3R - 414

2013 AGWMR

JAN 2014

2013 ANNUAL GROUNDWATER REPORT

McCoy Gas Com D #1E

3RP-414

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

PREPARED FOR:

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Santa Fe, New Mexico 87505
(505) 476-3488

January 2014

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Attachment 4: 2013 Laboratory Reports

Attachment 5: 2013 Field Notes

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 a seasonal 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 exposed impacted soil from a former earthen separator pit. Impact to soil by the former pit was originally assessed by Amoco with test holes in 1992 as detailed in an Envirotech, Inc. site assessment included 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. field report detailing the excavation 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. The completion diagram and Borehole Log are presented as ***Attachment 3***. Laboratory results for groundwater samples from monitoring well MW-1R revealed benzene, toluene, ethylbenzene and total xylenes (BTEX) concentrations exceeded New Mexico Water Quality Control Commission (NMWQCC) standards.

The 2006 annual groundwater report was submitted to the New Mexico Oil Conservation Division (NMOCD) in February 2007, proposing the installation of two downgradient monitoring wells to further delineate impact to groundwater.

XTO installed monitoring wells MW-2 and MW-3 in May 2007. Completion Diagrams and Borehole Logs are presented in ***Attachment 3***. Monitoring wells MW-1R, MW-2, and MW-3 were sampled in May 2007. Groundwater analytical results indicated elevated BTEX concentrations were present in monitoring well MW-1R (source area), but BTEX constituents were not detected above the laboratory detection limits in monitoring wells MW-2 and MW-3.

In a remediation work plan submitted to NMOCD on October 31, 2007, XTO proposed

installation of Oxygen Release Compound® (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.

From 2007 to 2009, XTO maintained ORC socks in monitoring well MW-1R and sampled all monitoring wells regularly to monitor BTEX concentrations and verify dissolved oxygen concentrations in MW-1R, monitor for potential downgradient migration in MW-2 and MW-3, and assess groundwater flow behavior.

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

The 2010 annual groundwater report submitted to NMOCD in March of 2011 recommended continued use of ORC socks in monitoring well MW-1R. Additionally, XTO proposed to conduct a specific capacity test on MW-1R during the irrigation season to determine a flow rate and assess remediation options for the groundwater.

The 2011 annual groundwater report was submitted in 2012 to the NMOCD indicating the specific capacity test was not conducted because XTO did not receive approval. XTO continued use of ORC socks and monitoring of BTEX concentrations in MW-1R as well as monitoring of groundwater elevations in all monitoring wells through 2012. Free-phase product was detected in MW-1R in March of 2012 and the ORC socks were removed from the monitoring well.

A summary of groundwater elevations and laboratory analytical results from historical and current groundwater monitoring is presented in ***Table 1*** and ***Table 2*** respectively.

METHODOLOGY

In 2013, XTO measured groundwater elevations quarterly at MW-1R, MW-2, and MW-3 and sampled groundwater quarterly at MW-1R. Due to the presence of free-phase product in MW-1R, XTO installed oil-absorbent socks in the monitoring well to recover product.

From February through June of 2013, the oil-absorbent socks were monitored every other week. When greater than fifty percent saturation was observed, the oil-absorbent socks were wrung out and the liquid recovered was discarded in the pit tank onsite. Due to decreased saturation of the oil-absorbent sock, XTO reduced the frequency of monitoring the product recovery socks to quarterly in July 2013.

Water Level Measurements

Oil-absorbent socks were removed from groundwater monitoring well MW-1R at least seven days prior to sampling to allow groundwater to equilibrate. Static groundwater level monitoring included recording depth to groundwater measurements with a Keck oil/water interface probe. The interface probe was decontaminated with Alconox™ soap and rinsed

with de-ionized water prior to each measurement.

