3RP-414

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XTO ENERGY

Annual Groundwater Remediation Reports For Year 2008

April 2009

XTO ENERGY

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April 13, 2009

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) herein submits the Annual Groundwater Remediation Reports for year 2008, in accordance with the New Mexico Oil Conservation Division (NMOCD) approved Groundwater Management Plan (GMP). Enclosed are summary reports with analytical data, summary tables, site maps, topographic maps, potentiometric surface diagrams and recommendations/proposed actions for:

- Bruington Gas Com #1- 3RP106
- EJ Johnson C #1E- 3RP385
- Federal Gas Com #H1- 3RP110
- Frost, Jack B #2- 3RP416
- McCoy GC D #1E- 3RP414
- OH Randel #7- 3RP386
- PO Pipken #3E- 3RP409
- Rowland Gas Com #1- 3RP124
- Valdez A #1E- 3RP134

We have also enclosed an Annual Groundwater Report for three sites that meet the closure requirements outlined in the GMP. XTO respectfully requests closure of:

- Carson Gas Com #1E- 3RP315
- Snyder Gas Com #1A- 3RP126
- Sullivan Gas Com D #1- 3RP131

In previously submitted reports, fifteen sites met the closure requirements outlined in the GMP and XTO requested closure of those sites in 2006, 2007 and 2008. The reports for the below listed sites are being submitted again for your review.

- Abrams J #1- 3RP100
- Armenta Gas Com C #1E- 3RP394
- Baca Gas Com A #1A- 3RP104
- Bergin Gas Com #1E- 3RP105
- Garcia Gas Com B #1- 3RP111
- Haney Gas Com B #1E- 3RP113
- Hare Gas Com B #1- 3RP413
- Hare Gas Com B #1E- 3RP384
- Hare Gas Com I #1- 3RP412
- Masden Gas Com #1E- 3RP120
- McDaniel Gas Com B #1E- 3RP121
- Romero Gas Com A #1- 3RP123
- State Gas Com BS #1- 3RP127
- Stedje Gas Com #1- 3RP128
- Sullivan Frame A #1E- 3RP130

Thank you for your review of the reports. XTO looks forward to hearing from you regarding closure requests and proposed remedial actions. If you have any questions please do not hesitate to contact me at (505) 333-3100.

Respectfully,

Martin Nee
EH & S Manager
San Juan Division

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

McCoy CC D #1E

XTO ENERGY INC.

ANNUAL GROUNDWATER REPORT

2008

McCoy Gas Com D #1E
3RP-414
(E) SECTION 28 – T30N – R12W, NMPM
SAN JUAN COUNTY, NEW MEXICO

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

April 2009

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Attachment 2:	Pit Closure (02/06)
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Attachment 4:	2008 Laboratory Reports

2008 XTO GROUNDWATER REPORT

McCOY GAS COM D #1E
3RP-414

SITE DETAILS

LEGALS - TWN: 30N **RNG:** 12W **SEC:** 28 **UNIT:** E
OCD HAZARD RANKING: 30 **LAND TYPE:** FEE
LATITUDE: 36.78668 **LONGITUDE:** 108.10751

INTRODUCTION

XTO Energy Inc. (XTO) acquired the McCoy Gas Com D #1E well site from Amoco Production Company in January 1998. This is a gas producing well in the Basin Dakota formation and is currently active. There is a irrigation ditch directly south of the location. A site map and topographic map are presented as Figures 1 and 2.

HISTORY

In February 2006, while removing a 95 barrel steel separator pit tank, XTO discovered a historical earthen separator pit that was included in a 1992 site assessment (Attachment 1). Impacted soil was excavated to a depth of approximately 23 feet and an estimated 750 cubic yards of impacted soil was removed (Attachment 2). The floor of the excavation was sampled and no groundwater was encountered. Monitoring well MW-1 was installed in September 2006 and sampled in October 2006. Bore/Test Hole reports are presented as Figures 3-4 representing drilling that occurred on site in 2006. Laboratory results for groundwater samples from MW-1 revealed benzene, toluene, ethyl benzene and total xylenes (BTEX) constituents above New Mexico Water Quality Control Commission (WQCC) standards.

The 2006 annual groundwater report submitted to the OCD in February 2007, proposed the installation of two down gradient monitoring wells to further delineate impact to groundwater and sampling in accordance with New Mexico Oil Conservation Division (OCD) approved Groundwater Management Plan.

XTO installed two down gradient monitoring wells (MW-2 and MW-3) in May 2007. Figures 5-6 are presented for the monitoring wells installed during 2007. All three monitoring wells were sampled in May 2007. Laboratory results of groundwater samples revealed elevated BTEX concentrations in MW-1 (source area) but BTEX constituents were not detected above the laboratory equipment detection limits (0.2 ug/L) in monitoring wells MW-2 and MW-3.

In a remediation work plan dated October 31, 2007 and submitted to OCD, XTO proposed installation of ORC socks in monitoring well MW-1 (Attachment 3). In November 2007 ORC socks that produce a controlled release of oxygen into the groundwater for up to 12 months were installed in MW-1. The socks hang the vertical length of the water column within the monitoring well.

The 2007 annual groundwater report submitted to the OCD in February 2008, proposed annual sampling of MW-1 to verify dissolved oxygen concentrations, annual sampling of MW-2 and MW-3 to confirm no migration and continued monitoring of water levels to assess gradient.

2008 XTO GROUNDWATER REPORT

A summary of laboratory results from historical and current groundwater monitoring is presented as Table 1. A summary of general water quality data from 2006 is presented as Table 2. Copies of the laboratory data sheets and associated quality assurance/quality control data for 2008 are presented as Attachment 4.

METHODOLOGY

ORC socks were removed from MW-1 and annual samples of groundwater were collected from monitoring wells in May 2008.

Water Level Measurements

Static groundwater level monitoring includes recording depth to groundwater measurements with a Keck oil/water interface probe. The interface probe is decontaminated with Alconox™ soap and rinsed with de-ionized water prior to each measurement. These data are recorded as Depth to Water (DTW) and Total Depth (TD) in feet on Table 1.

Groundwater Sampling

Prior to sampling at monitoring wells, depth to groundwater and total depth of wells is measured with a Keck oil/water interface probe. Presence of any free-phase crude oil is also investigated using the interface probe. The interface probe is decontaminated with Alconox™ soap and rinsed with de-ionized water prior to each measurement. The volume of water in the wells is calculated, and a minimum of three casing volumes of water is purged from each well using a disposable bailer or a permanent decontaminated PVC bailer. As water is extracted, pH, electric conductivity and temperature are monitored. Wells are purged until these properties stabilize, indicating that the purge water is representative of aquifer conditions. Stabilization is defined as three consecutive stable readings for each water property (±0.4 units for pH, ±10 percent for electric conductivity and ±2° C for temperature). All purge water is disposed of into tanks on site.

Once each monitoring well is properly purged, groundwater samples are collected by filling at least two 40-millititer (ml) glass vials. The pre-cleaned and pre-preserved (with hydrochloric acid or mercuric chloride) vials are filled and capped with no air inside to prevent degradation of the sample. Samples are labeled with the date and time of collection, well designation, project name, collector's name and parameters to be analyzed. They are immediately sealed and packed on ice. The samples are shipped to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico in a sealed cooler via bus before designated holding times expire. Proper chain-of-custody (COC) procedures are followed with logs documenting the date and time sampled, sample number, type of sample, sampler's name, preservative used, analyses required and sampler's signature.

Groundwater Contour Maps

Top of casing well elevations are surveyed using a surveyor's level; and groundwater elevations obtained from monitoring wells during site visits are used to draft groundwater contour maps. Contours are inferred based on groundwater elevations obtained and observation of physical characteristics at the site (topography, proximity to irrigation ditches, etc.).

2008 XTO GROUNDWATER REPORT

RESULTS

Laboratory analytical results for MW-1 reveal concentrations of toluene, ethyl benzene, and total xylenes exceeding WQCC standards. Monitoring wells MW-2 and MW-3 are non-detect for BTEX constituents.

The gradient map from May 2007 (Figure 7) represents the first contour map drawn for this site. Groundwater was expected to flow toward the irrigation ditch directly south of the well site. However, the data indicates flow in the opposite direction. The irrigation ditch, which was running at full capacity in May 2007, appears to have exerted local control over groundwater at the site as it pushed water away from its course. Once the water level in the ditch leveled out in July 2007, flow reversed direction and ran south, which is anticipated based on local topography. In September 2007, groundwater flow shifted to an easterly direction and was much flatter as compared to July 2007. Water levels in the ditch were relatively high because the ditch was being flushed out upstream. As a result, local groundwater was again being pushed away from the ditch. In November 2007, groundwater flow was running towards the adjacent irrigation ditch, which was completely dry for the winter season. The same pattern was observed in January and May 2008. Figures 8-9 illustrate the estimated groundwater gradients for 2008.

