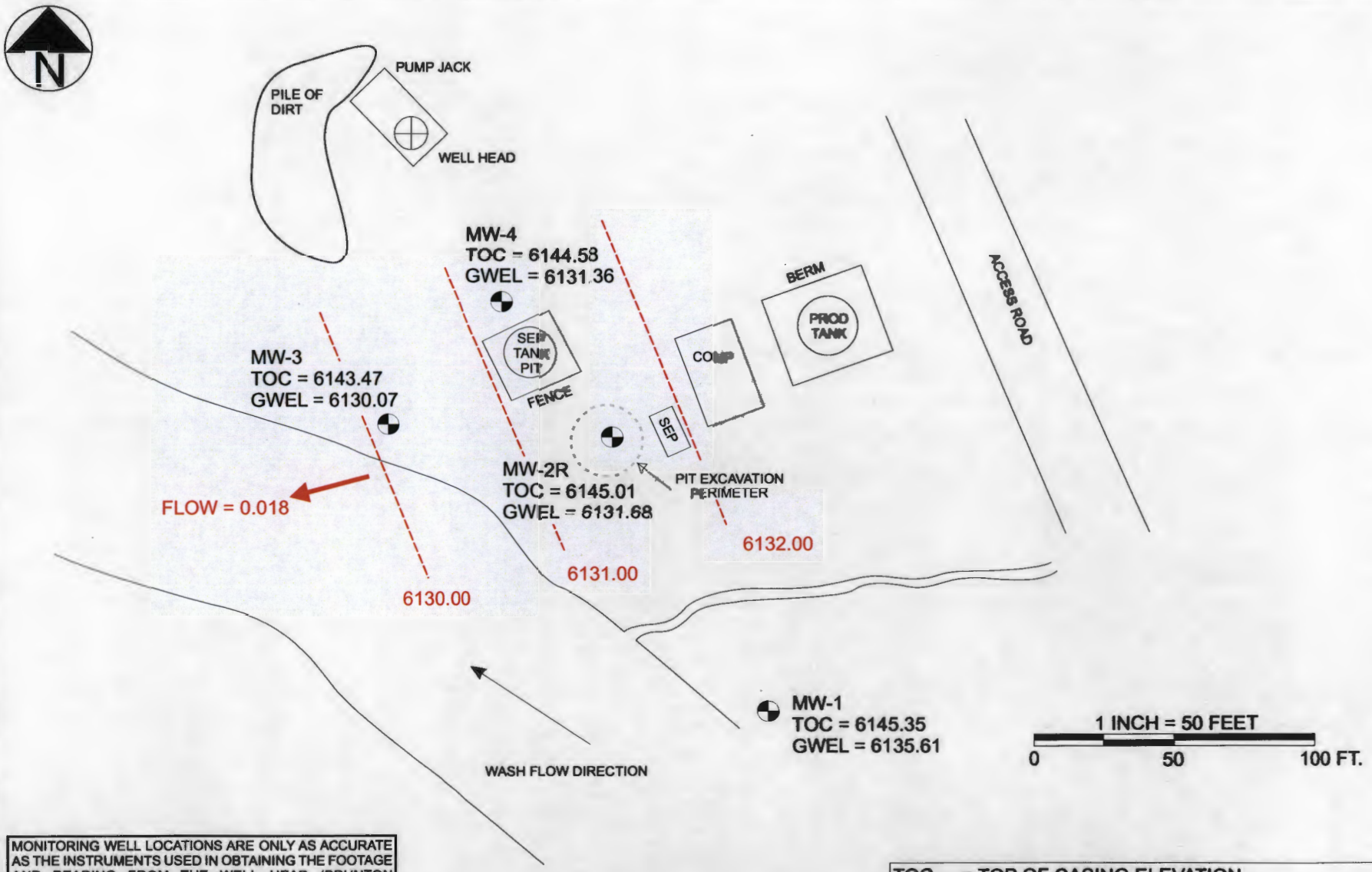
Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	JACK FROST B #2 NW/4 NW/4 SEC. 27, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 01/05/2007	FIGURE 2 GROUNDWATER GRADIENT MAP 06/20/2006



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.

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

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	JACK FROST B #2 NW/4 NW/4 SEC. 27, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 01/05/2007	FIGURE 3 GROUNDWATER GRADIENT MAP 09/20/2006



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.

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

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	JACK FROST B #2 NW/4 NW/4 SEC. 27, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 01/05/2007	FIGURE 4 GROUNDWATER GRADIENT MAP 12/05/2006

FIGURE 5

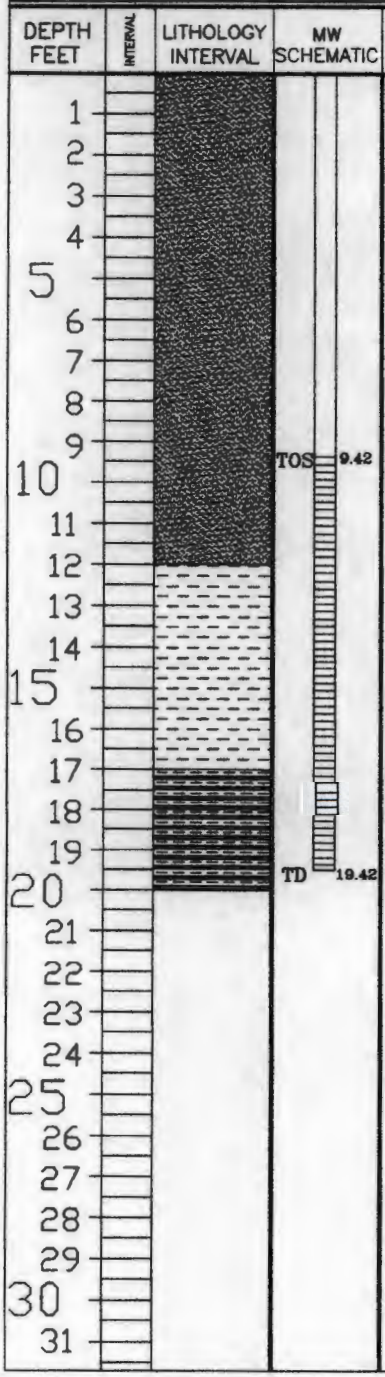
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

BORING #..... BH - 1
MW #..... 1
PAGE #..... 1
DATE STARTED 9/21/99
DATE FINISHED 9/21/99
OPERATOR..... REP
PREPARED BY NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: FROST, JACK B #2
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 273 FT., S33E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 0.58 FT. ABOVE GROUND SURFACE.