Groundwater Sampling

Prior to sampling groundwater, depth to groundwater and total depth of the well was measured with a Keck oil/water interface probe. Presence of any free-phase product was also investigated using the interface probe. The interface probe was decontaminated with Alconox™ soap and rinsed with de-ionized water prior to each measurement. The volume of water in the wells was calculated, and a minimum of three casing volumes of water was purged from each well using a new disposable polyvinyl chloride (PVC) bailer or a dedicated PVC bailer or the well was purged dry. All purge water was disposed of into tanks on site.

Once the monitoring well was purged, groundwater samples were collected by filling at least two (2) 40-milliliter (ml) glass vials. The laboratory supplied vials were filled with sample water and capped with no air inside to prevent degradation of the sample. Samples were labeled with the date and time of collection, well designation, project name, collector's name and parameters to be analyzed. They were immediately sealed, packed on ice, and shipped to Environmental Science Corporation (ESC) in Mt. Juliet, Tennessee for analysis. Proper chain-of-custody (COC) procedures were 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. Laboratory reports for quarterly groundwater monitoring are attached to this report in ***Attachment 4*** and copies of field notes are included in ***Attachment 5***.

Groundwater Contour Maps

Groundwater elevations obtained from monitoring wells during site visits were used to draft groundwater contour maps. Contours were inferred based on measured groundwater elevations and observation of physical characteristics at the site (topography, proximity to irrigation ditches, etc.).

RESULTS

No measurable free-phase product was observed in groundwater monitoring wells MW-1R, MW-2, or MW-3 during 2013. Benzene and total xylenes concentrations in monitoring well MW-1R exceeded the NMWQCC standards during all sampling events. Benzene concentrations ranged from a maximum of 98 micrograms per liter (µg/L) in March 2013 to a minimum of 33 µg/L in September 2013. Total xylenes concentrations ranged from a maximum of 7,100 µg/L in March 2013 to a minimum of 840 µg/L in September 2013. Ethylbenzene and toluene concentrations did not exceed the NMWQCC standard during any of the sampling events in 2013.

The total volume of free-phase product recovered from monitoring well MW-1R during 2013 was approximately 88.5 ounces.

As documented in the past, groundwater elevations vary by as much as ten feet depending

upon the presence or absence of water in the adjacent irrigation ditch. Groundwater flows away from the irrigation ditch when it is flowing and towards the irrigation ditch when it is dry. ***Figure 2 through Figure 5*** illustrates the groundwater potentiometric contours inferred for 2013 and groundwater analytical results. Monitoring wells MW-2 and MW-3 were dry in March 2013 and an obstruction prevented measuring depth to groundwater in MW-2 in September. Contour maps were not generated for those monitoring events.

CONCLUSIONS

Laboratory analytical results indicate benzene and total xylenes concentrations in monitoring well MW-1R exceeded the NMWQCC standards during all 2013 sampling events. Increased concentrations of BTEX typically coincide with increasing water level at the site, indicating a potential residual source of petroleum hydrocarbons in the subsurface soil that dissolves BTEX into the groundwater upon saturation with rising water table. Oil-absorbent socks are contributing to a reduction in free-phase product measured on the groundwater table at MW-1R.

RECOMMENDATIONS

XTO proposes to conduct quarterly groundwater sampling from monitoring well MW-1R and measure depth to groundwater quarterly in monitoring wells MW-1R, MW-2, and MW-3. Additionally, XTO proposes to use oil-absorbent socks to remove free-phase product from MW-1R. The socks will be drained using a wringer and the product will be disposed of in tanks on-site. XTO will continue the use of oil-absorbent socks until they are no longer recovering free-phase petroleum hydrocarbons from the well. ORC socks will be installed in the well upon the removal of product recovery socks.

TABLE 1
GROUNDWATER ELEVATIONS SUMMARY

TABLE 1

GROUNDWATER ELEVATIONS SUMMARY
MCCOY GAS COM D #001E
XTO ENERGY, INC.