CONCLUSIONS

Groundwater analysis from MW-1 shows elevated levels of BTEX constituents.

RECOMMENDATIONS

Replace ORC socks in MW-1.

Annual sampling will continue at MW-1 until dissolved oxygen concentrations show a significant increase.

Annual sampling will continue at MW-2 and MW-3 to confirm no migration.

TABLE 1

XTO ENERGY INC. GROUNDWATER LAB RESULTS

MCCOY GC D #1E- SEPARATOR PIT
UNIT E, SEC. 28, T30N, R12W

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
16-Oct-06	MW #1	32.86	40.00		22	2500	2700	19000
16-May-07		30.69	39.75		30	760	1700	24000
13-May-08		31.97	39.75		ND	640	540	11000
16-May-07	MW #2	30.56	36.50		ND	ND	ND	ND
13-May-08		31.98	36.50		ND	ND	ND	ND
16-May-07	MW #3	21.55	32.85		ND	ND	ND	ND
12-May-08		22.55	32.95		ND	ND	ND	ND
NMWQCC GROUNDWATER STANDARDS					10	750	750	620

TABLE 2

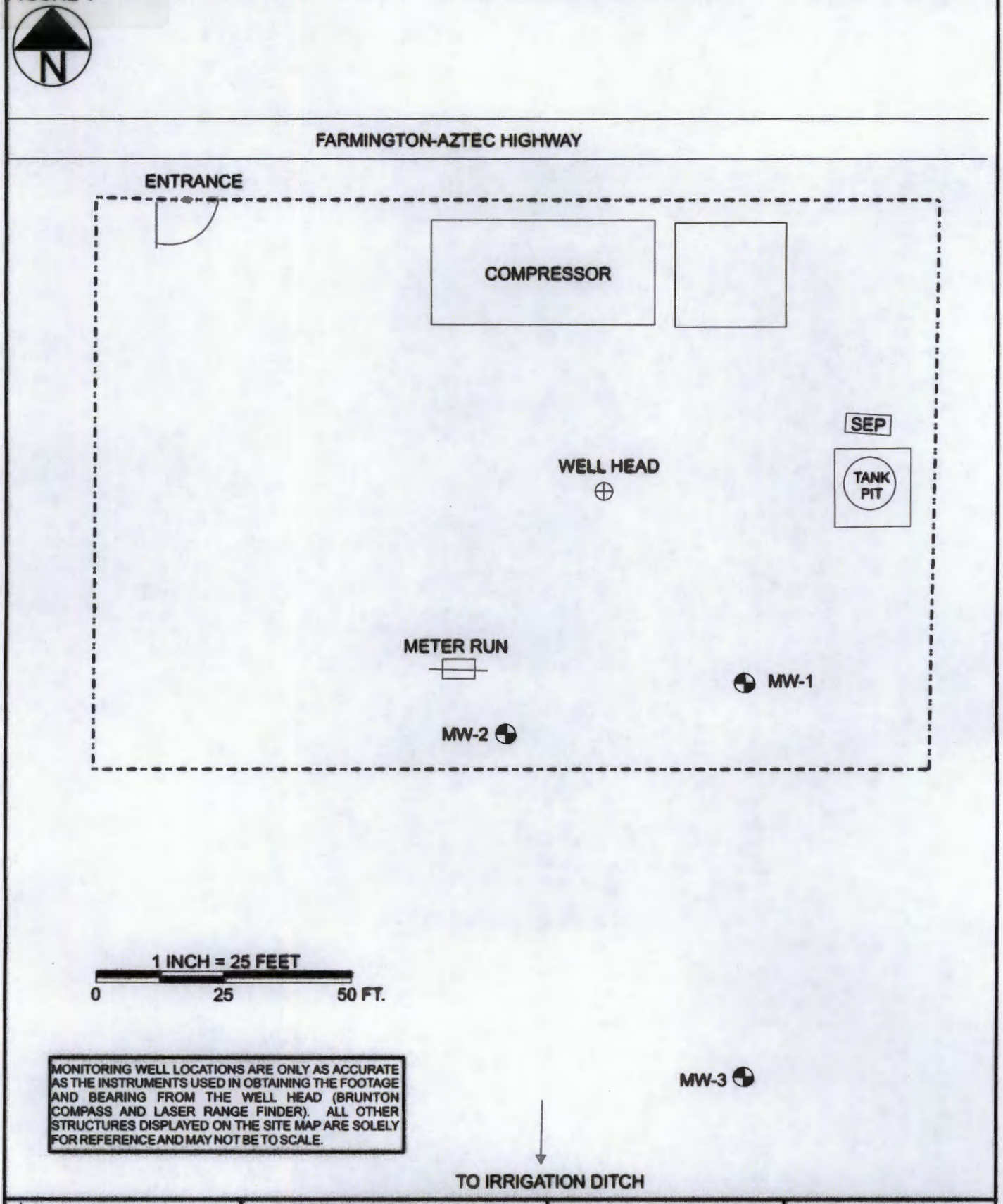
XTO ENERGY INC. GROUNDWATER LAB RESULTS

McCOY GAS COM D #1E
UNIT E SEC. 28, T30N, R12W

Sample Date: October 16, 2006

PARAMETERS	MW #1			UNITS
LAB Ph				s.u.
LAB CONDUCTIVITY @ 25 C	580			umhos/cm
TOTAL DISSOLVED SOLIDS @ 180 C	360			mg/L
TOTAL DISSOLVED SOLIDS (Calc)				mg/L
SODIUM ABSORPTION RATIO				ratio
TOTAL ALKALINITY AS CaCO3	290			mg/L
TOTAL HARDNESS AS CaCO3				mg/L
BICARBONATE AS HCO3	290			mg/L
CARBONATE AS CO3	ND			mg/L
HYDROXIDE AS OH				mg/L
NITRATE NITORGEN	ND			mg/L
NITRITE NITROGEN	ND			mg/L
CHLORIDE	14			mg/L
FLUORIDE	0.62			mg/L
PHOSPHATE	ND			mg/L
SULFATE	11			mg/L
IRON				mg/L
CALCIUM	77			mg/L
MAGNESIUM	13			mg/L
POTASSIUM	1.30			mg/L
SODIUM	20			mg/L
CATION/ANION DIFFERENCE				%

FIGURE 1



Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	MCCOY GAS COM D #1E SW/4 NW/4 SEC. 28, T30N, R12W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 09/28/07	SITE MAP 09/27/07

FIGURE 2

XTO ENERGY INC.
McCOY GAS COM D No. 1E
SW/4 NW/4 SEC. 28E, T-30-N, R-12-W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO
McCOY GAS COM D No. 1E
LAT: 36.78668
LONG: 108.10751
FARMINGTON
ANIMAS
RIVER
Bald Mesa
Flora Vist
DITCH
TERRELL
Gas Wells
Wyper Tank
Gravel Pit
Memory Gardens
Country Club
TN 11°MN
0 1 MILE
0 1000 FEET 0 500 1000 METERS
Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

FIGURE 3

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: 1
Well #: NA
Page: 1 of 2
Project Number:
Project Name: XTO McCoy
Project Location: McCoy Gas Com D 1E

Borehole Location: 36° 47.196' N, 108° 06.469' W
GWL Depth: NA
Drilled By: Envirotech
Well Logged By: Ashley Ager
Date Started: 9/21/2006
Date Completed: 9/21/2006

Drilling Method: Hollow Stem Auger and TUBEX
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0		0-22'	cuttings	Brown, poorly sorted gravelly sand with occasional cobbles. Fill.	0	Fast
5		7.5-8'		Large cobble (able to get past with auger)		Slow
10						
15		18'	cuttings	increasing amounts of cobbles		Steady
20						

Comments: No samples collected in fill. Hole bored in center of pit. Previous notes and account from operator (Tony Espinoza) indicate fill to ~22'

Geologist Signature: Ashley L. Ager

RECORD OF SUBSURFACE EXPLORATION

LodeStar Services
P.O. Box 4466
Durango, CO 81302
303-917-6288

Borehole #: 1
Well #: NA
Page: 2 of 2
Project Number:
Project Name: XTO McCoy
Project Location: McCoy Gas Com D 1E

Borehole Location: 36° 47.196' N, 108° 06.469' W
GWL Depth: NA
Drilled By: Envirotech
Well Logged By: Ashley Ager
Date Started: 9/21/2006
Date Completed: 9/21/2006