MODERATE YELLOWISH SAND TO SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.0 - 12.0 FT. INTERVAL).

▼ GW DEPTH ON 9/27/99 = 8.15 FT. (APPROX.) FROM GROUND SURFACE.

DARK YELLOWISH SILTY CLAY, COHESIVE, SLIGHTLY MOIST, FIRM TO STIFF, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (12.0 - 17.0 FT. INTERVAL).

OLIVE GRAY CLAY, PLASTIC TO HIGHLY PLASTIC, SLIGHTLY MOIST TO SLIGHTLY SATURATED, STIFF TO VERY STIFF, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (17.0 - 20.0 FT. INTERVAL).

NOTE:
- SAND TO SILTY SAND.
- SILTY CLAY.
- CLAY.

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

DRAWING: BH-1.SKD | DATE: 9/25/99 | DWN BY: NJV

FIGURE 6

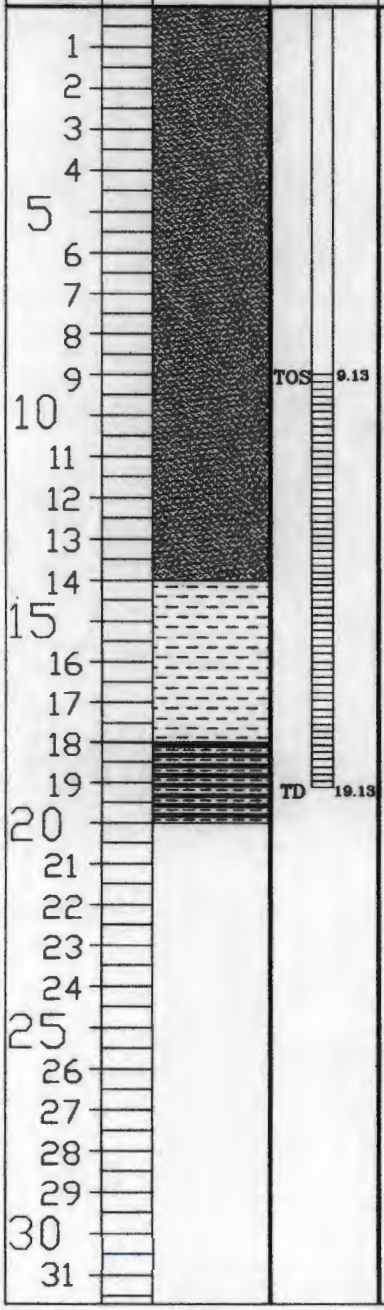
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

BORING #..... BH - 2
MW #..... 2
PAGE #..... 2
DATE STARTED 9/21/99
DATE FINISHED 9/21/99
OPERATOR..... REP
PREPARED BY NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: FROST, JACK B #2
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 156 FT., S35E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 0.87 FT. ABOVE GROUND SURFACE.

MODERATE YELLOWISH SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.0 - 14.0 FT. INTERVAL).

▼ GW DEPTH ON 9/27/99 = 10.84 FT. (APPROX.) FROM GROUND SURFACE.

MEDIUM TO DARK GRAY SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM TO LOOSE, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (14.0 - 18.0 FT. INTERVAL).

LIGHT TO MEDIUM GRAY SILTY CLAY TO CLAY, PLASTIC TO HIGHLY PLASTIC, SLIGHTLY MOIST TO SLIGHTLY SATURATED, STIFF TO VERY STIFF, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (18.0 - 20.0 FT. INTERVAL).

NOTE:
- SAND.
- SILTY SAND.
- SILTY CLAY TO CLAY.

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

DRAWING: BH-2.SKD	DATE: 9/25/99	DWN BY: NJV

FIGURE 7

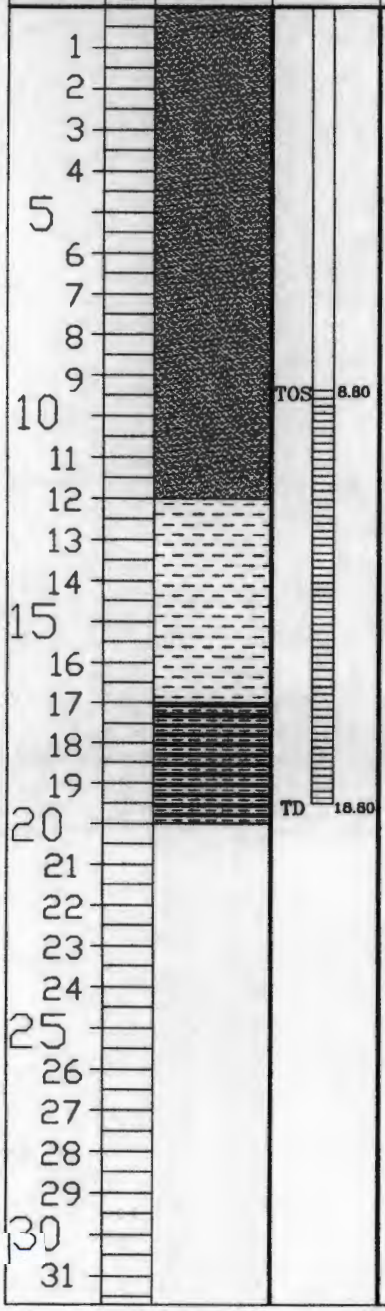
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

BORING #..... BH - 3
MW #..... 3
PAGE #..... 3
DATE STARTED 9/21/99
DATE FINISHED 9/21/99
OPERATOR..... REP
PREPARED BY NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: FROST, JACK B #2
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 120 FT., S1E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 1.20 FT. ABOVE GROUND SURFACE.

MODERATE YELLOWISH SAND TO SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.0 – 12.0 FT. INTERVAL).

▼ GW DEPTH ON 9/27/99 = 12.56 FT. (APPROX.) FROM GROUND SURFACE.

DARK YELLOWISH SILTY CLAY, COHESIVE, SLIGHTLY MOIST, FIRM TO STIFF, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (12.0 – 17.0 FT. INTERVAL).

OLIVE GRAY CLAY, PLASTIC TO HIGHLY PLASTIC, SLIGHTLY MOIST TO SLIGHTLY SATURATED, STIFF TO VERY STIFF, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (17.0 – 20.0 FT. INTERVAL).

NOTE:
- SAND TO SILTY SAND.
- SILTY CLAY.
- CLAY.

