3R - 414

2010 AGWMR

MAR 2011

2010 ANNUAL GROUNDWATER REPORT

McCoy Gas Com D #1E

3RP-414

Unit E, Section 28, Township 30N, Range 12
San Juan County, New Mexico

PREPARED FOR:

Mr. Glenn Von Gonten
New Mexico Oil Conservation Division
1220 South St. Francis Street
Santa Fe, New Mexico 87505
(505) 476-3488

March 2011

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Appendices

2010 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 (Amoco) in January 1998. This is a gas producing well in the Dakota Sandstone and is currently active. There is an irrigation ditch directly south of the location that flows in the summer months while remaining dry in the winter months. A topographic map is presented as ***Figure 1***.

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 Envirotech, Inc. site assessment. The report detailing this site assessment is included in this report as ***Attachment 1***. Impacted soil was excavated to a depth of approximately 23 feet and an estimated 750 cubic yards of impacted soil was removed. A Blagg Engineering, Inc. report detailing the closure methods is included with this report as ***Attachment 2***. The floor of the excavation was sampled and no groundwater was encountered. Monitoring well MW-1R was installed in September 2006 and sampled in October 2006. Completion Diagrams and Borehole Logs are presented as **Figure 3-4**. Laboratory results for groundwater samples from monitoring well MW-1R revealed benzene, toluene, ethyl benzene and total xylene (BTEX) constituents above New Mexico Water Quality Control Commission (WQCC) standards.

The 2006 annual groundwater report was submitted to the New Mexico Oil Conservation Division (OCD) in February 2007, proposing the installation of two (2) down gradient monitoring wells to further delineate impact to groundwater in accordance with OCD approved Groundwater Management Plan.

XTO installed two (2) down gradient monitoring wells (MW-2 and MW-3) in May 2007. Completion Diagrams and Borehole Logs for the monitoring wells installed during 2007 are presented as **Figure 5-6**. All three (3) monitoring wells were sampled in May 2007. Laboratory results of groundwater samples revealed elevated BTEX concentrations in monitoring well 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-1R. In November 2007 ORC socks that produce a controlled release of oxygen into the groundwater for up to 12 months were installed in monitoring well MW-1R across the vertical length of the water column within the monitoring well.

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

The 2008 annual groundwater report was submitted to the OCD in April 2009 proposing replacement of the ORC sock in monitoring well MW-1R along with annual sampling of all three (3) monitoring wells.

In January 2009 OCD requested XTO sample monitoring well MW-1R while an OCD representative collected a duplicate sample. This was done on January 21, 2009.

The 2009 Annual Groundwater Report was submitted to Mr. Glenn Von Gonten in March of 2010 recommending that monitoring well MW-1R continue to be sampled on a quarterly basis, with monitoring wells MW-2 and MW-3 being sampled on an annual basis to ensure that the hydrocarbon constituents in the groundwater were not migrating off-site.

Summaries of water level data and laboratory results from historical and current groundwater monitoring are presented as ***Table 1*** and ***Table 2***. Copies of the laboratory data sheets and associated quality assurance/quality control data for 2010 are included for your review as ***Attachment 3***.

METHODOLOGY

ORC socks were removed from monitoring well MW-1R and annual samples of groundwater were collected in May 2009. After sampling the ORC socks were replaced.

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. The data collected during this monitoring is presented on ***Table 1***.

Groundwater Sampling

Prior to sampling groundwater, 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 (3) 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 (3) 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 (2) 40-milliliter (ml) glass vials. The pre-cleaned and pre-preserved with

hydrochloric acid, then filled with sample water 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. In August of 2010, XTO Energy, Inc. switched from HEAL to Environmental Science Corporation (ESC) based out of Mt. Juliet, Tennessee. All sampled were sealed in a coolers, and shipped to ESC via Fed-Ex overnight to ensure they were received by the lab cold, and within the allotted holding time for BTEX. 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. Copies of the field notes for 2010 are included in ***Attachment 4***.

Groundwater Contour Maps

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

RESULTS

Monitoring well MW-1 and MW-2 were sampled in May of 2010, during the historical high water season for the local groundwater. Samples from both wells returned results of non-detect for all BTEX constituents analyzed via USEPA Method 8021B, indicating that the contaminants are not migrating offsite at this time. The benzene levels measured during 2010 showed an increase in monitoring well MW-1R from less than 10 ppb in May of 2009, to 360 ppb in 2010. Xylenes showed a downward trend in the second and third quarter of 2010, but a sharp rebound in the forth quarter, coinciding with the ending of the irrigation season and the low mark for the water level. Water levels obtained in the forth quarter were an average of 3.4 feet lower than water levels obtained during the third quarter monitoring.

The unlined irrigation ditch adjacent to the location controls groundwater behavior at the site. Groundwater flows towards the northeast when the ditch is running and towards the southwest when it is empty. The ditch typically runs at full capacity in May and is dry by November for the winter season. This pattern has been observed yearly since 2007. ***Figure 2*** illustrates the estimated groundwater gradients obtained for the second, third and fourth quarter of 2010.

Due to the change in 2010 from semi-annual sampling of the McCoy Gas Com D #1E to a quarterly sampling schedule proposed in March of 2010, first quarter samples were not collected during 2010. Quarterly sampling began in the second quarter of 2010.

CONCLUSIONS

Laboratory analysis shows BTEX levels in monitoring well MW-1R were above the WQCC standards in the fourth quarter, and showed a sharp increase in the forth quarter coinciding with the low water mark for the season. Laboratory analysis of monitoring wells MW-2 and MW-3 showed levels of non-detect, demonstrating that the impacted groundwater is confined to the well site at this time.

RECOMMENDATIONS

XTO proposes the continued use of ORC socks in monitoring well MW-1R to oxygenate the groundwater aquifer and enhance the natural degradation occurring at this site. XTO also proposes a specific capacity test be performed on MW-1 at this site during the irrigation season to determine a flow rate. XTO will use this data to determine what methods of remediation are available at this site.

TABLE 1

WATER LEVEL SUMMARY TABLE
MCCOY GAS COM D #1E
XTO ENERGY, INC.