Drilling Method: Hollow Stem Auger and TUBEX
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
20						Refusal at 20'. Switch to TUBEX
		22-26'	cuttings	Black, coarse, poorly sorted sand with 40% cobbles. Strong HC odor, dry	62.48	Steady Pounding
25					208.5	
		26-28'	cuttings	Gray, coarse, poorly sorted sand with 50% cobbles, dry	169.8	
		28-31.5'	cuttings	Brownish gray, coarse sand and cobble fragments	188.9	
30					83.2	
					71.2	Stop and sample
35						
40						

Comments: All samples warmed for at least 10 mins in truck prior to using PID for air monitoring

Geologist Signature: Ashley L Ager

FIGURE 4

RECORD OF SUBSURFACE EXPLORATION

LodeStar Services
P.O. Box 4466
Durango, CO 81302
303-917-6288

Borehole #: 2
Well #: NA
Page: 1 of 2
Project Number:
Project Name: XTO McCoy
Project Location: McCoy Gas Com D 1E

Borehole Location: 36° 47.196' N, 108° 06.468' W
GWL Depth: 34'
Drilled By: Envirotech
Well Logged By: Ashley Ager
Date Started: 9/21/2006
Date Completed: 9/22/2006

Drilling Method: TUBEX
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0		0-5'	cuttings	Brown, poorly sorted gravelly sand, coarse grained, dry w/occasional cobbles (Fill)		Steady and Fast
5		5-5.5'	cuttings	Greenish-gray shale	0	
		5.5-10'	cuttings	Brown, poorly sorted gravelly sand, coarse grained, dry w/occasional cobbles (Fill)	0	
10		10-12'	cuttings	Reddish brown silty sand and gravel, still cobbly, damp, v. poorly sorted sand w/silty matrix	0	Fast
		12-30'	cuttings	Brown, coarse sand, mainly cobbles, damp, some odor, v. poorly sorted	89.2	
15					138.6	
20					296.8	

Comments:

Geologist Signature: Ashley L Ager

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: 2
Well #: NA
Page: 2 of 2
Project Number:
Project Name: XTO McCoy
Project Location: McCoy Gas Com D 1E

Borehole Location: 36° 47.196' N, 108° 06.469' W
GWL Depth: 34'
Drilled By: Envirotech
Well Logged By: Ashley Ager
Date Started: 9/21/2006
Date Completed: 9/22/2006

Drilling Method: TUBEX
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
20						
					302.9	
					180.4	
25					136.5	
					202.3	
					219.0	
30					452.9	
					482.2	
		32.5-37'	cuttings	Grayish green coarse sand w/gravel, poorly sorted sub-rounded, very strong odor Wet soil at 34'.	429.7	Fast
35				Saturated cuttings at 35', water		Water spraying out of hole
		37-40'	cuttings	V. Coarse sand, poorly sorted, sub-rounded to sub-angular, wet, varying mineralogies, no cobbles	274	Fast
40						

Comments:

Geologist Signature: Ashley L Ager

FIGURE 5

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: 3
Well #: MW-2
Page: 1 of 3
Project Number:
Project Name: XTO Ground Water
Project Location: McCoy Gas Com D #1E

Borehole Location: 36° 47.194' N, 108° 06.474' W
GWL Depth: 32.5
Drilled By: Enviro-Drill
Well Logged By: Ashley Ager
Date Started: 05/02/07
Date Completed: 05/08/07

Drilling Method: ODEX and Hollow Stem Auger
Air Monitoring Method: NA

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0		0-9	cuttings	fine to very coarse fragments of cobbles in returns. Very slow progress, small amount of cuttings		Very Slow
5						
		9'		increase in cutting volume, fine to very coarse fragments of cobbles, lighter color		slight increase in penetration rate
10		12'		decrease in cutting volume		very slow
15						
20						

Comments: Penetration rate extremely slow trying to pound through cobbles

Geologist Signature: Ashley L. Ager

RECORD OF SUBSURFACE EXPLORATION

LodeStar Services
P.O. Box 4466
Durango, CO 81302
303-917-6288

Borehole #: 3
Well #: MW-2
Page: 2 of 3

Project Number:
Project Name: XTO Ground Water
Project Location: McCoy Gas Com D #1E

Borehole Location: 36° 47.194' N, 108° 06.474' W
GWL Depth: 32.5
Drilled By: Enviro-Drill
Well Logged By: Ashley Ager
Date Started: 05/02/07
Date Completed: 05/08/07

Drilling Method: ODEX and Hollow Stem Auger
Air Monitoring Method: NA

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
20		20'	cuttings	finer particles in cuttings, more sand content		Very slow
				significantly more sand content (~40% sand, 60% cobble fragments)		Very slow
25		25'				
				no sand, only cobble fragments, extremely slow penetration rate - hardly any downward progress in 1 hour		Stop for day at 1730; leave equipment in hole on site;
		29'				begin 05/03/07 at 0830: water in hole at startup, but quickly blown out
30				wet sand covering cobble fragments, water coming out of hole		Very slow
		32.5'		no penetration for over 2 hours - removing pipe to assess equipment		1630: bit teeth worn completely down, pipe threads sheared in one section, one bent rod on inner tube.
		33.5'				
35				Use auger to drill out hole beneath cobbles. No cuttings, but occasionally some wet sand		Auger is relatively fast - rig chokes when can't turn on cobbles, but penetration is steady
		35-40'				
40						

Comments: Pulled all pipe at 13:30 on 05/03/07 and discovered damaged equipment. Worked rest of the day repairing equipment. Startup again at 28' on 05/04/07. Moved 1 foot, before fluted disc failed on drill rig - requires machine shop for repair. Leave site at 11:15 and return on 05/08/07: begin drilling at 33', some rod stuck in outer tubing. Inject 14 gallons of water to loosen. Pull all rod and outer tubing and begin augering to finish hole

Geologist Signature: Ashley L. Ager

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: 3
Well #: MW-2
Page: 3 of 3
Project Number:
Project Name: XTO Ground Water
Project Location: McCoy Gas Com D #1E

Borehole Location: 36° 47.194' N, 108° 06.474' W
GWL Depth: 32.5
Drilled By: Enviro-Drill
Well Logged By: Ashley Ager
Date Started: 05/02/07
Date Completed: 05/08/07

Drilling Method: ODEX and Hollow Stem Auger
Air Monitoring Method: NA

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
40 45 50 55 60		40-45	cuttings	Wet coarse sand and cobble fragments		Slow, but steady

Comments: TD reached at 45', auger bit missing all four teeth

Geologist Signature: Ashley L. Ager

FIGURE 6

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: 4
Well #: MW-3
Page: 1 of 2
Project Number:
Project Name: XTO Ground Water
Project Location: McCoy Gas Com D #1E

Borehole Location: 36° 47.181' N, 108° 06.462' W
GWL Depth: 24'
Drilled By: Enviro-Drill
Well Logged By: Ashley Ager
Date Started: 05/08/07
Date Completed: 05/09/07

Drilling Method: ODEX and Hollow Stem Auger
Air Monitoring Method: NA

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0		0-7'	cuttings	Loose fine to coarse sand and cobbles, tan, poorly sorted, subangular to subrounded, damp		Begin with auger - penetration only to 7'. Switch to ODEX
5		7-12'		sand and cobble fragments in returns		steady, but very hard
10		12-15'		increase in sand content, damp sand		slow
15		15-17'		less sand content, mainly dark cobble fragments, very angular		very slow
20		17-23'		damp sand and cobble fragments. Sand content ~ 50%		slightly fast progress, through most of the cobble layer

Comments:
Penetration rate is very slow trying to pound through cobbles

Geologist Signature: Ashley L. Ager

RECORD OF SUBSURFACE EXPLORATION

LodeStar Services
P.O. Box 4466
Durango, CO 81302
303-917-6288

Borehole #: 4
Well #: MW-3
Page: 2 of 2
Project Number:
Project Name: XTO Ground Water
Project Location: McCoy Gas Com D #1E

Borehole Location: 36° 47.181' N, 108° 06.462' W
GWL Depth: 24'
Drilled By: Enviro-Drill
Well Logged By: Ashley Ager
Date Started: 05/08/07
Date Completed: 05/09/07