Well ID	Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-1R	10/16/2006	NP	32.86	0.00	5502.27
MW-1R	5/16/2007	NP	30.69	0.00	5504.44
MW-1R	7/23/2007	NP	30.57	0.00	5504.56
MW-1R	9/27/2007	NP	32.01	0.00	5503.12
MW-1R	11/27/2007	NP	34.60	0.00	5500.53
MW-1R	5/13/2008	NP	31.97	0.00	5503.16
MW-1R	1/21/2009	NP	36.88	0.00	5498.25
MW-1R	5/26/2009	NP	30.68	0.00	5504.45
MW-1R	5/25/2010	NP	30.13	0.00	5505.00
MW-1R	8/12/2010	NP	30.87	0.00	5504.26
MW-1R	11/17/2010	NP	33.96	0.00	5501.17
MW-1R	2/14/2011	NP	37.27	0.00	5497.86
MW-1R *	5/17/2011	NP	29.31	0.00	5504.27
MW-1R	8/9/2011	NP	29.04	0.00	5504.54
MW-1R	11/9/2011	NP	31.51	0.00	5502.07
MW-1R **	3/8/2012	37.07	37.41	0.34	5496.44
MW-1R **	6/14/2012	28.29	28.39	0.10	5505.27
MW-1R	9/12/2012	NP	29.89	0.00	5503.69
MW-1R **	12/21/2012	34.19	34.22	0.03	5499.38
MW-1R	3/14/2013	NP	38.31	0.00	5495.27
MW-1R	6/17/2013	NP	28.05	0.00	5505.53
MW-1R	9/11/2013	NP	29.11	0.00	5504.47
MW-1R	12/16/2013	NP	34.61	0.00	5498.97
MW-2	5/17/2007	NP	30.56	0.00	5505.12
MW-2	7/23/2007	NP	31.98	0.00	5503.70
MW-2	9/27/2007	NP	32.44	0.00	5503.24
MW-2	11/27/2007	NP	35.29	0.00	5500.39
MW-2	5/13/2008	NP	31.98	0.00	5503.70
MW-2	5/26/2009	NP	36.46	0.00	5499.22
MW-2	5/25/2010	NP	29.88	0.00	5505.80
MW-2	8/12/2010	NP	31.30	0.00	5504.38
MW-2	11/17/2010	NP	34.61	0.00	5501.07
MW-2	2/14/2011	NP	Dry	Dry	Dry
MW-2	5/17/2011	NP	30.60	0.00	5505.08
MW-2	8/9/2011	NP	31.22	0.00	5504.46
MW-2	11/9/2011	NP	33.70	0.00	5501.98
MW-2	3/8/2012	NP	Dry	Dry	Dry
MW-2	6/14/2012	NP	29.66	0.00	5506.02
MW-2	9/12/2012	NP	31.77	0.00	5503.91
MW-2	12/21/2012	NP	36.44	0.00	5499.24
MW-2	3/14/2013	NP	Dry	Dry	Dry
MW-2	6/17/2013	NP	29.45	0.00	5506.23
MW-2	9/11/2013	NP	31.11	0.00	5504.57
MW-2	12/16/2013	OBS	OBS	OBS	OBS

TABLE 1

GROUNDWATER ELEVATIONS SUMMARY
MCCOY GAS COM D #001E
XTO ENERGY, INC.

Well ID	Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-3	5/17/2007	NP	21.55	0.00	5505.56
MW-3	7/23/2007	NP	30.65	0.00	5496.46
MW-3	9/27/2007	NP	24.02	0.00	5503.09
MW-3	11/27/2007	NP	28.94	0.00	5498.17
MW-3	5/12/2008	NP	22.55	0.00	5504.56
MW-3	5/26/2009	NP	21.37	0.00	5505.74
MW-3	5/25/2010	NP	20.99	0.00	5506.12
MW-3	8/12/2010	NP	23.03	0.00	5504.08
MW-3	11/17/2010	NP	26.85	0.00	5500.26
MW-3	2/14/2011	NP	Dry	Dry	Dry
MW-3	5/17/2011	NP	21.49	0.00	5505.62
MW-3	8/9/2011	NP	22.12	0.00	5504.99
MW-3	11/9/2011	NP	25.69	0.00	5501.42
MW-3	3/8/2012	NP	Dry	Dry	Dry
MW-3	6/14/2012	NP	20.97	0.00	5506.14
MW-3	9/12/2012	NP	23.31	0.00	5503.80
MW-3	12/21/2012	NP	30.61	0.00	5496.50
MW-3	3/14/2013	NP	Dry	Dry	Dry
MW-3	6/17/2013	NP	20.80	0.00	5506.31
MW-3	9/11/2013	NP	22.75	0.00	5504.36
MW-3	12/16/2013	NP	31.95	0.00	5495.16