Well ID	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (feet AMSL)
MW-1R	10/16/06	32.86	5502.27
MW-1R	5/16/07	30.69	5504.44
MW-1R	7/23/07	30.57	5504.56
MW-1R	9/27/07	32.01	5503.12
MW-1R	11/27/07	34.60	5500.53
MW-1R	5/13/08	31.97	5503.16
MW-1R	1/21/09	36.88	5498.25
MW-1R	5/26/09	30.68	5504.45
MW-1R	5/25/10	30.13	5505.00
MW-1R	8/12/10	30.87	5504.26
MW-1R	11/17/10	33.96	5501.17
MW-2	5/17/07	30.56	5505.12
MW-2	7/23/07	31.98	5503.70
MW-2	9/27/07	32.44	5503.24
MW-2	11/27/07	35.29	5500.39
MW-2	5/13/08	31.98	5503.70
MW-2	5/26/09	36.46	5499.22
MW-2	5/25/10	29.88	5505.80
MW-2	8/12/10	31.30	5504.38
MW-2	11/17/10	34.61	5501.07
MW-3	5/17/07	21.55	5505.56
MW-3	7/23/07	30.65	5496.46
MW-3	9/27/07	24.02	5503.09
MW-3	11/27/07	28.94	5498.17
MW-3	5/12/08	22.55	5504.56
MW-3	5/26/09	21.37	5505.74
MW-3	5/25/10	20.99	5506.12
MW-3	8/12/10	23.03	5504.08
MW-3	11/17/10	26.85	5500.26

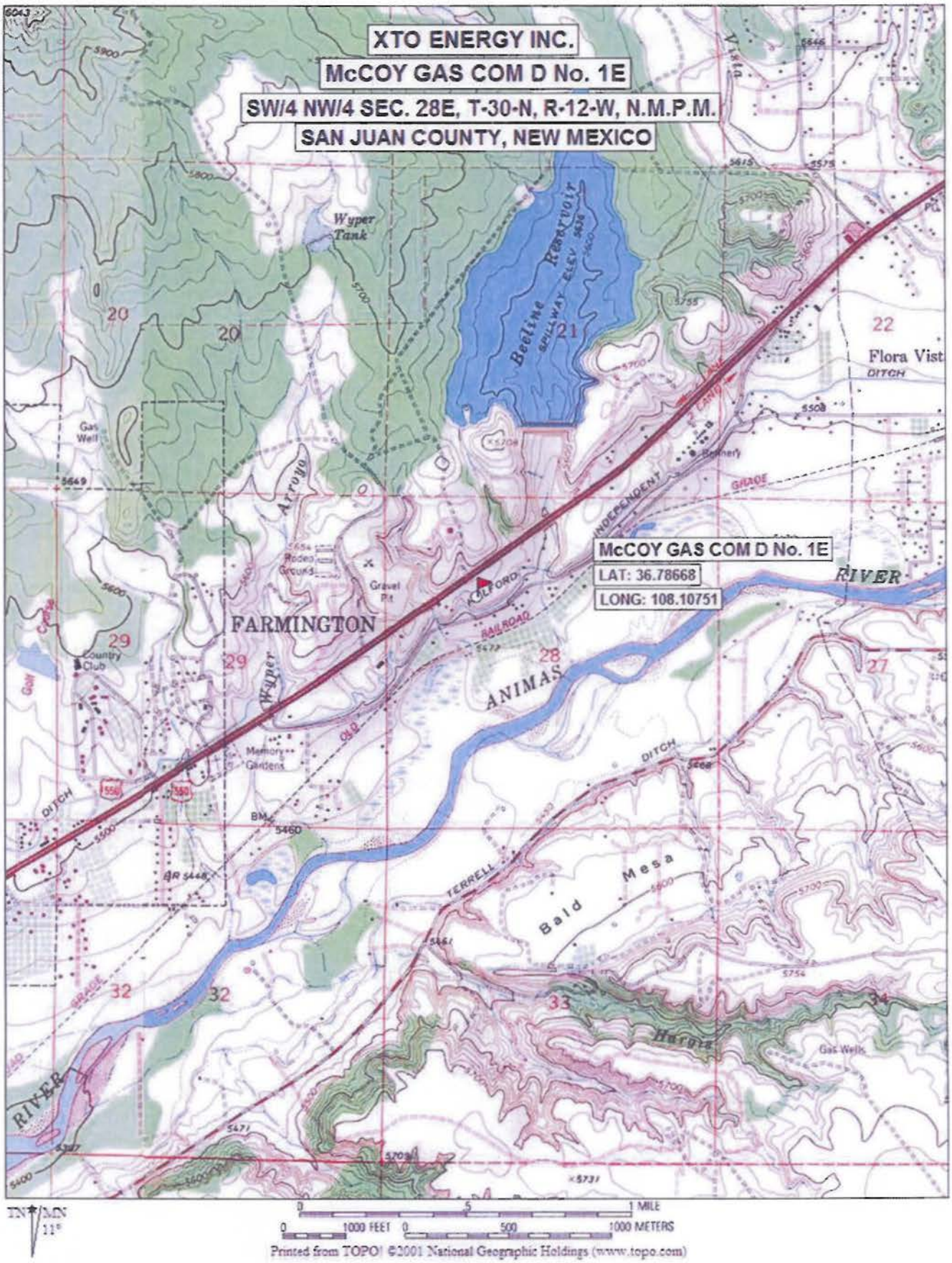
Notes:
BTOC = Below Top of Casing
AMSL = Above Mean Sea Level