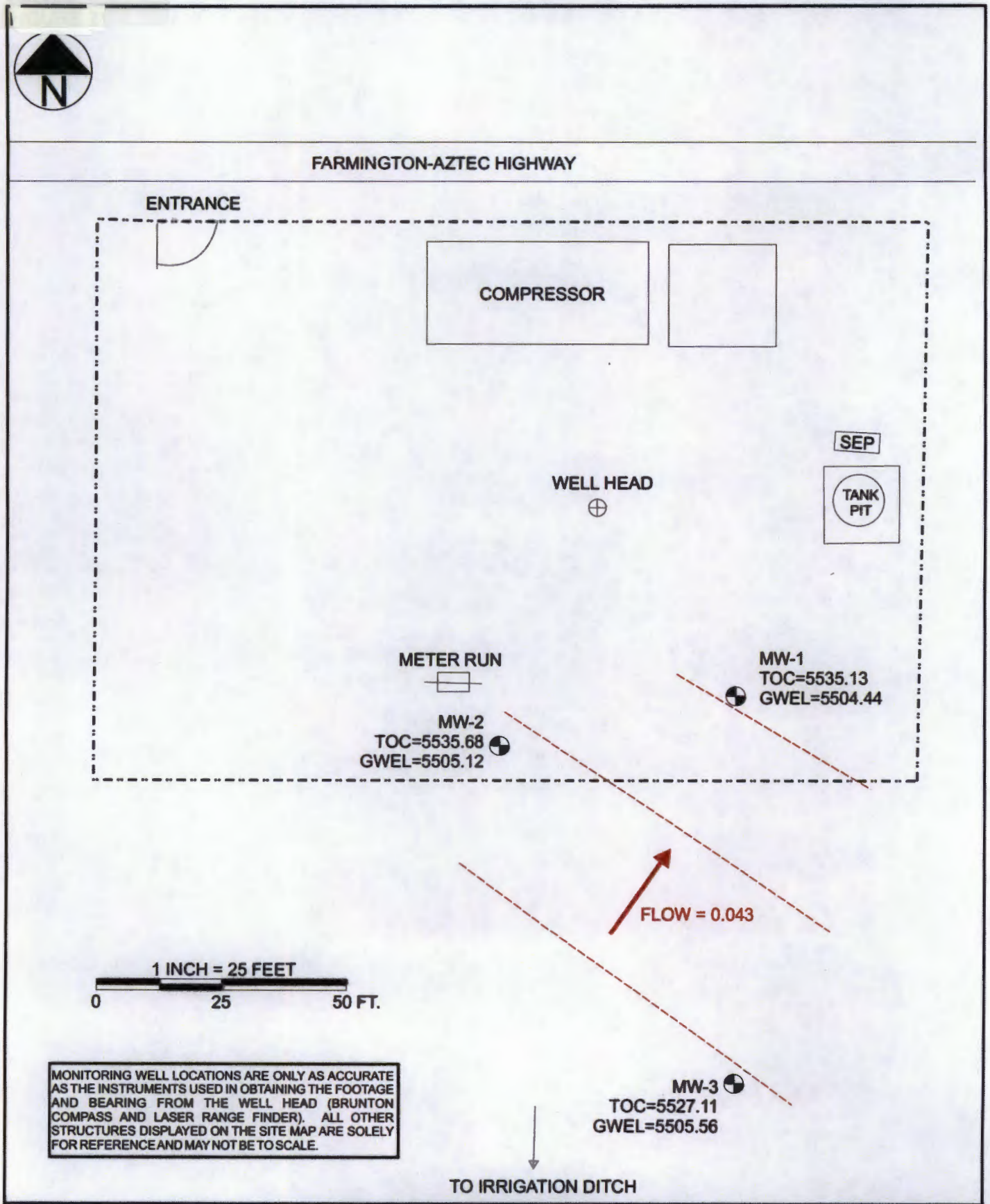
Drilling Method: ODEX and Hollow Stem Auger
Air Monitoring Method: NA

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
20		23-25'		wet sand and cobble fragments, water pouring out of hole at 24'		slow, but steady
25						faster penetration rate
30		30-32'		lots of water and mud, few cobble fragments, mainly silty sand, completely saturated		
35						
40						

Comments: TD at 32', but inner rod stuck in outer tubes. Lost part of hole to cave in while attempting to retrieve outer rod. Set up auger to repair hole. Auger down to 32' again - no cuttings