Notes:
AMSL - Above Mean Sea Level
BTOC - Below Top of Casing
NP - No Product
OBS - Obstruction in well
* - New Top of Casing Elevation; Casing Cut Off 1.55 Feet to Remove ORC Socks in May 2011.
** - Groundwater elevation calculation: (Top of Casing Elevaton - Depth to Water) + (Product Thickness * 0.8)

TABLE 2
GROUNDWATER ANALYTICAL RESULTS SUMMARY

TABLE 2

GROUNDWATER ANALYTICAL RESULTS SUMMARY
MCCOY GAS COM D #001E
XTO ENERGY, INC.

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Groundwater Standard		**10 µg/L**	**750 µg/L**	**750 µg/L**	**620 µg/L**
MW-1R	10/16/2006	**22**	**2,500**	**2,700**	**19,000**
MW-1R	5/16/2007	**30**	**760**	**1,700**	**24,000**
MW-1R	5/13/2008	<10	640	540	**11,000**
MW-1R	1/21/2009	<100	**1,200**	**1,100**	**12,000**
MW-1R	5/26/2009	<10	620	640	**11,000**
MW-1R	5/25/2010	**130**	160	430	**7,100**
MW-1R	8/12/2010	**120**	<120	260	**6,700**
MW-1R	11/17/2010	**360**	<2,500	**1,400**	**16,000**
MW-1R	2/14/2011	**16**	**1,000**	**870**	**13,000**
MW-1R	5/17/2011	**300**	290	**850**	**13,000**
MW-1R	8/9/2011	<5	53.6	19.3	**6,220**
MW-1R	11/9/2011	**11**	<50	<5	**1,600**
MW-1R	3/8/2012	NS	NS	NS	**NS**
MW-1R	6/14/2012	**120**	110	**750**	**5,000**
MW-1R	9/12/2012	**78**	<250	120	**4,600**
MW-1R	12/21/2012	<25	<250	280	**7,400**
MW-1R	3/21/2013	**98**	<250	<25.0	**7,100**
MW-1R	6/17/2013	**66**	<250	94	**4,500**
MW-1R	9/11/2013	**33**	<25	76	**840**
MW-1R	12/13/2013	**52**	<100	160	**2,000**
MW-2	5/17/2007	<1.0	<1.0	<1.0	3.10
MW-2	5/13/2008	<1.0	<1.0	<1.0	<2.0
MW-2	5/25/2010	<1.0	<1.0	<1.0	<2.0
MW-3	5/17/2007	<1.0	<1.0	<1.0	<2.0
MW-3	5/12/2008	<1.0	<1.0	<1.0	<2.0
MW-3	5/25/2010	<1.0	<1.0	<1.0	<2.0

Notes:
BOLD indicates the result exceeds the NMWQCC Standard
NMWQCC - New Mexico Water Quality Control Commission
NS - Not Sampled
µg/L - micrograms per liter
< indicates result is less than the stated laboratory method detection limit