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

DRAWING: BH-3.SKD	DATE: 9/25/99	DWN BY: NJV

FIGURE 8

MONITORING WELL INSTALLATION RECORD

Borehole # 1
Well # MW-2R
Page 1 of 1

Lodestar Services, Inc
PO Box 3861
Farmington, New Mexico 87499
(505) 334-2791

Project Name XTO Ground Water
Project Number _____ Cost Code _____
Project Location Jack Frost B #2

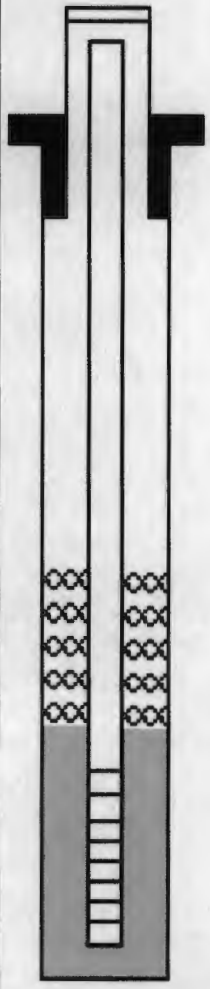
Elevation 6172'
Well Location 36° 33.041' N, 107° 53.289' W
GWL Depth 14.89'
Installed By Envirotech

On-Site Geologist Ashley Ager
Personnel On-Site
Contractors On-Site Kelly Padilla and assistant
Client Personnel On-Site

Date/Time Started 08/31/06, 11:05
Date/Time Completed 08/31/06, 12:27

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing	Steel	2.68
Bottom of Protective Casing		-1.68
Top of Permanent Borehole Casing	Sch. 40 PVC	2.66
Bottom of Permanent Borehole Casing		-22.44
Top of Concrete	Concrete	0.1
Bottom of Concrete		-0.2
Top of Grout		NA
Bottom of Grout		NA
Top of Well Riser	Sch. 40 PVC	2.66
Bottom of Well Riser		-22.44
Top of Well Screen	Sch. 40 PVC	-7.14
Bottom of Well Screen		-22.14
Top of Peltonite Seal	Bentonite	-0.2
Bottom of Peltonite Seal		-3
Top of Gravel Pack	Sand	-3
Bottom of Gravel Pack		-22.13
Top of Natural Cave-In	Sand and cobbles	-22.13
Bottom of Natural Cave-In		-22.26
Top of Groundwater		-14.89
Total Depth of Borehole		-22.26



Top of Protective Casing 2.68
Top of Riser 2.66
Ground Surface 0

Top of Seal -0.2

Top of Gravel Pack -3
Top of Screen -7.14

Bottom of Screen -22.14
Bottom of Borehole -22.26

Comments: 50 lb bags of sand used: 8 ea. , 50 lb bags of bentontie used: 2 ea.

Geologist Signature Ashley L. Ager

S:\XTO ENVIRONMENTAL\San Juan Groundwater\Jack Frost B2\monitoring well install_Jack Frost_MW-2R.doc

FIGURE 9
RECORD OF SUBSURFACE EXPLORATION

LodeStar Services
P.O. Box 4465
Durango, CO 81302
303-917-6288

Borehole #: 1
Well #: MW-2R
Page: 1 of 1
Project Number:
Project Name: XTO Ground Water
Project Location: Jack Frost B #2

Borehole Location: 36° 33.041' N, 107° 53.289' W
GWL Depth: 13'
Drilled By: Envirotech
Well Logged By: Ashley Ager
Date Started: 08/31/06
Date Completed: 08/31/06

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0		0-1.5	cuttings	Tan, poorly sorted coarse sand and gravel (<10? Gravel), angular and dry (Fill)	0	Easy and fast
		1.5-15.5	cuttings	Brown, poorly sorted coarse sand, no gravel, angular, varying mineralogies, damp and unconsolidated	0	Easy and fast
5						
10						
				13' = wet sand		
15		15.5-20	cuttings	Gray, poorly sorted coarse sand, angular, varying mineralogy, wet and unconsolidated	5.8	Easy and fast
20						

Comments: Very easy well to install.

Geologist Signature: Ashley L. Ager

FIGURE 10

MONITORING WELL INSTALLATION RECORD

Borehole # 1
Well # MW-4
Page 1 of 1

Lodestar Services, Inc
PO Box 3861
Farmington, New Mexico 87499
(505) 334-2791

Project Name XTO Ground Water
Project Number _____ Cost Code _____
Project Location Jack Frost B #2

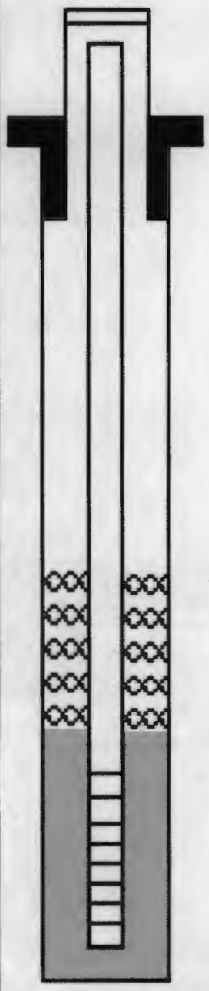
Elevation 6172'
Well Location 36° 33.044' N, 107° 53.297' W
GWL Depth 19.52'
Installed By Envirotech

On-Site Geologist Ashley Ager
Personnel On-Site
Contractors On-Site Kelly Padilla and assistant
Client Personnel On-Site

Date/Time Started 08/31/06, 12:55
Date/Time Completed 08/31/06, 14:45

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing	Steel	2.4
Bottom of Protective Casing		-0.6
Top of Permanent Borehole Casing	Sch. 40 PVC	2.3
Bottom of Permanent Borehole Casing		-22.65
Top of Concrete	Concrete	0.1
Bottom of Concrete		-0.3
Top of Grout		NA
Bottom of Grout		NA
Top of Well Riser	Sch. 40 PVC	2.3
Bottom of Well Riser		-22.65
Top of Well Screen	Sch. 40 PVC	-7.35
Bottom of Well Screen		-22.35
Top of Peltonite Seal	Bentonite	-0.3
Bottom of Peltonite Seal		-3
Top of Gravel Pack	Sand	-3
Bottom of Gravel Pack		-22.65
Top of Natural Cave-In	Sand and cobbles	-22.65
Bottom of Natural Cave-In		-22.8
Top of Groundwater		-19.52
Total Depth of Borehole		-22.6



Top of Protective Casing 2.4
Top of Riser 2.3
Ground Surface 0
Top of Seal -0.1
Top of Gravel Pack -3
Top of Screen -7.35
Bottom of Screen -22.35
Bottom of Borehole -22.6

Comments: 50 lb bags of sand used: 10 ea. . 50 lb bags of bentontie used: 2 ea.