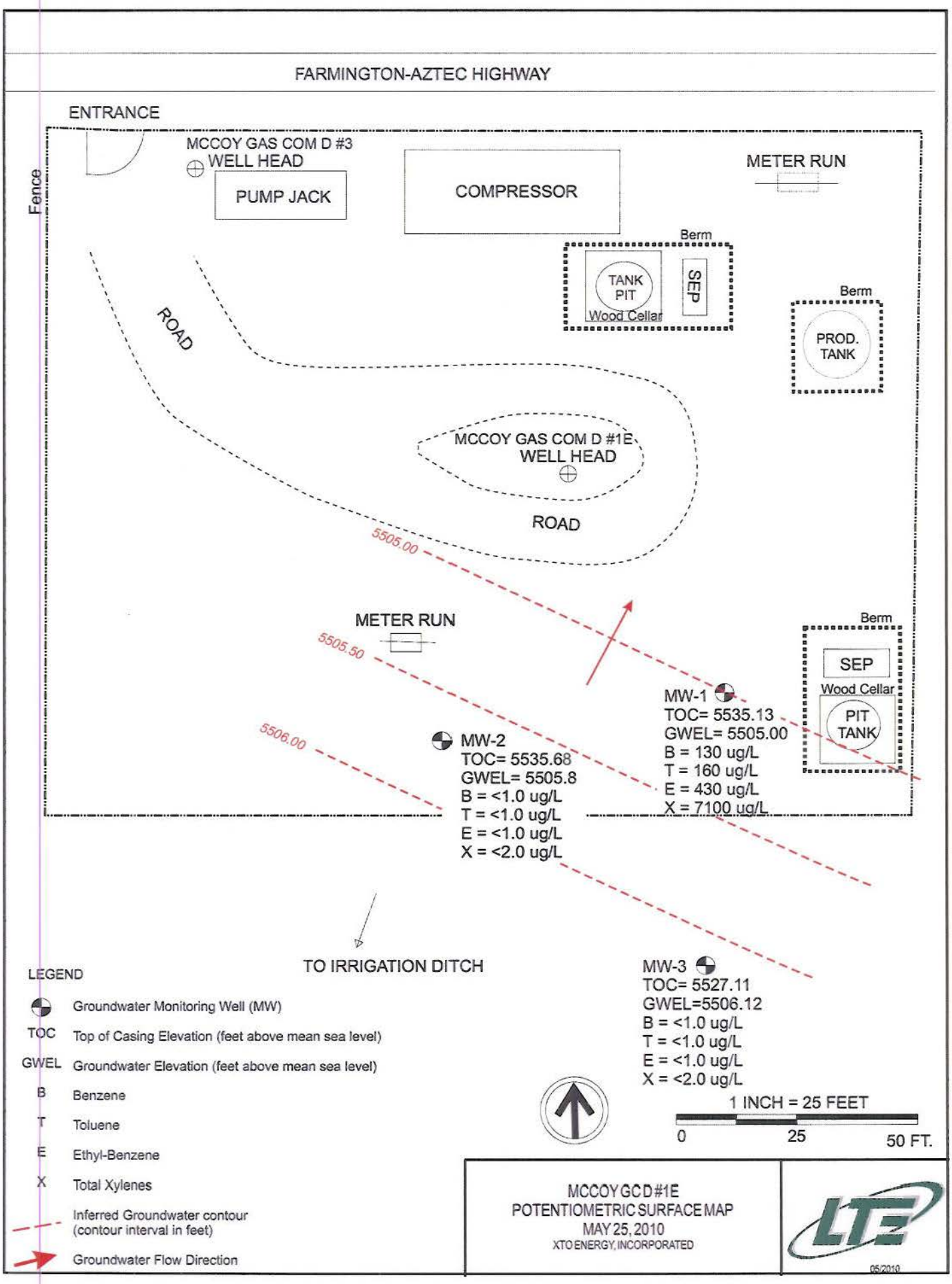
TABLE 2

GROUNDWATER RESULTS SUMMARY TABLE
MCCOY GAS COM D #1E
XTO ENERGY, INC.

Well ID	Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
NMWQCC Groundwater Standard		10 ug/L	750 ug/L	750 ug/L	620 ug/L
MW-1R	10/16/06	**22**	**2,500**	**2,700**	**19,000**
MW-1R	5/16/07	**30**	**760**	**1,700**	**24,000**
MW-1R	7/23/07	NS	NS	NS	NS
MW-1R	9/27/07	NS	NS	NS	NS
MW-1R	11/27/07	NS	NS	NS	NS
MW-1R	5/13/08	<10	640	540	**11,000**
MW-1R	1/21/09	<100	**1,200**	**1,100**	**12,000**
MW-1R	5/26/09	<10	620	640	**11,000**
MW-1R	5/25/10	**130**	160	430	**7,100**
MW-1R	8/12/10	**120**	<120	260	**6,700**
MW-1R	11/17/10	**360**	<2,500	**1,400**	**16,000**
MW-2	5/17/07	<1.0	<1.0	<1.0	3.10
MW-2	7/23/07	NS	NS	NS	NS
MW-2	9/27/07	NS	NS	NS	NS
MW-2	11/27/07	NS	NS	NS	NS
MW-2	5/13/08	<1.0	<1.0	<1.0	<2.0
MW-2	5/26/09	NS	NS	NS	NS
MW-2	5/25/10	<1.0	<1.0	<1.0	<2.0
MW-2	8/12/10	NS	NS	NS	NS
MW-2	11/17/10	NS	NS	NS	NS
MW-3	5/17/07	<1.0	<1.0	<1.0	<2.0
MW-3	7/23/07	NS	NS	NS	NS
MW-3	9/27/07	NS	NS	NS	NS
MW-3	11/27/07	NS	NS	NS	NS
MW-3	5/12/08	<1.0	<1.0	<1.0	<2.0
MW-3	5/26/09	NS	NS	NS	NS
MW-3	5/25/10	<1.0	<1.0	<1.0	<2.0
MW-3	8/12/10	NS	NS	NS	NS
MW-3	11/17/10	NS	NS	NS	NS

Notes:
ug/L = micrograms per liter
< indicates result is less than the stated laboratory method detection limit
NMWQCC=New Mexico Water Quality Control Commission
Benzene, Toluene, Ethylbenzene, and Total Xylenes analyzed by EPA Method 8021B.
NS = Not Sampled
ND = result is less than the stated laboratory method detection limit
BOLD Indicates the result exceeds the NMWQCC Standard




FARMINGTON-AZTEC HIGHWAY
ENTRANCE
Fence
MCCOY GAS COM D #3
WELL HEAD
PUMP JACK
COMPRESSOR
METER RUN
Berm
TANK
PIT
Wood Cellar
SEP
Berm
PROD.
TANK
ROAD
MCCOY GAS COM D #1E
WELL HEAD
ROAD
5505.00
METER RUN
5505.50
5506.00
Berm
SEP
Wood Cellar
PIT
TANK
MW-1
TOC= 5535.13
GWEL= 5505.00
B = 130 ug/L
T = 160 ug/L
E = 430 ug/L
X = 7100 ug/L
MW-2
TOC= 5535.68
GWEL= 5505.8
B = <1.0 ug/L
T = <1.0 ug/L
E = <1.0 ug/L
X = <2.0 ug/L
TO IRRIGATION DITCH
MW-3
TOC= 5527.11
GWEL=5506.12
B = <1.0 ug/L
T = <1.0 ug/L
E = <1.0 ug/L
X = <2.0 ug/L
LEGEND
Groundwater Monitoring Well (MW)
TOC Top of Casing Elevation (feet above mean sea level)
GWEL Groundwater Elevation (feet above mean sea level)
B Benzene
T Toluene
E Ethyl-Benzene
X Total Xylenes
Inferred Groundwater contour (contour interval in feet)
Groundwater Flow Direction
1 INCH = 25 FEET
0
25
50 FT.
MCCOY GCD #1E
POTENTIOMETRIC SURFACE MAP
MAY 25, 2010
XTO ENERGY, INCORPORATED
LTE
05/2010