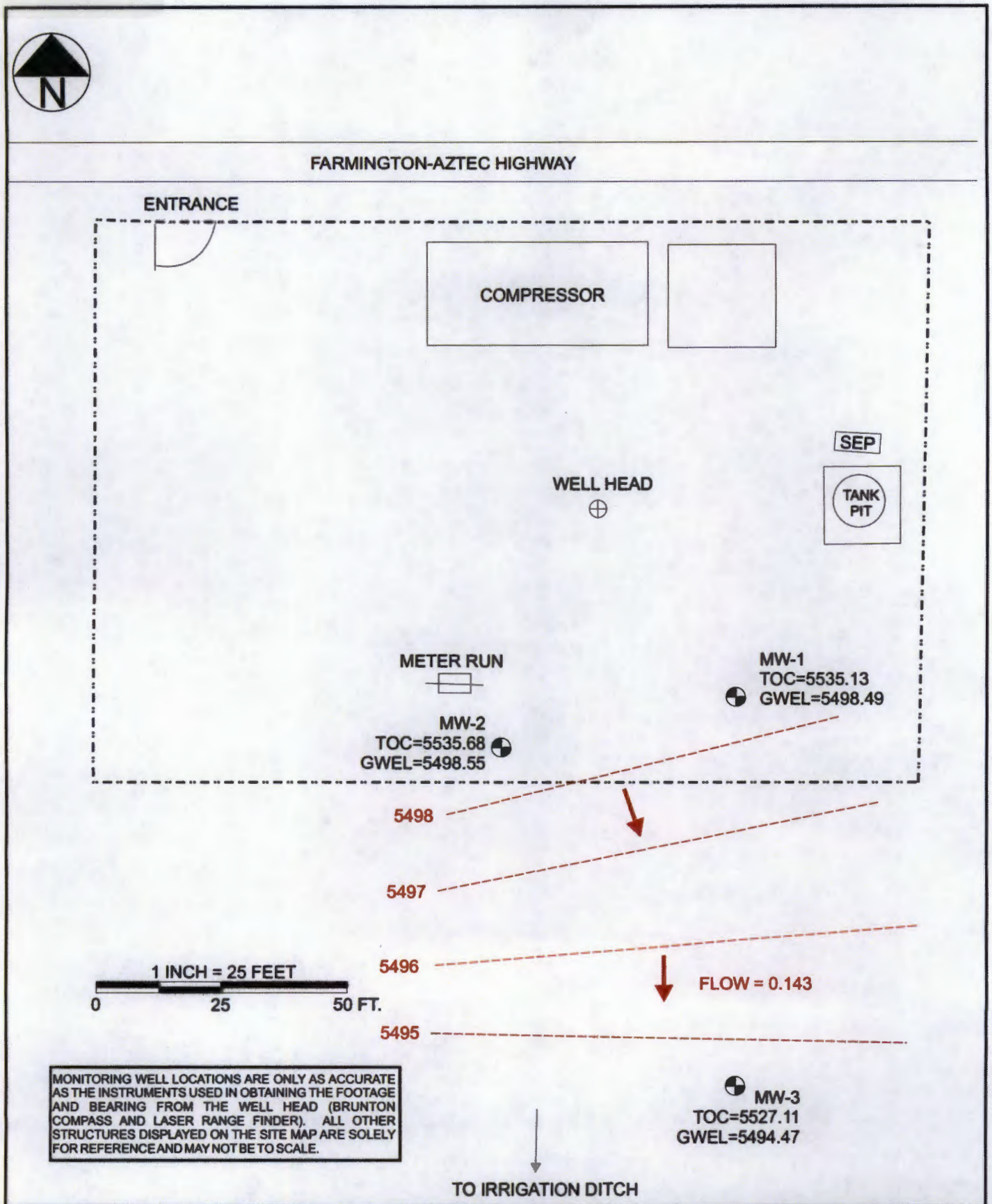
Geologist Signature: Ashley L. Ager

FIGURE 7



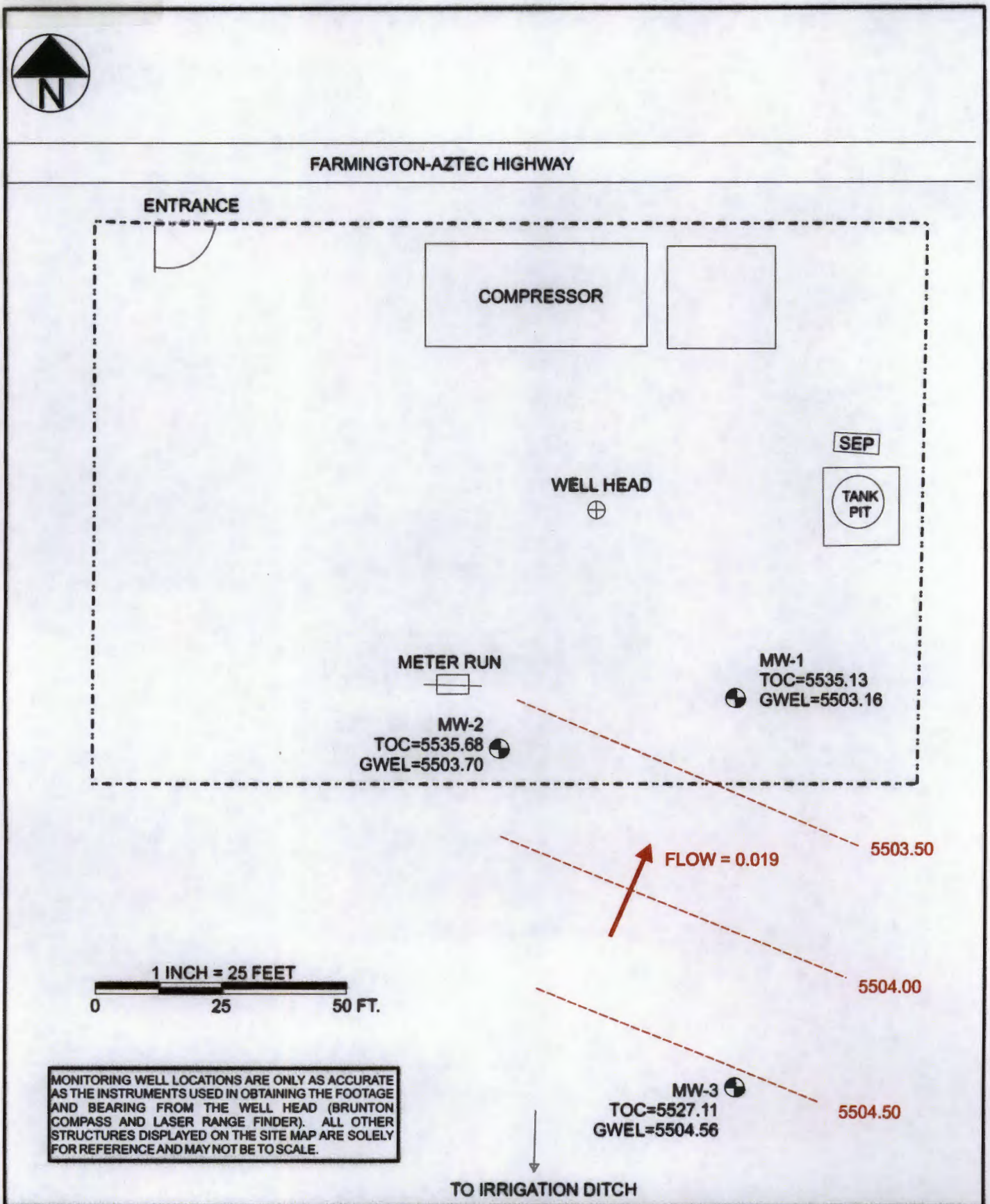
Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	MCCOY GAS COM D #1E SW/4 NW/4 SEC. 28, T30N, R12W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 05/31/07	GROUNDWATER GRADIENT MAP 05/16/07

FIGURE 8



Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	MCCOY GAS COM D #1E SW/4 NW/4 SEC. 28, T30N, R12W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 01/11/08	GROUNDWATER GRADIENT MAP 01/08/08

FIGURE 9



Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	MCCOY GAS COM D #1E SW/4 NW/4 SEC. 28, T30N, R12W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED:05/14/08	GROUNDWATER GRADIENT MAP 05/12/08

ATTACHMENT 1

ENVIROTECH Inc.

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

94022

FIELD REPORT: SITE ASSESSMENT

JOB No: 92140
PAGE No: 1 of 1

PROJECT: PIT ASSESSMENTS & CLOSURE
CLIENT: AMOCO PRODUCTION COMPANY
CONTRACTOR: ENVIROTECH, INC.
EQUIPMENT USED: EXCAVATOR

DATE STARTED: 4-24-92
DATE FINISHED: 4-24-92
ENVIRO. SPCLT: MKL
OPERATOR: MS
ASSISTANT: DV

LOCATION: LSE: McCOY G.C. WELL: "D" 1E QD: SW/4 NW/4 (E)
SEC: 28 TWP: 30N RNG: 12W PM: NM CNTY: SJ ST: NM PIT: SEP. PIT

LAND USE: RURAL RESIDENTIAL & COMMERCIAL (FLEA MARKET TO EAST)
SURFACE CONDITIONS: STEEL DOUBLE LINED TANK W/ COVER (12'DIA X 5') BELOW GRADE

FIELD NOTES & REMARKS: LOCATED 70' SOUTH & 30' EAST OF WELL HEAD. SOIL CONDITIONS: BROWN SILTY SAND TO GRAVEL, MOIST, DENSE (POSSIBLE FILL). PIT LOCATED IN SOUTH EAST CORNER OF LOCATION ABOVE DRAINAGE TO SOUTH. APPEARS THAT WELL LOCATION HAS 20 ± FEET OF FILL. IRRIGATION DITCH UNLINED FLOWING WEST, 150' SOUTH OF LOCATION. TANK BEDDED IN PEA GRAVEL.

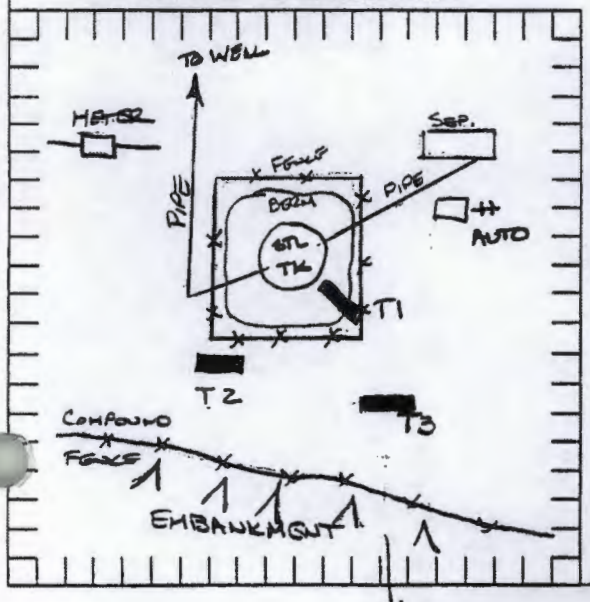
SAMPLE INVENTORY:

SMPL ID:	SMPL TYPE:	LABORATORY ANALYSIS:
T1@5'	SOIL	HEAD
T1@5'	SOIL	BTEX/TPH

SCALE
0 10 20 FEET

N

SITE DIAGRAM



TEST HOLE LOGS:

TH#: 1

SOIL TYPE:	SMPL TYPE:	OVM/TPH
GW/SM		
		ZH.D
		188
TD	-	9'
GW	-	NR

TH#: 2

SOIL TYPE:	SMPL TYPE:	OVM/TPH
CH/SM		
CALICHE LAYER		
		ND
		ND
TD	-	12
GW	-	NOT REACHED

TH#: 3

SOIL TYPE:	SMPL TYPE:	OVM/TPH
SM/SC		
BOTTOM OF FILL		
		ND
GW/SM		
		ND
TD	-	14'
GW	-	NR

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 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	AMOCO	Project #:	92140
Sample ID:	T-1 @ 5' NV	Date Reported:	06-16-92
Laboratory Number:	0179	Date Sampled:	04-24-92
Sample Matrix:	Soil	Date Received:	NA
Preservative:	Cool	Date Analyzed:	05-26-92
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	780	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: ~~McCoy D-1E Separator Pit~~ 94022

Tony Tristano
Analyst

Review

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:	T 1 @ 6'	Date Reported:	09-24-92
Laboratory Number:	0178	Date Sampled:	04-24-92
Sample Matrix:	Soil	Date Received:	04-24-92
Preservative:	Cool	Date Extracted:	05-26-92
Condition:	Cool & Intact	Date Analyzed:	09-20-92
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	12,100	129
Toluene	33,600	198
Ethylbenzene	ND	49.6
p,m-Xylene	219,800	129
o-Xylene	40,700	109

SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	101 %
	Bromfluorobenzene	116 %

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: McCoy GC D 1E Separator Pit 94022

Analyst

Review

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 @ 6'	Date Reported:	08-05-92
Laboratory Number:	0178	Date Sampled:	04-24-92
Sample Matrix:	Soil	Date Received:	04-24-92
Preservative:	Cool	Date Analyzed:	05-26-92
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	1,890	2.0
Toluene	8,000	2.0
Ethylbenzene	ND	2.0
p,m-Xylene	239,300	2.0
o-Xylene	33,400	2.0

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: McCoy D 1E---Separator Pit---94022.