Geologist Signature Ashley L. Ager

FIGURE 11
RECORD OF SUBSURFACE EXPLORATION

LodeStar Services
P.O. Box 4465
Durango, CO 81302
303-917-6288

Borehole #: 1
Well #: MW-4
Page: 1 of 1
Project Number:
Project Name: XTO Ground Water
Project Location: Jack Frost B #2

Borehole Location: 36° 33.044' N, 107° 53.297' W
GWL Depth: 18'
Drilled By: Envirotech
Well Logged By: Ashley Ager
Date Started: 08/31/06
Date Completed: 08/31/06

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0		0-0.5	cuttings	Tan, poorly sorted coarse sand and gravel (<10%), angular and dry (Fill)	0	Easy
		0.5-13.5	cuttings	Brown, poorly sorted coarse sand, damp, subangular, <1% gravel content	0	Easy
5						
10						
		13.5-17	cuttings	Gray, silty sand, very coarse, angular, wet, poorly sorted	2.9	Easy
15						
		17-19	cuttings	Brown, poorly sorted coarse sand, wet, subangular, no gravel	0	Easy
20		19-22	cuttings	Brown, poorly sorted coarse sand with cobbles (<5%)	0	Hard and slow

Comments:

Geologist Signature: Ashley L. Ager

Hall Environmental Analysis Laboratory, Inc.

Date: *28-Jun-06*

CLIENT: XTO Energy
Project: Groundwater - Jack Frost
Lab Order: 0606233

Lab ID: 0606233-01 **Collection Date:** 6/20/2006 8:54:00 AM
Client Sample ID: Jack Frost B#2 MW-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: HLM
Benzene	ND	1.0		µg/L	1	6/23/2006 8:23:32 AM
Toluene	ND	1.0		µg/L	1	6/23/2006 8:23:32 AM
Ethylbenzene	ND	1.0		µg/L	1	6/23/2006 8:23:32 AM
Xylenes, Total	ND	3.0		µg/L	1	6/23/2006 8:23:32 AM
Surr: 4-Bromofluorobenzene	84.0	72.2-125		%REC	1	6/23/2006 8:23:32 AM

Lab ID: 0606233-02 **Collection Date:** 6/20/2006 9:02:00 AM
Client Sample ID: Jack Frost B#2 MW-1 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: HLM
Benzene	ND	1.0		µg/L	1	6/23/2006 8:52:36 AM
Toluene	ND	1.0		µg/L	1	6/23/2006 8:52:36 AM
Ethylbenzene	ND	1.0		µg/L	1	6/23/2006 8:52:36 AM
Xylenes, Total	ND	3.0		µg/L	1	6/23/2006 8:52:36 AM
Surr: 4-Bromofluorobenzene	85.0	72.2-125		%REC	1	6/23/2006 8:52:36 AM

Lab ID: 0606233-03 **Collection Date:** 6/20/2006 7:00:00 AM
Client Sample ID: 200606TB01 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: HLM
Benzene	ND	1.0		µg/L	1	6/23/2006 7:54:36 AM
Toluene	ND	1.0		µg/L	1	6/23/2006 7:54:36 AM
Ethylbenzene	ND	1.0		µg/L	1	6/23/2006 7:54:36 AM
Xylenes, Total	ND	3.0		µg/L	1	6/23/2006 7:54:36 AM
Surr: 4-Bromofluorobenzene	88.4	72.2-125		%REC	1	6/23/2006 7:54:36 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: Groundwater - Jack Frost Work Order: 0606233

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									Batch ID: R19665
Sample ID: 5ML RB		*MBLK*							Analysis Date: 6/22/2006
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 LCS		*LCS*							Analysis Date: 6/22/2006
Benzene	18.63	µg/L	1.0	93.2	85	115			
Toluene	17.48	µg/L	1.0	87.4	85	118			
Ethylbenzene	17.83	µg/L	1.0	89.2	85	116			
Xylenes, Total	55.30	µg/L	3.0	92.2	85	119			

Qualifiers:

*	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.

Sample Receipt Checklist

Client Name XTO ENERGY | Date and Time Received: 6/22/2006

Work Order Number 0606233 | Received by AT

Checklist completed by _____ 6/22/06
Signature | Date

Matrix | Carrier name FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☑	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? 4° *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA/QC Package: Std ☒ Level 4 ☐
Other:

Client: Kim Champlin
XTO Energy

Address: 2700 Farmington Ave
Bldg K, Ste 1
Farmington, NM 87401

Phone #: 505-566-7954
Fax #:

Project Name: Ground water

Project #:

Project Manager: Lisa Winn

Sampler: Martin Nee

Sample Temperature: 4°

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative HCl	HEAL No.
06-20-06	8:54	GW	Jack Frost B#2	MW-3			✓	0606236-01
06-20-06	9:02	GW	Jack Frost B#2	MW-1			✓	-02
06-20-06	07:00	water	20060618B01				✓	-03

ANALYSIS REQUEST

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	8020 BTEX				Air Bubbles or Headspace (Y or N)
												✓				
												✓				
												✓				

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
6/21/06	0720		6/21/06
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
			1615

Remarks:

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Oct-06*

CLIENT:	XTO Energy	**Client Sample ID:**	Jack Frost B#2 MW-4
Lab Order:	0609291	**Collection Date:**	9/20/2006 12:10:00 PM
Project:	XTO Ground Water	**Date Received:**	9/22/2006
Lab ID:	0609291-05	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						**Analyst: SMP**
Benzene	46	5.0		µg/L	5	9/29/2006
Toluene	240	5.0		µg/L	5	9/29/2006
Ethylbenzene	53	5.0		µg/L	5	9/29/2006
Xylenes, Total	640	15		µg/L	5	9/29/2006
Surr: 1,2-Dichloroethane-d4	93.4	69.9-130		%REC	5	9/29/2006
Surr: 4-Bromofluorobenzene	113	71.2-123		%REC	5	9/29/2006
Surr: Dibromofluoromethane	91.9	73.9-134		%REC	5	9/29/2006
Surr: Toluene-d8	101	81.9-122		%REC	5	9/29/2006

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		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Oct-06*