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 4465
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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

RECORD OF SUBSURFACE EXPLORATION

LodeStar Services
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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

RECORD OF SUBSURFACE EXPLORATION

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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

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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		
		33.5'				1630: bit teeth worn completely down, pipe threads sheared in one section, one bent rod on inner tube.
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		40-45	cuttings	Wet coarse sand and cobble fragments		Slow, but steady
45						
50						
55						
60						

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

Geologist Signature: *Ashley L. Ager*

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 4465
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

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: PV

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 (FLEET MANUFT 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 AT 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.

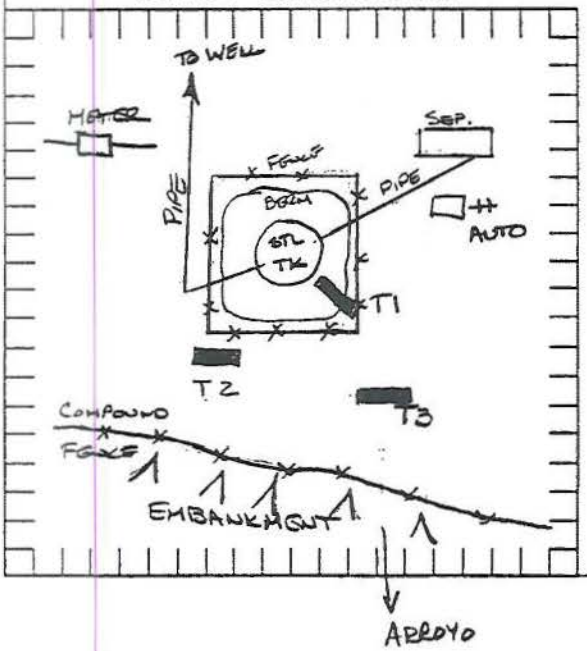
SAMPLE INVENTORY:

SMPL ID:	SMPL TYPE:	LABORATORY ANALYSIS:
T1 @ 5'	SOIL	HEAD
T1 @ 5'	SOIL	8020/TPH

SCALE
0 10 20 FEET

N

SITE DIAGRAM



TEST HOLE LOGS:

TH#: 1

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

TH#: 2

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

TH#: 3

SOIL TYPE:	SMPL TYPE:	OVM/TPH
SM/SC		
BOTTOM OF FILL		
		ND
GM/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

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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 1E 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

AURA VISTA (MAD). JUL 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

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 (HERBER)

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

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

SOIL AND EXCAVATION DESCRIPTION: ELEV. - 5,524'

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 - VARYING 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: ORIGINAL PIT DIMENSION 17'x19' W/ STEEL TANK ~ 5' BELOW GRADE.

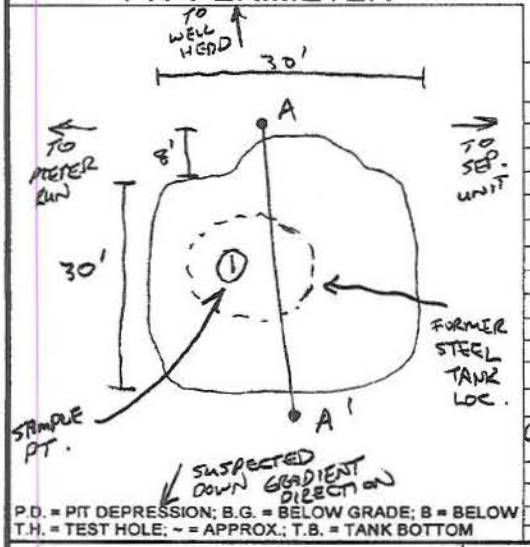
NEED TO ESTABLISH HORIZ. & VERT. EXTENT

FIELD 418.1 CALCULATIONS

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

SCALE 0 FT

PIT PERIMETER



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

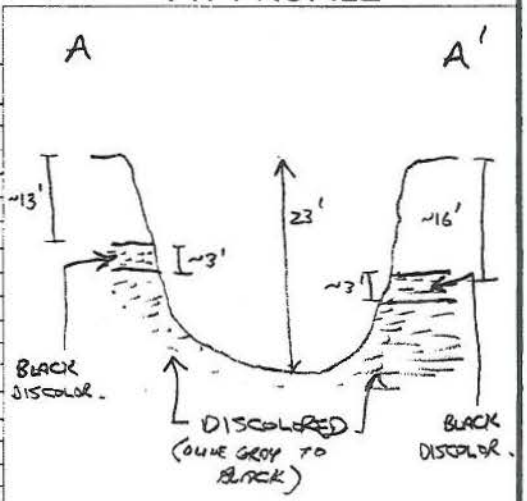
OVM READING

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 OFFE 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 VM 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

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

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		

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	

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: 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				

5 / 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: 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	

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 ENER. / XTO ENERGY
Address: P.O. BOX 87 BLFD., NM 87413
Phone #: 632-1199
Fax #:

Project Name: McCoy GC D #1E - SEPARATOR PIT
Project #:
Project Manager: NV
Sampler: NV
Sample Temperature: 5°

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative cool	HEAL No. 0602202
				1-4 oz.				
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	Time	Relinquished By: (Signature)	Received By: (Signature)
2/21/06	0730 1045 NV	Nelson Velez	Lisa Hall 2/21/06 1614
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks:

Hall Environmental Analysis Laboratory, Inc.