Robert M Young
Analyst

David D Young
Review

1115

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
AMOCO / 92140	McCoy D IE Sep. Pit	94022
Sampler: (Signature)	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	EPA 3810 BTEX	EPA 8020 BTEX	EPA 418.1 TPH				Remarks
T1 @ 6'	4/24/92	1040	178	Soil	1	✓	✓	✓				
T1 @ 11'	"	1040	179	Soil	1		✓	✓				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	4/24/92	1540	Tony Tristano	4/24/92	1540
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.
5796 U.S. Highway 64-3014
Farmington, New Mexico 87401
(505) 632-0615

san juan repro Form 578-81

Attachment 2

FLORA VISTA (NAD). JWL 30045 24873 36.78677 / 108.10784

CLIENT: XTO	**BLAGG ENGINEERING, INC.** **P.O. BOX 87, BLOOMFIELD, NM 87413** **(505) 632-1199**	LOCATION NO: COCR NO: HALL

5

FIELD REPORT: PIT CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: McCoy GC D WELL #: 1E TYPE: SEP.
QUAD/UNIT: E SEC: 28 TWP: 30N RNG: 12W PM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: 1600'N/1230'W SW/NW CONTRACTOR: HDI (HERB)

DATE STARTED: 2/17/06
DATE FINISHED:
ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 30 FT. x 30 FT. x 23 FT. DEEP. CUBIC YARDAGE: 750

DISPOSAL FACILITY: JFJ LF - CROUCH MESA REMEDIATION METHOD: LANDFARM

LAND USE: INDUSTRIAL LEASE: FEE FORMATION: DK

FIELD NOTES & REMARKS:

PIT LOCATED APPROXIMATELY 80 FT. S24E FROM WELLHEAD.

DEPTH TO GROUNDWATER: <100' NEAREST WATER SOURCE: >1,000' NEAREST SURFACE WATER: <200

NMOCD RANKING SCORE: 30 NMOCD TPH CLOSURE STD: 100 PPM

SOIL AND EXCAVATION DESCRIPTION:

ELEV. - 5,524'

OVM CALIB. READ. = 53.3 ppm
OVM CALIB. GAS = 100 ppm RF = 0.52
TIME: 3:20 am/pm DATE: 2/16/06

SOIL TYPE: (SAND) / SILTY SAND / SILT / SILTY CLAY / CLAY / (GRAVEL) / OTHER
SOIL COLOR: DK. YELL. ORANGE TO BLACK
COHESION (ALL OTHERS): (NON COHESIVE) / SLIGHTLY COHESIVE / COHESIVE / HIGHLY COHESIVE
CONSISTENCY (NON COHESIVE SOILS): (LOOSE) (FIRM) / DENSE / VERY DENSE
~~PLASTICITY (CLAYS)~~: NON PLASTIC / SLIGHTLY PLASTIC / COHESIVE / MEDIUM PLASTIC / HIGHLY PLASTIC
~~DENSITY (COHESIVE CLAYS & SILTS)~~: SOFT / FIRM / STIFF / VERY STIFF / HARD
MOISTURE: DRY / (SLIGHTLY MOIST) / MOIST / WET / SATURATED / SUPER SATURATED
DISCOLORATION/STAINING OBSERVED: (YES) NO EXPLANATION - WEATHERING GRAY TO BLACK STARTING @ 1' BELOW GRADE
HC ODOR DETECTED: (YES) NO EXPLANATION - DISCOLORED PORTION ONLY. AROUND TANK PERIMETER
SAMPLE TYPE: GRAB / COMPOSITE - # OF PTS.
ADDITIONAL COMMENTS: DRILLED PIT DIMENSION 17'x19' W/ STEEL TANK ~5' BELOW GRADE.

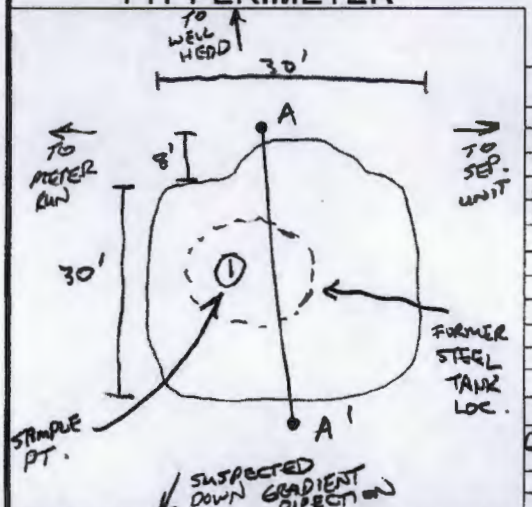
NEED TO ESTABLISH HORIZ. & VERT. EXTENT

SCALE 0 FT

FIELD 418.1 CALCULATIONS

SAMP. TIME	SAMP. ID	LAB NO.	WEIGHT (g)	mL FREON	DILUTION	READING	CALC. (ppm)

PIT PERIMETER



P.D. = PIT DEPRESSION; B.G. = BELOW GRADE; B = BELOW
T.H. = TEST HOLE; ~ = APPROX.; T.B. = TANK BOTTOM

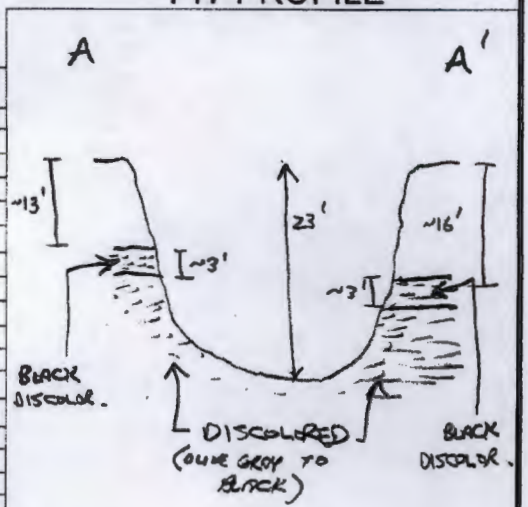
OVM READING

SAMPLE ID	FIELD HEADSPACE (ppm)
1 @ 23'	768
2 @	
3 @	
4 @	
5 @	

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME
1@23'	TPH (8015B)	1043
"	BTEX (8021B)	"
"	CHLORIDE	"

PIT PROFILE



TRAVEL NOTES: CALLOUT: 2/16/06 - MORN. ONSITE: 2/16/06 - NOON 2/17/06 - MORN. 9AM

revised: 09/04/02 bei1005C.skf

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFICATE OF WASTE STATUS

1. Generator Name and Address	2. Destination Name:
XTO Energy Inc. **2700 Farmington Ave., Bldg. K, Suite 1** **Farmington, NM 87401**	J.F.J. Landfarm c/o Industrial Ecosystems Inc. 420 CR 3100 Aztec, NM 87410
3. Originating Site (name): McCoy GC D#1E attach list of originating sites as appropriate	Location of the Waste (Street address &/or ULSTR): E-28-30-12
4. Source and Description of Waste: PRODUCTION TANK STEEL PIT	WATER &/OR CONDENSATE

I, **Nelson Velez** representative for :
Print Name

Blagg Engineering, Inc. c/o XTO Energy Inc. do hereby certify that, according to the Resource Conservation and Recovery Act (RCRA) and Environmental Protection Agency's July,1988, regulatory determination, the above described waste is: (Check appropriate classification)

✓ **EXEMPT** oilfield waste

___ **NON-EXEMPT** oilfield waste which is non-hazardous by characteristic analysis or by product identification

and that nothing has been added to the exempt or non-exempt non –hazardous waste defined above.

For NON-EXEMPT waste the following documentation is attached (check appropriate items):

___MSDS Information
___RCRA Hazardous Waste Analysis
___Chain of Custody
___Other (description

This waste is in compliance with Regulated Levels of Naturally Occurring Radioactive Material (NORM) pursuant to 20 NMAC 3.1 subpart 1403.C and D.

Name (Original Signature): Nelson Velez 320-3489

Title: **Staff Geologist / AGENT for XTO Energy**

Date: 2/16/06

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, March 06, 2006

Nelson Velez
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413

TEL: (505) 632-1199
FAX (505) 632-3903

RE: McCoy GC D #1E - Separator Pit

Order No.: 0602202

Dear Nelson Velez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 2/21/2006 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

AZ license # AZ0682
ORELAP Lab # NM100001

Hall Environmental Analysis Laboratory

Date: *06-Mar-06*

CLIENT: Blagg Engineering
Project: McCoy GC D #1E - Separator Pit
Lab Order: 0602202

CASE NARRATIVE

Analytical Comments for METHOD 8015GRO_S, SAMPLE 0602202-01A: Elevated surrogate due to matrix interference. Analytical Comments for METHOD 8021BTEX_S, SAMPLE 0602202-01A: Low surrogate due to matrix interference. Sample analyzed twice to confirm.