CLIENT:	XTO Energy	**Client Sample ID:**	Jack Frost B#2 MW-3
Lab Order:	0609291	**Collection Date:**	9/20/2006 12:28:00 PM
Project:	XTO Ground Water	**Date Received:**	9/22/2006
Lab ID:	0609291-06	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: SMP
Benzene	ND	1.0		µg/L	1	9/29/2006
Toluene	ND	1.0		µg/L	1	9/29/2006
Ethylbenzene	ND	1.0		µg/L	1	9/29/2006
Xylenes, Total	ND	3.0		µg/L	1	9/29/2006
Surr: 1,2-Dichloroethane-d4	93.4	69.9-130		%REC	1	9/29/2006
Surr: 4-Bromofluorobenzene	104	71.2-123		%REC	1	9/29/2006
Surr: Dibromofluoromethane	104	73.9-134		%REC	1	9/29/2006
Surr: Toluene-d8	97.3	81.9-122		%REC	1	9/29/2006

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		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Oct-06*

CLIENT:	XTO Energy	**Client Sample ID:**	Jack Frost B#2 MW-1
Lab Order:	0609291	**Collection Date:**	9/20/2006 1:22:00 PM
Project:	XTO Ground Water	**Date Received:**	9/22/2006
Lab ID:	0609291-07	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						**Analyst: SMP**
Benzene	ND	1.0		µg/L	1	9/29/2006
Toluene	ND	1.0		µg/L	1	9/29/2006
Ethylbenzene	ND	1.0		µg/L	1	9/29/2006
Xylenes, Total	ND	3.0		µg/L	1	9/29/2006
Surr: 1,2-Dichloroethane-d4	91.1	69.9-130		%REC	1	9/29/2006
Surr: 4-Bromofluorobenzene	104	71.2-123		%REC	1	9/29/2006
Surr: Dibromofluoromethane	94.2	73.9-134		%REC	1	9/29/2006
Surr: Toluene-d8	98.6	81.9-122		%REC	1	9/29/2006

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		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Oct-06*

CLIENT:	XTO Energy	**Client Sample ID:**	Jack Frost B#2 MW-2R
Lab Order:	0609291	**Collection Date:**	9/20/2006 1:15:00 PM
Project:	XTO Ground Water	**Date Received:**	9/22/2006
Lab ID:	0609291-08	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: SMP
Benzene	ND	1.0		µg/L	1	9/29/2006
Toluene	ND	1.0		µg/L	1	9/29/2006
Ethylbenzene	1.0	1.0		µg/L	1	9/29/2006
Xylenes, Total	3.7	3.0		µg/L	1	9/29/2006
Surr: 1,2-Dichloroethane-d4	92.6	69.9-130		%REC	1	9/29/2006
Surr: 4-Bromofluorobenzene	106	71.2-123		%REC	1	9/29/2006
Surr: Dibromofluoromethane	97.9	73.9-134		%REC	1	9/29/2006
Surr: Toluene-d8	98.3	81.9-122		%REC	1	9/29/2006

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		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Oct-06*

CLIENT:	XTO Energy	**Client Sample ID:**	20092003TB01
Lab Order:	0609291	**Collection Date:**	
Project:	XTO Ground Water	**Date Received:**	9/22/2006
Lab ID:	0609291-10	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: SMP
Benzene	ND	1.0		µg/L	1	9/29/2006
Toluene	ND	1.0		µg/L	1	9/29/2006
Ethylbenzene	ND	1.0		µg/L	1	9/29/2006
Xylenes, Total	ND	3.0		µg/L	1	9/29/2006
Surr: 1,2-Dichloroethane-d4	91.3	69.9-130		%REC	1	9/29/2006
Surr: 4-Bromofluorobenzene	103	71.2-123		%REC	1	9/29/2006
Surr: Dibromofluoromethane	94.1	73.9-134		%REC	1	9/29/2006
Surr: Toluene-d8	96.0	81.9-122		%REC	1	9/29/2006

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 Ground Water
Work Order: 0609291

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: E300									
Sample ID: 0609291-01A MSD		*MSD*			Batch ID: R20810		Analysis Date: 9/25/2006 12:10:11 PM		
Chloride	11.75	mg/L	0.10	88.5	80	120	0.0681	20	
Sample ID: MBLK		*MBLK*			Batch ID: R20810		Analysis Date: 9/25/2006 10:08:19 AM		
Chloride	ND	mg/L	0.10						
Sample ID: LCS ST300-06008		*LCS*			Batch ID: R20810		Analysis Date: 9/25/2006 10:25:44 AM		
Chloride	4.991	mg/L	0.10	99.8	90	110			
Sample ID: 0609291-01A MS		*MS*			Batch ID: R20810		Analysis Date: 9/25/2006 11:52:47 AM		
Chloride	11.75	mg/L	0.10	88.7	80	120			
Method: SW8015									
Sample ID: MB-11352		*MBLK*			Batch ID: 11352		Analysis Date: 9/26/2006 7:10:34 AM		
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-11352		*LCS*			Batch ID: 11352		Analysis Date: 9/26/2006 7:45:08 AM		
Diesel Range Organics (DRO)	32.57	mg/Kg	10	65.1	64.6	116			
Sample ID: LCSD-11352		*LCSD*			Batch ID: 11352		Analysis Date: 9/26/2006 8:19:37 AM		
Diesel Range Organics (DRO)	34.41	mg/Kg	10	68.8	64.6	116	5.48	17.4	
Method: SW8015									
Sample ID: MB-11343		*MBLK*			Batch ID: 11343		Analysis Date: 9/26/2006 1:06:36 AM		
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0						
Sample ID: LCS-11343		*LCS*			Batch ID: 11343		Analysis Date: 9/26/2006 1:36:35 AM		
Gasoline Range Organics (GRO)	21.20	mg/Kg	5.0	80.8	73.4	115			
Sample ID: LCSD-11343		*LCSD*			Batch ID: 11343		Analysis Date: 9/26/2006 2:06:38 AM		
Gasoline Range Organics (GRO)	20.60	mg/Kg	5.0	78.4	73.4	115	2.87	11.6	

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: XTO Ground Water **Work Order:** 0609291