Date: *09-Jun-10*

CLIENT: XTO Energy
Project: XTO Ground Water
Lab Order: 1005770

Lab ID: 1005770-01 **Collection Date:** 5/25/2010 2:45:00 PM
Client Sample ID: McCoy GC D#1E MW-1 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	130	100		µg/L	100	6/5/2010 4:23:45 PM
Toluene	160	100		µg/L	100	6/5/2010 4:23:45 PM
Ethylbenzene	430	100		µg/L	100	6/5/2010 4:23:45 PM
Xylenes, Total	7100	200		µg/L	100	6/5/2010 4:23:45 PM
Surr: 4-Bromofluorobenzene	97.5	65.9-130		%REC	100	6/5/2010 4:23:45 PM

Lab ID: 1005770-02 **Collection Date:** 5/25/2010 3:43:00 PM
Client Sample ID: McCoy GC D #1E MW-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	6/5/2010 4:54:18 PM
Toluene	ND	1.0		µg/L	1	6/5/2010 4:54:18 PM
Ethylbenzene	ND	1.0		µg/L	1	6/5/2010 4:54:18 PM
Xylenes, Total	ND	2.0		µg/L	1	6/5/2010 4:54:18 PM
Surr: 4-Bromofluorobenzene	92.2	65.9-130		%REC	1	6/5/2010 4:54:18 PM

Lab ID: 1005770-03 **Collection Date:** 5/25/2010 4:26:00 PM
Client Sample ID: McCoy GC D #1E MW-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	6/5/2010 5:24:37 PM
Toluene	ND	1.0		µg/L	1	6/5/2010 5:24:37 PM
Ethylbenzene	ND	1.0		µg/L	1	6/5/2010 5:24:37 PM
Xylenes, Total	ND	2.0		µg/L	1	6/5/2010 5:24:37 PM
Surr: 4-Bromofluorobenzene	87.0	65.9-130		%REC	1	6/5/2010 5:24:37 PM

Lab ID: 1005770-04 **Collection Date:** 5/25/2010 11:30:00 AM
Client Sample ID: OH Randel MW-7 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	7200	100		µg/L	100	6/7/2010 3:34:17 PM
Toluene	3800	50		µg/L	50	6/5/2010 5:54:53 PM
Ethylbenzene	440	50		µg/L	50	6/5/2010 5:54:53 PM
Xylenes, Total	11000	100		µg/L	50	6/5/2010 5:54:53 PM
Surr: 4-Bromofluorobenzene	111	65.9-130		%REC	50	6/5/2010 5:54:53 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level
E	Estimated value
J	Analyte detected below quantitation limits
NC	Non-Chlorinated
PQL	Practical Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit
S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *09-Jun-10*

CLIENT: XTO Energy
Project: XTO Ground Water
Lab Order: 1005770

Lab ID: 1005770-05
Collection Date: 5/25/2010 1:00:00 PM
Client Sample ID: OH Randel MW-9
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	6/7/2010 4:04:39 PM
Toluene	ND	1.0		µg/L	1	6/7/2010 4:04:39 PM
Ethylbenzene	ND	1.0		µg/L	1	6/7/2010 4:04:39 PM
Xylenes, Total	ND	2.0		µg/L	1	6/7/2010 4:04:39 PM
Surr: 4-Bromofluorobenzene	86.4	65.9-130		%REC	1	6/7/2010 4:04:39 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level
E	Estimated value
J	Analyte detected below quantitation limits
NC	Non-Chlorinated
PQL	Practical Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
MCL	Maximum Contaminant Level
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:** 1005770

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R39104**	Analysis Date:		6/5/2010 10:41:56 AM	
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID:	**R39104**	Analysis Date:		6/5/2010 7:56:17 PM	
Benzene	21.97	µg/L	1.0	20	0	110	87.9	121			
Toluene	21.82	µg/L	1.0	20	0	109	83	124			
Ethylbenzene	21.94	µg/L	1.0	20	0	110	81.7	122			
Xylenes, Total	65.73	µg/L	2.0	60	0	110	85.6	121			
Sample ID: 100NG BTEX LCSD		*LCSD*				Batch ID:	**R39104**	Analysis Date:		6/5/2010 8:26:25 PM	
Benzene	19.24	µg/L	1.0	20	0	96.2	87.9	121	13.3	14.6	
Toluene	18.35	µg/L	1.0	20	0	91.8	83	124	17.3	18	
Ethylbenzene	18.54	µg/L	1.0	20	0	92.7	81.7	122	16.8	15.8	R
Xylenes, Total	56.65	µg/L	2.0	60	0	94.4	85.6	121	14.8	15.9	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **XTO ENERGY** Date Received: **5/26/2010**

Work Order Number **1005770** Received by: **ARS**

Checklist completed by: _____ 5/26/10 Sample ID labels checked by: _____

Signature Date 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 ☐		Number of preserved bottles checked for pH:
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 ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**4.6°**	*<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

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

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: XTO Groundwater
Project #:
Project Manager: Ashley Ager
Sampler: Devin Hencmann
On Ice: ☒ Yes ☐ No
Sample Temperature: 0.6

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 100570	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	BTEX 8021				Air Bubbles (Y or N)
5/25/10	1445	AQ	McCoy GC MW-1 D#1E	3 Glass	$HgCl_2$	1												X				N
5/25/10	1543	AQ	McCoy GCD#1E MW-2	3 Glass	$HgCl_2$	2												X				N
5/25/10	16:26	AQ	McCoy GCD#1E MW-3	3 Glass	$HgCl_2$	3												X				N
5/25/10	1130	AQ	OH Randel MW-7	3 Glass	$HgCl_2$	4												X				N
5/25/10	1300	AQ	OH Randel MW-9	3 Glass	$HgCl_2$	5												X				N

Date	Time	Relinquished by:	Received by:	Date	Time
5/25/10	2000				
			10:20	5/26/10	

Remarks: Please Copy results to aager@Henv.com

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.

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Tax I.D. 62-0814289

Est. 1970

Julie Linn
LT Environmental
2243 Main Ave, Ste 3
Durango, CO 81301

Report Summary

Tuesday August 17, 2010

Report Number: L473841
Samples Received: 08/13/10
Client Project:

Description: Groundwater Sampling

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Julie Linn
LT Environmental
2243 Main Ave, Ste 3
Durango, CO 81301

August 17, 2010

ESC Sample # : L473841-01

Date Received : August 13, 2010
Description : Groundwater Sampling

Site ID : OH RANDEL 7

Sample ID : OH RANDAL-7 MW-7

Project # :

Collected By : Devin Hencwann
Collection Date : 08/12/10 14:52

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.082	0.00050	mg/l	8021B	08/16/10	1
Toluene	0.058	0.0050	mg/l	8021B	08/16/10	1
Ethylbenzene	0.0092	0.00050	mg/l	8021B	08/16/10	1
Total Xylene	0.20	0.0015	mg/l	8021B	08/16/10	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	99.9		% Rec.	8021B	08/16/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 08/17/10 15:57 Printed: 08/17/10 15:57