Hall Environmental Analysis Laboratory

Date: *06-Mar-06*

CLIENT:	Blagg Engineering	**Client Sample ID:**	1 @ 23'
Lab Order:	0602202	**Collection Date:**	2/20/2006 10:43:00 AM
Project:	McCoy GC D #1E - Separator Pit	**Date Received:**	2/21/2006
Lab ID:	0602202-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						**Analyst: SCC**
Diesel Range Organics (DRO)	100	10		mg/Kg	1	2/27/2006 2:14:11 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/27/2006 2:14:11 PM
Surr: DNOP	117	60-124		%REC	1	2/27/2006 2:14:11 PM
EPA METHOD 8015B: GASOLINE RANGE						**Analyst: NSB**
Gasoline Range Organics (GRO)	1600	100		mg/Kg	20	2/27/2006 3:39:42 PM
Surr: BFB	209	79-128	S	%REC	20	2/27/2006 3:39:42 PM
EPA METHOD 8021B: VOLATILES						**Analyst: NSB**
Benzene	ND	1.0		mg/Kg	20	2/27/2006 3:39:42 PM
Toluene	1.3	1.0		mg/Kg	20	2/27/2006 3:39:42 PM
Ethylbenzene	5.6	1.0		mg/Kg	20	2/27/2006 3:39:42 PM
Xylenes, Total	76	1.0		mg/Kg	20	2/27/2006 3:39:42 PM
Surr: 4-Bromofluorobenzene	68.6	87.5-115	S	%REC	20	2/27/2006 3:39:42 PM
EPA METHOD 9056A: ANIONS						**Analyst: MAP**
Chloride	310	6.0		mg/Kg	20	3/1/2006

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

Date: *06-Mar-06*

CLIENT: Blagg Engineering
Work Order: 0602202
Project: McCoy GC D #1E - Separator Pit

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_S

Sample ID: MB-9880	SampType: MBLK	TestCode: 300_S	Units: mg/Kg	Prep Date: 2/27/2006	RunNo: 18443
Client ID: ZZZZZ	Batch ID: 9880	TestNo: E300		Analysis Date: 3/1/2006	SeqNo: 454928

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.30									

Sample ID: LCS-9880	SampType: LCS	TestCode: 300_S	Units: mg/Kg	Prep Date: 2/27/2006	RunNo: 18443
Client ID: ZZZZZ	Batch ID: 9880	TestNo: E300		Analysis Date: 3/1/2006	SeqNo: 454929

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	13.33	0.30	14.29	0	93.3	90	110				

3 / 7

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

CLIENT: Blagg Engineering
Work Order: 0602202
Project: McCoy GC D #1E - Separator Pit

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015DRO_S

Sample ID: MB-9841	SampType: MBLK	TestCode: 8015DRO_S	Units: mg/Kg	Prep Date: 2/23/2006	RunNo: 18412
Client ID: ZZZZZ	Batch ID: 9841	TestNo: SW8015		Analysis Date: 2/27/2006	SeqNo: 454242

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10									
Motor Oil Range Organics (MRO)	ND	50									

Sample ID: LCS-9841	SampType: LCS	TestCode: 8015DRO_S	Units: mg/Kg	Prep Date: 2/23/2006	RunNo: 18412
Client ID: ZZZZZ	Batch ID: 9841	TestNo: SW8015		Analysis Date: 2/27/2006	SeqNo: 454243

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56.58	10	50	0	113	67.4	117				

Sample ID: LCSD-9841	SampType: LCSD	TestCode: 8015DRO_S	Units: mg/Kg	Prep Date: 2/23/2006	RunNo: 18412
Client ID: ZZZZZ	Batch ID: 9841	TestNo: SW8015		Analysis Date: 2/27/2006	SeqNo: 454244

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	58.00	10	50	0	116	67.4	117	56.58	2.49	17.4	

4 / 7

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

CLIENT: Blagg Engineering
Work Order: 0602202
Project: McCoy GC D #1E - Separator Pit

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GRO_S

Sample ID: MB-9854	SampType: MBLK	TestCode: 8015GRO_S	Units: mg/Kg	Prep Date: 2/23/2006	RunNo: 18401
Client ID: ZZZZZ	Batch ID: 9854	TestNo: SW8015	(SW5035)	Analysis Date: 2/24/2006	SeqNo: 454039

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0									

Sample ID: LCS-9854	SampType: LCS	TestCode: 8015GRO_S	Units: mg/Kg	Prep Date: 2/23/2006	RunNo: 18401
Client ID: ZZZZZ	Batch ID: 9854	TestNo: SW8015	(SW5035)	Analysis Date: 2/24/2006	SeqNo: 454040

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23.40	5.0	25	0	93.6	84	120				

517

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

CLIENT: Blagg Engineering
Work Order: 0602202
Project: McCoy GC D #1E - Separator Pit

ANALYTICAL QC SUMMARY REPORT

TestCode: 8021BTEX_S

Sample ID: MB-9854	SampType: MBLK	TestCode: 8021BTEX_S	Units: mg/Kg	Prep Date: 2/23/2006	RunNo: 18401
Client ID: ZZZZZ	Batch ID: 9854	TestNo: SW8021	(SW5035)	Analysis Date: 2/24/2006	SeqNo: 453994

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.050									
Toluene	ND	0.050									
Ethylbenzene	ND	0.050									
Xylenes, Total	ND	0.050									

Sample ID: LCS-9854	SampType: LCS	TestCode: 8021BTEX_S	Units: mg/Kg	Prep Date: 2/23/2006	RunNo: 18401
Client ID: ZZZZZ	Batch ID: 9854	TestNo: SW8021	(SW5035)	Analysis Date: 2/24/2006	SeqNo: 453996

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.4480	0.050	0.449	0	99.8	85.6	116				
Toluene	1.614	0.050	1.62	0	99.6	82.4	120				
Ethylbenzene	0.4985	0.050	0.508	0	98.1	86.4	111				
Xylenes, Total	1.443	0.050	1.48	0	97.5	78.4	125				

Sample ID: LCSD 9854	SampType: LCSD	TestCode: 8021BTEX_S	Units: mg/Kg	Prep Date: 2/23/2006	RunNo: 18401
Client ID: ZZZZZ	Batch ID: 9854	TestNo: SW8021	(SW5035)	Analysis Date: 2/24/2006	SeqNo: 453997

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.4441	0.050	0.449	0	98.9	85.6	116	0.448	0.874	27	
Toluene	1.594	0.050	1.62	0	98.4	82.4	120	1.614	1.23	19	
Ethylbenzene	0.4984	0.050	0.508	0	98.1	86.4	111	0.4985	0.0201	10	
Xylenes, Total	1.429	0.050	1.48	0	96.6	78.4	125	1.443	0.940	13	

617

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

Sample Receipt Checklist

Client Name BLAGG | Date and Time Received: 2/21/2006

Work Order Number 0602202 | Received by LMM

Checklist completed by Lisa Hedrick 2/21/06
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? 5° *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: BLAGG ENGR. / XTO ENERGY
Project Name: McCoy GC D #1E - SEPARATOR PIT
Address: P.O. BOX 87 BLFD., NM 87413
Project #: NV
Project Manager: NV
Phone #: 632-1199
Sampler: NV
Fax #:
Sample Temperature: 5°

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative cool	HEAL No.
				1-4 oz.				602202
2/20/06	1043	SOIL	① @ 23'	~~SOIL~~ NV			✓	-1

ANALYSIS REQUEST

(BTEX + ~~MTBE + TMB's~~ (8021B)	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)		Chloride				Air Bubbles or Headspace (Y or N)
✓		✓											✓				

Date: 2/21/06 Time: 0930 1045 NV Relinquished By: (Signature) Nelson Velez
Received By: (Signature) Lisa Hall 1614 2/21/06
Date: Time: Relinquished By: (Signature)
Received By: (Signature)

Remarks:

ATTACHMENT 3

Lodestar Services, Inc.
P.O. Box 3861, Farmington, NM 87499-3861, 505-334-2791

October 31, 2007

Mr. Glenn Von Gonten
New Mexico Oil Conservation Division
1220 South Francis Drive
Santa Fe, New Mexico 87505

Certified Mail: 7006 2150 0001 7643 8516

RE: McCoy Gas Com D #1E

Dear Mr. Von Gonten,

On behalf of XTO Energy, Inc. (XTO), Lodestar Services, Incorporated (Lodestar) is pleased to present this work plan for installation of oxygen release compound (ORC©) into groundwater monitoring well MW-1 at the McCoy Gas Com D #1E. The site is located in Unit F of Section 28 of Township 30N, Range 12W and includes three groundwater monitoring wells.