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: MB-11343		*MBLK*			Batch ID:	11343	Analysis Date:		9/26/2006 1:06:36 AM
Methyl tert-butyl ether (MTBE)	ND	mg/Kg	0.10						
Benzene	ND	mg/Kg	0.050						
Toluene	ND	mg/Kg	0.050						
Ethylbenzene	ND	mg/Kg	0.050						
Xylenes, Total	ND	mg/Kg	0.15						
Sample ID: LCS-11343		*LCS*			Batch ID:	11343	Analysis Date:		9/26/2006 1:36:35 AM
Methyl tert-butyl ether (MTBE)	0.5803	mg/Kg	0.10	126	67.9	135			
Benzene	0.2887	mg/Kg	0.050	111	77.5	123			
Toluene	2.015	mg/Kg	0.050	110	85.3	129			
Ethylbenzene	0.3749	mg/Kg	0.050	104	79.6	121			
Xylenes, Total	2.318	mg/Kg	0.15	107	80	130			
Sample ID: LCSD-11343		*LCSD*			Batch ID:	11343	Analysis Date:		9/26/2006 2:06:38 AM
Methyl tert-butyl ether (MTBE)	0.6050	mg/Kg	0.10	132	67.9	135	4.17	28	
Benzene	0.2927	mg/Kg	0.050	113	77.5	123	1.38	27	
Toluene	2.044	mg/Kg	0.050	112	85.3	129	1.42	19	
Ethylbenzene	0.3802	mg/Kg	0.050	106	79.6	121	1.40	10	
Xylenes, Total	2.342	mg/Kg	0.15	108	80	130	1.06	13	
Method: E160.1									
Sample ID: MB-11366		*MBLK*			Batch ID:	11366	Analysis Date:		9/26/2006
Total Dissolved Solids	ND	mg/L	20						
Sample ID: LCS-11366		*LCS*			Batch ID:	11366	Analysis Date:		9/26/2006
Total Dissolved Solids	982.0	mg/L	20	98.2	80	120			

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: XTO Ground Water **Work Order:** 0609291

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: 5ml rb		*MBLK*			Batch ID: R20888		Analysis Date:		9/29/2006
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.5						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	3.0						
Sample ID: 100ng lcs B		*LCS*			Batch ID: R20888		Analysis Date:		9/29/2006
Benzene	18.83	µg/L	1.0	94.1	74.9	113			
Toluene	18.96	µg/L	1.0	94.8	77	121			

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.

Sample Receipt Checklist

Client Name XTO ENERGY | Date and Time Received: 9/22/2006

Work Order Number 0609291 | Received by GLS

Checklist completed by D Schlyper 9-25-06
Signature Date

Matrix | Carrier name Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? 3° *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA/QC Package: Std ☑ Level 4 ☐
Other:

Client: Kim Champlin
XTO

Address: 2700 Farmington Blvd
Bldg K, Ste 1
Farmington, NM

Phone #: 505-566-7954
Fax #:

Project Name: XTO Ground Water

Project #:

Project Manager: Lisa Winn

Sampler: Ashley Ager

Sample Temperature: 3°

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: None	HEAL No. 0609291	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	8021B BTEX	TDS	Cl	Temperature	Air Bubbles or Headspace (Y or N)
09-20-06	11:00	GW	EJ Johnson CIE MW-1				✓	1														✓	✓		
09-20-06	11:07	GW	EJ Johnson CIE MW-2				✓	2														✓	✓		
09-20-06	11:20	GW	EJ Johnson CIE MW-3				✓	3														✓	✓		
09-20-06	~~11:40~~ 12	GW	EJ Johnson CIE MW-5				✓	4														✓	✓		
09-20-06	~~11:45~~ 12	GW	EJ Johnson CIE MW-5		✓			~~5~~ 4 GS													✓				
09-20-06	12:10	GW	Jack Frost B#2 MW-4		✓			5 ~~6~~ GS													✓				
09-20-06	12:28	GW	Jack Frost B#2 MW-3		✓			6 ~~7~~ GS													✓				
09-20-06	13:22	GW	Jack Frost B#2 MW-1		✓			7 ~~8~~ GS													✓				
09-20-06	13:15	GW	Jack Frost B#2 MW-2R		✓			8 ~~9~~ GS													✓				
09-21-06	1245	soil	McCoy Gas Com DIE B1-31.5				✓	9 ~~10~~ GS			✓										✓				
09-20-06	0700	GW	20092006TB01		✓			~~10~~ GS																✓	

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	
09-22-06	10:30	Ashley Ager		9-22-06
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	1625

Remarks: Jack Frost B#2 MW-3: Only enough water in well to fill 2 VOAs

Hall Environmental Analysis Laboratory, Inc.

Date: *15-Dec-06*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0612120

Lab ID: 0612120-01 **Collection Date:** 12/5/2006 9:50:00 AM
Client Sample ID: Jack Frost B2 MW-4 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	73	5.0		µg/L	5	12/11/2006 10:35:44 PM
Toluene	6.4	5.0		µg/L	5	12/11/2006 10:35:44 PM
Ethylbenzene	62	5.0		µg/L	5	12/11/2006 10:35:44 PM
Xylenes, Total	130	15		µg/L	5	12/11/2006 10:35:44 PM
Surr: 4-Bromofluorobenzene	80.8	70.2-105		%REC	5	12/11/2006 10:35:44 PM

Lab ID: 0612120-02 **Collection Date:** 12/5/2006 11:25:00 AM
Client Sample ID: Jack Frost B2 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	12/11/2006 11:05:51 PM
Toluene	ND	1.0		µg/L	1	12/11/2006 11:05:51 PM
Ethylbenzene	ND	1.0		µg/L	1	12/11/2006 11:05:51 PM
Xylenes, Total	ND	3.0		µg/L	1	12/11/2006 11:05:51 PM
Surr: 4-Bromofluorobenzene	79.0	70.2-105		%REC	1	12/11/2006 11:05:51 PM

Lab ID: 0612120-03 **Collection Date:** 12/5/2006 10:58:00 AM
Client Sample ID: Jack Frost B2 MW-2R **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/11/2006 11:35:57 PM
Toluene	ND	1.0		µg/L	1	12/11/2006 11:35:57 PM
Ethylbenzene	ND	1.0		µg/L	1	12/11/2006 11:35:57 PM
Xylenes, Total	ND	3.0		µg/L	1	12/11/2006 11:35:57 PM
Surr: 4-Bromofluorobenzene	79.9	70.2-105		%REC	1	12/11/2006 11:35:57 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		

Hall Environmental Analysis Laboratory, Inc.