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REPORT OF ANALYSIS

Julie Linn
LT Environmental
2243 Main Ave, Ste 3
Durango, CO 81301

August 17, 2010

ESC Sample # : L473841-02

Date Received : August 13, 2010
Description : Groundwater Sampling

Site ID : OH RANDEL 7

Sample ID : OH RANDAL-7 MW-9

Project # :

Collected By : Devin Hencwann
Collection Date : 08/12/10 15:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	08/16/10	1
Toluene	BDL	0.0050	mg/l	8021B	08/16/10	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	08/16/10	1
Total Xylene	BDL	0.0015	mg/l	8021B	08/16/10	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021B	08/16/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 08/17/10 15:57 Printed: 08/17/10 15:57

Summary of Remarks For Samples Printed
08/17/10 at 15:57:51

TSR Signing Reports: 288

ENTER CLIENT TYPE LTEN

Sample: L473841-01 Account: LTENVCO Received: 08/13/10 09:00 Due Date: 08/20/10 00:00 RPT Date: 08/17/10 15:57

Sample: L473841-02 Account: LTENVCO Received: 08/13/10 09:00 Due Date: 08/20/10 00:00 RPT Date: 08/17/10 15:57

Sample: L473841-03 Account: LTENVCO Received: 08/13/10 09:00 Due Date: 08/20/10 00:00 RPT Date: 08/17/10 15:57

ENVIRONMENTAL SCIENCE CORP.

SAMPLE NON-CONFORMANCE FORM

Sample No. : L47384J

Date: 8/13/10

Evaluated by: MV

Client: LTENVCO

Non-Conformance (check applicable items)

_____	Chain of Custody is missing	_____	Login Clarification Needed
_____	Improper container type	_____	Improper preservation
_____	Chain of custody is incomplete	_____	Container lid not intact
_____	Parameter(s) past holding time	_____	Improper temperature
_____	Broken container(s) **see below**	_____	Broken container: sufficient sample volume remains for analysis requested

_____ Insufficient packing material around container

_____ Insufficient packing material inside cooler

_____ Improper handling by carrier (FedEx / UPS / Courier)

_____ Sample was frozen

Comments: Client request V8021 on coc. Containers say BTEXM. Do they need full list VOC. If so, is V8260 ok?

Login Instructions:

TSR Initials: JW

Client informed by call / email / fax / voice mail date: 8/16 time: 1415

Client contact: Julie Linn - left msg @ 1410 on 8/16 - Log samples for BTEX by 8021.

Company Name/Address	Alternate Billing	Analysis/Container/Preservative	Chain of Custody Page___of___
LT Environmental, Inc. **2243 Main Avenue, Ste. 3** **Durango, CO 81301**	Report to: Ashley Ager E-mail to: aager@ltenv.com	8021B/ 40ml Clr/ No Pres	Prepared by: B184 ENVIRONMENTAL Science corp 12065 Lebanon Road Mt. Juliet TN 37122 Phone (615)758-5858 Phone (800) 767-5859 FAX (615)758-5859

Project Description: Ground water sampling	City/State Collected: NM		
PHONE: 970-946-1093 FAX: 970-385-1873	Client Project No.	Lab Project #	
Collected by: Dan Hinemann	Site/Facility ID# OH Randel #7 McCoy GC #1E	P.O.#	CoCode (lab use only) LTENVCO Template/Prelogin
Collected by(signature):	Rush? (Lab MUST be Notified) _____Next Day.....100% _____Two Day.....50% _____Three Day.....25%	Date Results Needed Email?___No_X__Yes FAX?___No___Yes	No of Cntrs Shipped Via: Fed Ex
Packed on Ice N___ Y X			

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	Remarks/contaminant	Sample # (lab only)
OH Randel #7 MW-7		GW		8/12/10	1452		L473811-01
OH Randel #7 MW-9		GW		8/12/10	1530		02
McCoy GC #1E MW-1		GW		8/12/10	1312		03

*Matrix: SS-Soil/Solid GW-Groundwater WW-Wastewater DW-Drinking Water OT- Other_____ pH_____ Temp_____

Remarks: Flow_____ Other_____

Relinquisher by:(Signature	Date:	Time:	Received by:(Signature)	Samples returned via: FedEx UPS Other	Condition (lab use only)
	8/12/10	1630		434198017408	
Relinquisher by:(Signature	Date:	Time:	Received by: (Signature)	Temp: 3.6° Bottles Received: 9T+TB	
Relinquisher by:(Signature	Date:	Time:	Received for lab by: (Signature)	Date: 8/13/10 Time: 0900	pH Checked: NCF:

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Tax I.D. 62-0814289

Est. 1970

James McDaniel
XTO Energy - San Juan Division
382 Road 3100
Aztec, NM 87410

Report Summary

Monday November 22, 2010

Report Number: L489776
Samples Received: 11/18/10
Client Project: XTO1002

Description: Randel

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Daphne R Richards
Daphne Richards , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

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REPORT OF ANALYSIS

James McDaniel
XTO Energy - San Juan Division
382 Road 3100
Aztec, NM 87410

November 22, 2010

ESC Sample # : L489776-01

Date Received : November 18, 2010
Description : Randel

Site ID :

Sample ID : OH RANDEL MW-9

Project # : XTO1002

Collected By : Julie Linn
Collection Date : 11/17/10 11:48

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0024	0.00050	mg/l	8021B	11/19/10	1
Toluene	BDL	0.0050	mg/l	8021B	11/19/10	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	11/19/10	1
Total Xylene	BDL	0.0015	mg/l	8021B	11/19/10	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021B	11/19/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 11/21/10 19:31 Revised: 11/22/10 10:54

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

James McDaniel
XTO Energy - San Juan Division
382 Road 3100
Aztec, NM 87410

November 22, 2010

ESC Sample # : L489776-02

Date Received : November 18, 2010
Description : Randel

Site ID :

Sample ID : OH RANDEL MW-7

Project # : XTO1002

Collected By : Julie Linn
Collection Date : 11/17/10 12:42

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	5.2	0.025	mg/l	8021B	11/20/10	50
Toluene	5.5	0.25	mg/l	8021B	11/20/10	50
Ethylbenzene	0.076	0.025	mg/l	8021B	11/20/10	50
Total Xylene	3.4	0.075	mg/l	8021B	11/20/10	50
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021B	11/20/10	50

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 11/21/10 19:31 Revised: 11/22/10 10:54