Attached for your review is documentation of previous work completed at the site, as well as a current site map. In February 2006, XTO discovered a former earthen production pit while removing a 95-barrel steel tank. Approximately 750 cubic yards of impacted soil were excavated, and a confirmation sample collected from the excavation indicated that total benzene, toluene, ethyl benzene, and xylenes (BTEX) were beneath the New Mexico Oil Conservation Division's (NMOCD) 50 milligrams per kilogram (mg/kg) standard. However, the concentration of Total Petroleum Hydrocarbons (TPH) was above the NMOCD's 100 mg/kg guideline (see attached laboratory reports). In September 2006, XTO completed two soil borings on the downgradient edge of the former pit to investigate the extent of impact. Groundwater was encountered in the second boring, and XTO installed groundwater monitoring well MW-1. Groundwater samples were collected and analyzed for BTEX by USEPA method 8021. Results are shown in the table below and indicate concentrations of BTEX above New Mexico Water Quality Control Commission (NMWQCC) standards.

In May 2007, XTO installed two additional groundwater monitoring wells estimated to be downgradient of MW-1 to determine extent of impact to groundwater. Groundwater samples were collected from the three wells just after installation, and results indicated MW-2 and MW-3 contain very low or no detectable concentrations of BTEX.

MCCOY GAS COM D #1E
GROUNDWATER SAMPLING RESULTS

Sample Date	Groundwater Monitoring Well Number	Benzene µg/L	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)
10/16/2006	MW-1	22	2500	2700	19,000
05/16/2007	MW-1	30	760	1700	24,000
	MW-2	ND	ND	ND	3.1
	MW-3	ND	ND	ND	ND

ND: Not Detected

To reduce concentrations of BTEX in MW-1, XTO will install ORC filter socks, containing magnesium peroxide, throughout the water column to supply oxygen for aerobic degradation of hydrocarbons. The ORC socks will be replaced annually as necessary. MW-1R will continue to be sampled on an annual basis to verify effectiveness of the added nutrients. The ORC socks will be removed at least 24 hours prior to sampling to allow for restoration of static water conditions. Dissolved oxygen will be monitored in MW-1R bi-monthly. Once the dissolved oxygen concentration in MW-1R shows a significant increase, groundwater samples will be collected quarterly. When concentrations of BTEX are beneath NMWQCC standards, the ORC socks will be removed and quarterly sampling will continue for four consecutive quarters. Following four consecutive quarters of clean analytical results, XTO will submit a closure report for the site.

Should you have any questions or require additional information, please do not hesitate to contact Lisa Winn of XTO at (505) 333-3196 or you can call me at (970) 946-1093.

Sincerely,
LODESTAR SERVICES, INC

Ashley Ager

Cc: Lisa Winn, XTO
Kim Champlin, XTO
Martin Nee, Lodestar Services
Brandon Powell, NMOCD
File

Attachments: Site Map
Previous Excavation Files
Soil Boring Logs
Groundwater Monitoring Well Completion Diagrams
Groundwater Sampling Laboratory Results

ATTACHMENT 4

Hall Environmental Analysis Laboratory, Inc.

Date: *20-May-08*

CLIENT:	XTO Energy	**Client Sample ID:**	McCoy D #1E MW-3
Lab Order:	0805196	**Collection Date:**	5/12/2008 3:20:00 PM
Project:	Ground Water	**Date Received:**	5/14/2008
Lab ID:	0805196-04	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						**Analyst: NSB**
Benzene	ND	1.0		µg/L	1	5/19/2008 7:05:54 PM
Toluene	ND	1.0		µg/L	1	5/19/2008 7:05:54 PM
Ethylbenzene	ND	1.0		µg/L	1	5/19/2008 7:05:54 PM
Xylenes, Total	ND	2.0		µg/L	1	5/19/2008 7:05:54 PM
Surr: 4-Bromofluorobenzene	92.6	68.9-122		%REC	1	5/19/2008 7:05:54 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: *20-May-08*

CLIENT:	XTO Energy	**Client Sample ID:**	McCoy D #1E MW-2
Lab Order:	0805196	**Collection Date:**	5/13/2008 8:22:00 AM
Project:	Ground Water	**Date Received:**	5/14/2008
Lab ID:	0805196-05	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	5/19/2008 7:36:05 PM
Toluene	ND	1.0		µg/L	1	5/19/2008 7:36:05 PM
Ethylbenzene	ND	1.0		µg/L	1	5/19/2008 7:36:05 PM
Xylenes, Total	ND	2.0		µg/L	1	5/19/2008 7:36:05 PM
Surr: 4-Bromofluorobenzene	91.4	68.9-122		%REC	1	5/19/2008 7:36:05 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: *20-May-08*

CLIENT:	XTO Energy	**Client Sample ID:**	McCoy D #1E MW-1
Lab Order:	0805196	**Collection Date:**	5/13/2008 9:17:00 AM
Project:	Ground Water	**Date Received:**	5/14/2008
Lab ID:	0805196-06	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	10		µg/L	10	5/19/2008 11:42:11 PM
Toluene	640	10		µg/L	10	5/19/2008 11:42:11 PM
Ethylbenzene	540	10		µg/L	10	5/19/2008 11:42:11 PM
Xylenes, Total	11000	200		µg/L	100	5/19/2008 11:09:21 PM
Surr: 4-Bromofluorobenzene	104	68.9-122		%REC	10	5/19/2008 11:42:11 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: *20-May-08*

CLIENT:	XTO Energy	**Client Sample ID:**	TRIP BLANK
Lab Order:	0805196	**Collection Date:**	
Project:	Ground Water	**Date Received:**	5/14/2008
Lab ID:	0805196-07	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	5/19/2008 8:06:16 PM
Toluene	ND	1.0		µg/L	1	5/19/2008 8:06:16 PM
Ethylbenzene	ND	1.0		µg/L	1	5/19/2008 8:06:16 PM
Xylenes, Total	ND	2.0		µg/L	1	5/19/2008 8:06:16 PM
Surr: 4-Bromofluorobenzene	91.5	68.9-122		%REC	1	5/19/2008 8:06:16 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:** 0805196

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 0805196-05A MSD		*MSD*			Batch ID:	R28566	Analysis Date:		5/19/2008 9:06:27 PM
Benzene	19.62	µg/L	1.0	98.1	85.9	113	0.417	27	
Toluene	19.56	µg/L	1.0	97.8	86.4	113	1.47	19	
Ethylbenzene	19.67	µg/L	1.0	98.4	83.5	118	2.17	10	
Xylenes, Total	59.20	µg/L	2.0	98.7	83.4	122	1.61	13	
Sample ID: 5ML RB		*MBLK*			Batch ID:	R28566	Analysis Date:		5/16/2008 8:48:01 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-R		*LCS*			Batch ID:	R28566	Analysis Date:		5/19/2008 11:34:15 AM
Benzene	19.50	µg/L	1.0	97.5	85.9	113			
Toluene	19.46	µg/L	1.0	97.3	86.4	113			
Ethylbenzene	19.55	µg/L	1.0	97.7	83.5	118			
Xylenes, Total	59.49	µg/L	2.0	99.2	83.4	122			
Sample ID: 0805196-05A MS		*MS*			Batch ID:	R28566	Analysis Date:		5/19/2008 8:36:29 PM
Benzene	19.70	µg/L	1.0	98.5	85.9	113			
Toluene	19.85	µg/L	1.0	99.2	86.4	113			
Ethylbenzene	20.10	µg/L	1.0	101	83.5	118			
Xylenes, Total	60.16	µg/L	2.0	100	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 Received: 5/14/2008

Work Order Number 0805196 | Received by: ARS

Checklist completed by: Tonya Shomin (Signature) 5/14/08 (Date) | Sample ID labels checked by: TS (Initials)

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 - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	7°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: XTO Energy
Kim Champlin
Address: 382 CR 3100
Aztec, NM 87410
Phone #: 505-333-3207
email or Fax#:
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: Ground Water
Project #:
Project Manager: Ashley Ager 970-946-1093
Sampler: Troy Urban
On Ice: ☒ Yes ☐ No
Sample Temperature:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8021 B BTEX				Air Bubbles (Y or N)
051208	1017	Randel #7 MW-8	40 - 3 - 40cc	HCl	1												✓				
051208	1123	DH Randel #7 MW-7	40 - 3 - 40cc	HCl	2												✓				
051208	1332	Garcia Gas Com B1 MW-2	40 - 3 - 40cc	HCl	3												✓				
051208	1520	McCoy D #1E MW-3	40 - 3 - 40cc	HCl	4												✓				
051308	0822	McCoy D #1E MW-2	40 - 3 - 40cc	HCl	5												✓				
051308	0917	McCoy D #1E MW-1	40 - 3 - 40cc	HCl	6												✓				
051208	0700	Trip BLANK	40 - 2 - 40cc	HCl	7												✓				

Date:	Time:	Relinquished by:	Received by:	
5/13/08	1105			9:05 5/14/08
Date:	Time:	Relinquished by:	Received by:	

Remarks: please copy Results to ALA@lodestarservices.com
Per Ashley swith the ID's for our #1 and #2 of 5/20

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.