Date: *15-Dec-06*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0612120

Lab ID: 0612120-04 **Collection Date:** 12/5/2006 11:38:00 AM
Client Sample ID: Jack Frost B2 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	12/12/2006 12:06:05 AM
Toluene	ND	1.0		µg/L	1	12/12/2006 12:06:05 AM
Ethylbenzene	ND	1.0		µg/L	1	12/12/2006 12:06:05 AM
Xylenes, Total	ND	3.0		µg/L	1	12/12/2006 12:06:05 AM
Surr: 4-Bromofluorobenzene	79.0	70.2-105		%REC	1	12/12/2006 12:06:05 AM

Lab ID: 0612120-05 **Collection Date:** 12/5/2006 1:08:00 PM
~~**Client Sample ID:** OH Randel 7 MW-5~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	37	1.0		µg/L	1	12/12/2006 12:36:10 AM
Toluene	ND	1.0		µg/L	1	12/12/2006 12:36:10 AM
Ethylbenzene	ND	1.0		µg/L	1	12/12/2006 12:36:10 AM
Xylenes, Total	4.1	3.0		µg/L	1	12/12/2006 12:36:10 AM
Surr: 4-Bromofluorobenzene	81.1	70.2-105		%REC	1	12/12/2006 12:36:10 AM

Lab ID: 0612120-06 **Collection Date:** 12/5/2006 12:38:00 PM
~~**Client Sample ID:** OH Randel 7 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	12/12/2006 3:36:16 AM
Toluene	ND	1.0		µg/L	1	12/12/2006 3:36:16 AM
Ethylbenzene	ND	1.0		µg/L	1	12/12/2006 3:36:16 AM
Xylenes, Total	ND	3.0		µg/L	1	12/12/2006 3:36:16 AM
Surr: 4-Bromofluorobenzene	79.5	70.2-105		%REC	1	12/12/2006 3:36:16 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	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:** 0612120

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 0612120-02A MSD		*MSD*			Batch ID: R21754		Analysis Date: 12/12/2006 1:36:12 AM		
Benzene	17.92	µg/L	1.0	87.5	85.9	113	6.25	27	
Toluene	17.88	µg/L	1.0	87.7	86.4	113	4.33	19	
Ethylbenzene	17.30	µg/L	1.0	86.5	83.5	118	4.82	10	
Xylenes, Total	51.71	µg/L	3.0	86.2	83.4	122	4.61	13	
Sample ID: b 15		*MBLK*			Batch ID: R21754		Analysis Date: 12/11/2006 1:54:38 PM		
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: 5ML REAGENT BLA		*MBLK*			Batch ID: R21800		Analysis Date: 12/13/2006 8:26:25 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: 5ML REAGENT BLA		*MBLK*			Batch ID: R21831		Analysis Date: 12/14/2006 8:42:55 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 LCS II		*LCS*			Batch ID: R21754		Analysis Date: 12/12/2006 2:06:12 AM		
Benzene	18.26	µg/L	1.0	90.3	85.9	113			
Toluene	18.31	µg/L	1.0	91.6	86.4	113			
Ethylbenzene	17.98	µg/L	1.0	89.9	83.5	118			
Xylenes, Total	53.73	µg/L	3.0	89.6	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID: R21800		Analysis Date: 12/13/2006 4:33:03 PM		
Benzene	18.09	µg/L	1.0	90.4	85.9	113			
Toluene	17.99	µg/L	1.0	89.9	86.4	113			
Ethylbenzene	17.55	µg/L	1.0	87.7	83.5	118			
Xylenes, Total	52.58	µg/L	3.0	87.6	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID: R21831		Analysis Date: 12/14/2006 7:50:29 PM		
Benzene	17.78	µg/L	1.0	88.9	85.9	113			
Toluene	17.85	µg/L	1.0	89.2	86.4	113			
Ethylbenzene	17.33	µg/L	1.0	86.6	83.5	118			
Xylenes, Total	52.15	µg/L	3.0	86.9	83.4	122			
Sample ID: 0612120-02A MS		*MS*			Batch ID: R21754		Analysis Date: 12/12/2006 1:06:08 AM		
Benzene	19.07	µg/L	1.0	93.3	85.9	113			
Toluene	18.68	µg/L	1.0	91.7	86.4	113			
Ethylbenzene	18.16	µg/L	1.0	90.8	83.5	118			
Xylenes, Total	54.15	µg/L	3.0	90.2	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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name XTO ENERGY | Date and Time Received: 12/8/2006

Work Order Number 0612120 | Received by TLS

Checklist completed by Signature | Date Dec. 8, 06

Matrix | Carrier name Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? 2° *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: XTO Energy
Kim Champlin

Address: 2700 Farmington Blvd
Bldg I, Ste K
Farmington, NM

Phone #: 505 566 7954

Fax #:

Project Name: Ground Water

Project #:

Project Manager: Lisa Winn

Sampler: Ashley Ager

Sample Temperature: 0

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No. 0612120	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	8021 B BTEX				Air Bubbles or Headspace (Y or N)
12-5-06	0950	GW	Jack Frost B2	MW-4	✓			1													✓				
12-5-06	1125	GW	Jack Frost B2	MW-3	✓			2													✓				
12-5-06	1058	GW	Jack Frost B2	MW-2R	✓			3													✓				
12-5-06	1138	GW	Jack Frost B2	MW-1	✓			4													✓				
12-5-06	1308	GW	OH Randel 7	MW-5	✓			5													✓				
12-5-06	1238	GW	OH Randel 7	MW-3	✓			6													✓				
12-5-06	1303	GW	OH Randel 7	MW-4	✓			7													✓				
12-5-06	1413	GW	McDaniel Gas Com	BIE MW-1	✓			8													✓				
12-5-06	1510	GW	McDaniel Gas Com	BIE MW-2	✓			9													✓				
12-5-06	1517	GW	McDaniel Gas Com	BIE MW-3	✓			10													✓				
12-5-06	0700	GW	05122006-TB01	TRIP Blank	✓			11													✓				
12-5-06	1550	GW	Sullivan Gas Com	DI MW-1R	✓			12													✓				

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	
12-7-06	1500	Ashley Ager		12/8/06
				730
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

Remarks:
* Please copy results to ala@lodestarservices.com

B0114

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator
Amoco Production Company

3. Address and Telephone No.
200 Amoco Court, Farmington, N.M. 87401 Tel: (505) 326-9200

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
NW/NW SEC. 27, T27N, R10W NMPM

5. Lease Designation and Serial No.
SF-077951 A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.
JACK FROST B #2

9. API Well No.
3004506295

10. Field and Pool, or Exploratory Area
DAKOTA

11. County or Parish, State
SAN JUAN, N.M.

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other Pit closure	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Pit closure verification - see attached documentation.