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

James McDaniel
XTO Energy - San Juan Division
382 Road 3100
Aztec, NM 87410

November 22, 2010

ESC Sample # : L489776-03

Date Received : November 18, 2010
Description : Randel

Site ID :

Sample ID : TRIP BLANK

Project # : XTO1002

Collected By : Julie Linn
Collection Date : 11/17/10 15:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	11/18/10	1
Toluene	BDL	0.0050	mg/l	8021B	11/18/10	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	11/18/10	1
Total Xylene	BDL	0.0015	mg/l	8021B	11/18/10	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021B	11/18/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 11/21/10 19:31 Revised: 11/22/10 10:54

Summary of Remarks For Samples Printed
11/22/10 at 10:54:56

TSR Signing Reports: 288
R5 - Desired TAT

report J's if above limits-B 0.01, T 0.75, E 0.75, X 0.62 mg/l

Sample: L489776-01 Account: XTORNM Received: 11/18/10 09:00 Due Date: 11/26/10 00:00 RPT Date: 11/21/10 19:31

Sample: L489776-02 Account: XTORNM Received: 11/18/10 09:00 Due Date: 11/26/10 00:00 RPT Date: 11/21/10 19:31

Sample: L489776-03 Account: XTORNM Received: 11/18/10 09:00 Due Date: 11/26/10 00:00 RPT Date: 11/21/10 19:31

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Est. 1970

XTO Energy - San Juan Division
James McDaniel
382 Road 3100

Aztec, NM 87410

Quality Assurance Report
Level II

L489776

November 22, 2010

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Benzene	< .0005	mg/l			WG509320	11/18/10 22:08
Ethylbenzene	< .0005	mg/l			WG509320	11/18/10 22:08
Toluene	< .005	mg/l			WG509320	11/18/10 22:08
Total Xylene	< .0015	mg/l			WG509320	11/18/10 22:08
a,a,a-Trifluorotoluene(PID)		% Rec.	104.0	55-122	WG509320	11/18/10 22:08
Benzene	< .0005	mg/l			WG509456	11/19/10 21:08
Ethylbenzene	< .0005	mg/l			WG509456	11/19/10 21:08
Toluene	< .005	mg/l			WG509456	11/19/10 21:08
Total Xylene	< .0015	mg/l			WG509456	11/19/10 21:08
a,a,a-Trifluorotoluene(PID)		% Rec.	105.2	55-122	WG509456	11/19/10 21:08

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Benzene	mg/l	.05	0.0500	100.	79-114	WG509320
Ethylbenzene	mg/l	.05	0.0538	108.	80-116	WG509320
Toluene	mg/l	.05	0.0519	104.	79-112	WG509320
Total Xylene	mg/l	.15	0.163	109.	84-118	WG509320
a,a,a-Trifluorotoluene(PID)				104.5	55-122	WG509320
Benzene	mg/l	.05	0.0536	107.	79-114	WG509456
Ethylbenzene	mg/l	.05	0.0542	108.	80-116	WG509456
Toluene	mg/l	.05	0.0537	107.	79-112	WG509456
Total Xylene	mg/l	.15	0.159	106.	84-118	WG509456
a,a,a-Trifluorotoluene(PID)				104.2	55-122	WG509456

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Benzene	mg/l	0.0494	0.0500	99.0	79-114	1.18	20	WG509320
Ethylbenzene	mg/l	0.0523	0.0538	105.	80-116	2.80	20	WG509320
Toluene	mg/l	0.0508	0.0519	102.	79-112	2.16	20	WG509320
Total Xylene	mg/l	0.159	0.163	106.	84-118	2.44	20	WG509320
a,a,a-Trifluorotoluene(PID)				102.7	55-122			WG509320
Benzene	mg/l	0.0544	0.0536	109.	79-114	1.51	20	WG509456
Ethylbenzene	mg/l	0.0542	0.0542	108.	80-116	0.0600	20	WG509456
Toluene	mg/l	0.0538	0.0537	108.	79-112	0.150	20	WG509456
Total Xylene	mg/l	0.163	0.159	109.	84-118	2.44	20	WG509456
a,a,a-Trifluorotoluene(PID)				102.9	55-122			WG509456

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzene	mg/l	0.0495	0	.05	99.1	35-147	L489755-01	WG509320
Ethylbenzene	mg/l	0.0530	0	.05	106.	39-141	L489755-01	WG509320
Toluene	mg/l	0.0514	0	.05	103.	35-148	L489755-01	WG509320
Total Xylene	mg/l	0.160	0.000490	.15	106.	33-151	L489755-01	WG509320
a,a,a-Trifluorotoluene(PID)					104.1	55-122		WG509320
Benzene	mg/l	0.0560	0.00140	.05	109.	35-147	L489807-01	WG509456
Ethylbenzene	mg/l	0.0567	0	.05	113.	39-141	L489807-01	WG509456
Toluene	mg/l	0.0557	0	.05	111.	35-148	L489807-01	WG509456
Total Xylene	mg/l	0.171	0	.15	114.	33-151	L489807-01	WG509456

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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XTO Energy - San Juan Division
James McDaniel
382 Road 3100

Aztec, NM 87410

Quality Assurance Report
Level II

L489776

November 22, 2010

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
a,a,a-Trifluorotoluene(PID)					104.5	55-122			

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/l	0.0505	0.0495	101.	35-147	1.94	20	L489755-01	WG509320
Ethylbenzene	mg/l	0.0535	0.0530	107.	39-141	0.830	20	L489755-01	WG509320
Toluene	mg/l	0.0521	0.0514	104.	35-148	1.31	20	L489755-01	WG509320
Total Xylene	mg/l	0.161	0.160	107.	33-151	0.550	20	L489755-01	WG509320
a,a,a-Trifluorotoluene(PID)				103.7	55-122				WG509320
Benzene	mg/l	0.0552	0.0560	108.	35-147	1.47	20	L489807-01	WG509456
Ethylbenzene	mg/l	0.0547	0.0567	109.	39-141	3.55	20	L489807-01	WG509456
Toluene	mg/l	0.0548	0.0557	110.	35-148	1.61	20	L489807-01	WG509456
Total Xylene	mg/l	0.164	0.171	109.	33-151	4.07	20	L489807-01	WG509456
a,a,a-Trifluorotoluene(PID)				105.0	55-122				WG509456

Batch number /Run number / Sample number cross reference

WG509320: R1481229: L489776-01 03
WG509456: R1482149: L489776-02

* * Calculations are performed prior to rounding of reported values .
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L489776

November 22, 2010

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Company Name/Address

XTO Energy, Inc.

382 County Road 3100
Aztec, NM 87410

Alternate Billing

Report to: Julie Linn, LTE
E-mail to: jlinn@ltenv.com

Project Description: [redacted] Randel

City/State Collected: Farmington, NM

PHONE: 505-333-3701
FAX:

Client Project No. XTO1002

Lab Project #

Collected by: ~~James McDaniel~~ Julie Linn, RG

Site/Facility ID#

P.O.#

Collected by(signature): Julie L

Packed on Ice N__ Y_X

Rush? (Lab MUST be Notified)
_____Next Day.....100%
_____Two Day.....50%
___Three Day.....25%

Date Results Needed

Email?__No_X__Yes
FAX?___No___Yes

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No of Cntrs	BTEX (8021)	Remarks/contaminant	Sample # (lab only)
OH Randel MW-9	Grab	GW	N/A	11-17-10	1148	2	X	L48977601	
OH Randel MW-7	Grab	GW	N/A	11-17-10	1242	2	X	02	
Trip Blank				11-17	1500	2	X	03	

Analysis/Container/Preservative

D062

Chain of Custody
Page___of___

Prepared by:

ENVIRONMENTAL Science corp
12065 Lebanon Road
Mt. Juliet TN 37122

Phone (615)758-5858
Phone (800) 767-5859
FAX (615)758-5859

CoCode (lab use only)
XTORNM
Template/Prelogin

Shipped Via: Fed Ex

*Matrix: SS-Soil/Solid GW-Groundwater WW-Wastewater DW-Drinking Water OT- Other_____

pH_____ Temp_____

Remarks:

Flow_____ Other_____

Relinquisher by:(Signature)	Date:	Time:	Received by:(Signature)	Samples returned via: FedEx_X_ UPS__Other__	Condition (lab use only)
Julie L	11-17-10	1500		4734 1981 2 6243	cool OK
Relinquisher by:(Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1°C / Bottles Received: 6 + 4 TB	
Relinquisher by:(Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/18/10 / Time: 0900	pH Checked: NCF:

Project Name: Groundwater | Location: OH Randel #7 | Well No: MW-7
Client: XTO | Date: 11/17/2010 | Time: 11:58
Project Manager: Julie Linn, RG | Sampler's Name: J. Linn

Measuring Point: TOC | Depth to Water: 17.65 ft | Depth to Product: NA ft
Well Diameter: 2" | Total Depth: 32.06 ft | Product Thickness: NA ft
Water Column Height: 14.41 ft

Sampling Method: ☐ Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other
☑ Bottom Valve Bailer ☐ Double Check Valve Bailer

Criteria: ☑ 3 to 5 Casing Volumes of Water Removal ☑ Stabilization of Indicator Parameters ☐ Other

Water Volume in Well			
Feet of water x Gal/ft	Gallons in well	3 casing volumes	Volume to be removed
14.41 x 0.16	2.3056	6.9168	6.9168 gal

Time (military)	pH (su)	EC (us)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
12:06	8.35	1409	14.6				0.25	Clear, slight odor
12:15	8.10	1386	15.4				0.5	no change
12:19	8.29	1392	13.9				0.75	incr. odor, incr. turbidity
12:21	7.92	1408	15.0				1	no change
12:23	7.66	1404	15.0				2	no change
12:26	7.99	1413	14.7				3	no change
12:28	8.21	1419	14.5				4	increasing grey color
12:30	8.20	1434	14.2				5	no change
12:33	8.57	1423	13.9				6	no change
12:34	8.6	1428	14				6.25	no change
12:35	8.66	1432	14				6.5	no change
12:36	8.73	1439	13.9				6.75	drying up
12:37	8.85	1453	13.8				7	drying up
Final:	8.85	1453	13.8				7	

COMMENTS: Sampled in 2 non-preserved VOA's. ORC socks pulled on 11/10/10 and replaced in well when done sampling.

Instrumentation: ☑ pH Meter ☐ DO Monitor ☑ Conductivity Meter ☑ Temperature Meter ☐ Other

Water Disposal: On Site BGT

Sample ID: OH Randel MW-7 | Sample Time: 12:42

Analysis Requested: ☑ BTEX ☐ VOCs ☐ Alkalinity ☐ TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Metals
☐ Other

Trip Blank: Yes | Duplicate Sample: No

Project Name: Groundwater | Location: OH Randel #7 | Well No: MW-9
Client: XTO | Date: 11/17/2010 | Time: 11:07
Project Manager: Julie Linn, RG | Sampler's Name: J. Linn

Measuring Point: TOC | Depth to Water: 30.49 ft | Depth to Product: NA ft
Well Diameter: 2" | Total Depth: 37.28 ft | Product Thickness: NA ft
Water Column Height: 6.79 ft

Sampling Method: ☐ Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other
☑ Bottom Valve Bailer ☐ Double Check Valve Bailer

Criteria: ☑ 3 to 5 Casing Volumes of Water Removal ☑ Stabilization of Indicator Parameters ☐ Other

Water Volume in Well			
Feet of water x Gal/ft	Gallons in well	3 casing volumes	Volume to be removed
6.79 x 0.16	1.0864	3.2592	3.2592 gal

Time (military)	pH (su)	EC (ms)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
11:13	7.40	2.65	14.1				0.25	clear, no odor
11:31	7.60	2.65	13.5				0.5	slightly turbid
11:32	7.64	2.66	13.4				0.75	no change
11:33	7.64	2.65	13.4				1	no change
11:35	7.65	2.75	13.4				1.5	no change
11:37	7.64	2.76	13.4				2	no change
11:39	7.65	2.83	13.4				2.5	increasing turbidity
11:40	7.66	2.86	13.4				2.75	increasing turbidity
11:41	7.66	2.89	13.3				3	no change
11:42	7.65	2.89	13.3				3.25	no change
Final:	7.65	2.89	13.3				3.25	

COMMENTS: Sampled in 2 non-preserved VOA's.

Instrumentation: ☑ pH Meter ☐ DO Monitor ☑ Conductivity Meter ☑ Temperature Meter ☐ Other

Water Disposal: On Site BGT

Sample ID: OH Randel MW-9 | Sample Time: 11:48

Analysis Requested: ☑ BTEX ☐ VOCs ☐ Alkalinity ☐ TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Metals
☐ Other

Trip Blank: Yes | Duplicate Sample: No