SEPARATOR PIT - ABANDONED

14. I hereby certify that the foregoing is true and correct
Signed R A Shaw Title Enviro. Coordinator Date 10/14/94

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

B0114

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 JACK FROST B #2

Location: Unit or Qtr/Qtr Sec D Sec 27 T 27N R 10 W County SAN JUAN

Pit Type: Separator X Dehydrator ___ Other ___

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

Pit Location: (Attach diagram)
Pit dimensions: length 25', width 25', depth 15'
Reference: wellhead X, other ___
Footage from reference: 150
Direction from reference: 45 Degrees ___ East North X of X 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)	0
	RANKING SCORE (TOTAL POINTS):	20

Date Remediation Started: 8-5-94 **Date Completed:** 8-25-94

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 400
Landfarmed ___ Insitu Bioremediation ___
Other COMPOST

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

General Description Of Remedial Action:
Excavation. ON-SITE COMPOST PILE CLOSURE RECORD SUBMITTED WITH BLOW PIT CLOSURE. BLOW PIT & COMPOST PILE CLOSURE APPROVED BY NMOCD WITH LETTER DATED 12/12/96 (ATTACHED.) SEPARATOR PIT CLOSURE DENIED BY NMOCD WITH LETTER DATED 12/5/96 (ATTACHED) - DUE TO GROUNDWATER CONTAMINATION EXCEEDING NMWQCC STANDARDS.

Ground Water Encountered: No ___ Yes X Depth 15'

Final Pit: Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)
Sample location see Attached Documents
Sample depth 15'
Sample date 8-25-94 Sample time ___
Sample Results
Benzene(ppm) ND
Total BTEX(ppm) 0.018
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 10/14/94
SIGNATURE B J Shaw
PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

10-7-94 BW

CLIENT: Amoco	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: B 0114 C.O.C. NO: 3834-3842 ENVIROTECH

FIELD REPORT: PIT CLOSURE VERIFICATION

LOCATION: NAME: JACK FROST B WELL #: 2 PIT: SEP.
QUAD/UNIT: D SEC: 27 TWP: 27N RNG: 10W BM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: NW/NW CONTRACTOR: EPC

DATE STARTED: 8-5-94
DATE FINISHED: 8-25-94
ENVIRONMENTAL SPECIALIST: F.M. - ENVIROTECH

EXCAVATION APPROX. 25 FT. x 25 FT. x 15 FT. DEEP. CUBIC YARDS: 400
DISPOSAL FACILITY: ON SITE REMEDIATION METHOD: COMPOST
LAND USE: RANGE LEASE: SF-077951 A FORMATION:

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 155 FEET N45°W FROM WELLHEAD.
DEPTH TO GROUNDWATER: 15' NEAREST WATER SOURCE: > 1000' NEAREST SURFACE WATER: > 1000'
NMOCD RANKING SCORE: 20 NMOCD TPH CLOSURE STD: 100 PPM

SOIL AND EXCAVATION DESCRIPTION: PIT DISPOSITION: ABANDONED

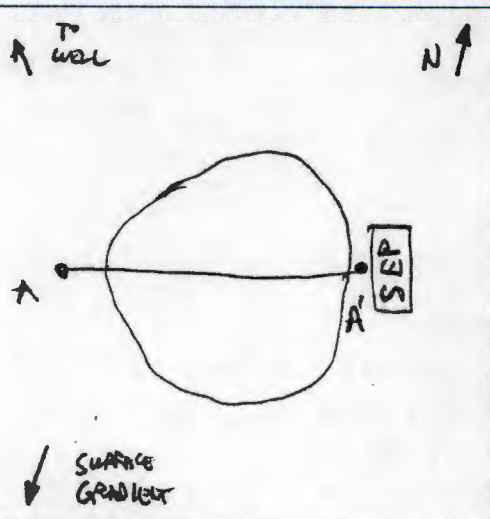
PIT BACKFILLED WITH CLEAN SOIL AS OF 10-7-94.
ENVIROTECH PERFORMED ORIGINAL CLOSURE - FIELD REPORT NEVER PRODUCED.
R.E. O'NEILL MET FRANK McDONALD ON SITE TO PRODUCE FIELD REPORT.

FIELD 418.1 CALCULATIONS

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

SCALE
0 5 10 FT

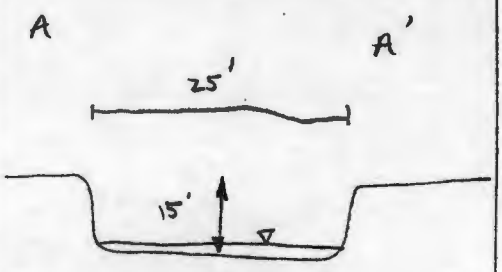
PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1	
2	
3	
4	
5	
LAB	SAMPLES
PIT WATER	6 DEP

PIT PROFILE



TRAVEL NOTES: CALLOUT: ONSITE:

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

Client:	AMOCO	Project #:	92140
Sample ID:	ground water	Date Reported:	08-15-94
Laboratory Number:	7765	Date Sampled:	08-05-94
Sample Matrix:	Water	Date Received:	08-08-94
Preservative:	HgCl & Cool	Date Analyzed:	08-11-94
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	48	0.3
Toluene	411	0.3
Ethylbenzene	ND	0.2
p,m-Xylene	55.9	0.3
o-Xylene	35.2	0.3

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	74 %
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: JACK FROST B # 2 A0079 SEPARATOR PIT

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:	Groundwater	Date Reported:	09-01-94
Laboratory Number:	7847	Date Sampled:	08-25-94
Sample Matrix:	Water	Date Received:	08-25-94
Preservative:	HgCl & Cool	Date Analyzed:	08-29-94
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.3
Toluene	ND	0.3
Ethylbenzene	ND	0.2
p,m-Xylene	ND	0.3
o-Xylene	18.0	0.3

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	96 %
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: Jack Frost B #2 ground Water Pit A0079 SEPARATOR PIT

Analyst

Review

Pit # 40079

034

B0114

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
Amoco 92140	Jack Frost B #2	
Sampler: (Signature)	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8020)						Remarks
Ground Water	8/5/94	6:43	7765	Water	2	—						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	8/5/94	16:40		8/8/94	8:00
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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(505) 632-0615

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Pit # A0079

CHAIN OF CUSTODY RECORD

BO 114

Client/Project Name	Project Location
Amoco 92140	Jack Frost B #2

Sampler: (Signature)	Chain of Custody Tape No.
F McDonald	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8020)						Remarks
Ground Water	8/25/94	1100	7847	Water	2	✓						Sep pit

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
F McDonald	8/25/94	1333	Rex Hoffin	25 Aug 94 1500	1500
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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Farmington, New Mexico 87401
(505) 632-0615

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