FIGURE 1
SITE LOCATION MAP

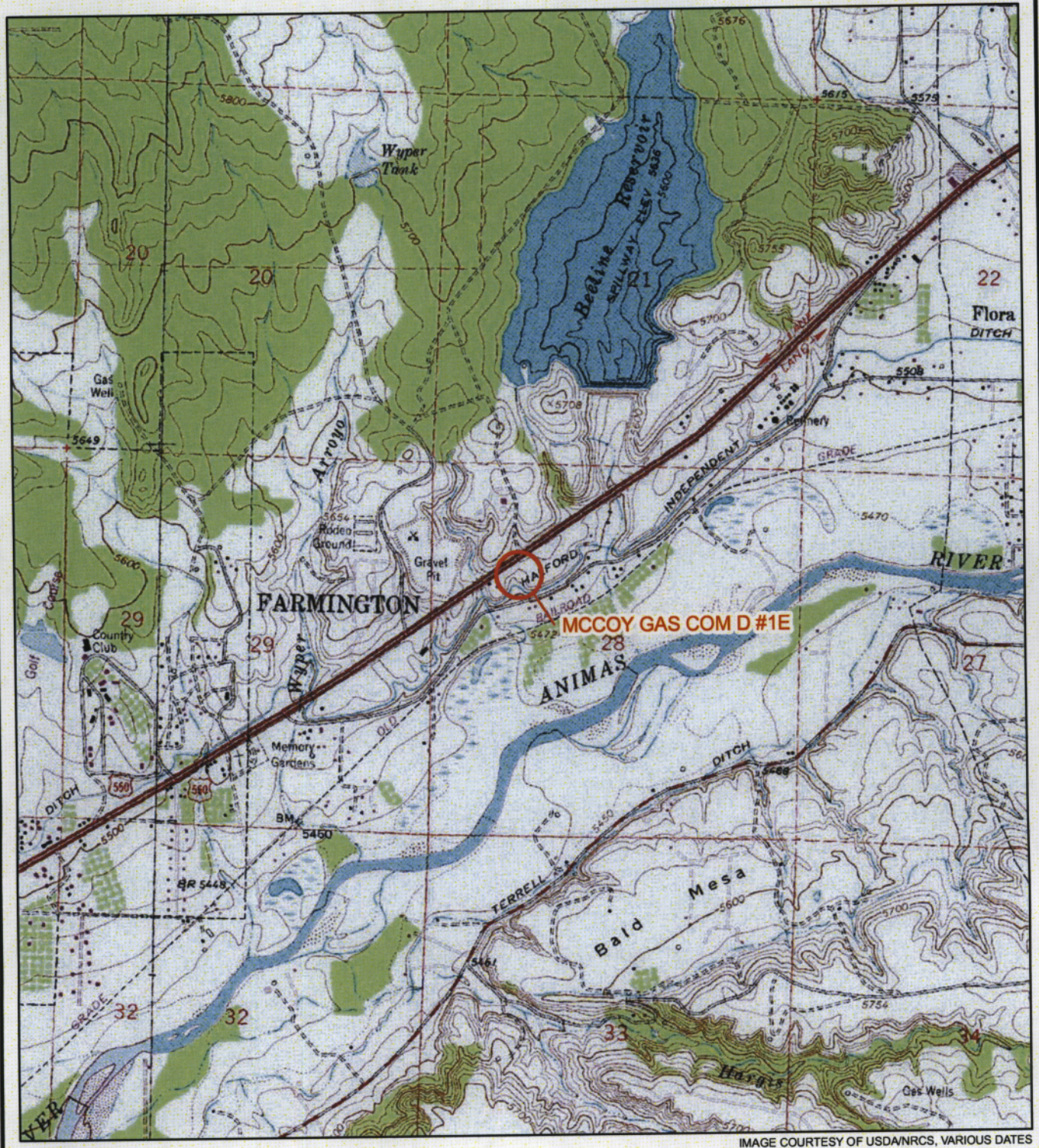

IMAGE COURTESY OF USDA/NRCS, VARIOUS DATES

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

FIGURE 1
SITE LOCATION MAP
MCCOY GAS COM D #1E
SWNW SEC 28 T30N R12W
SAN JUAN COUNTY, NEW MEXICO
XTO ENERGY, INC.

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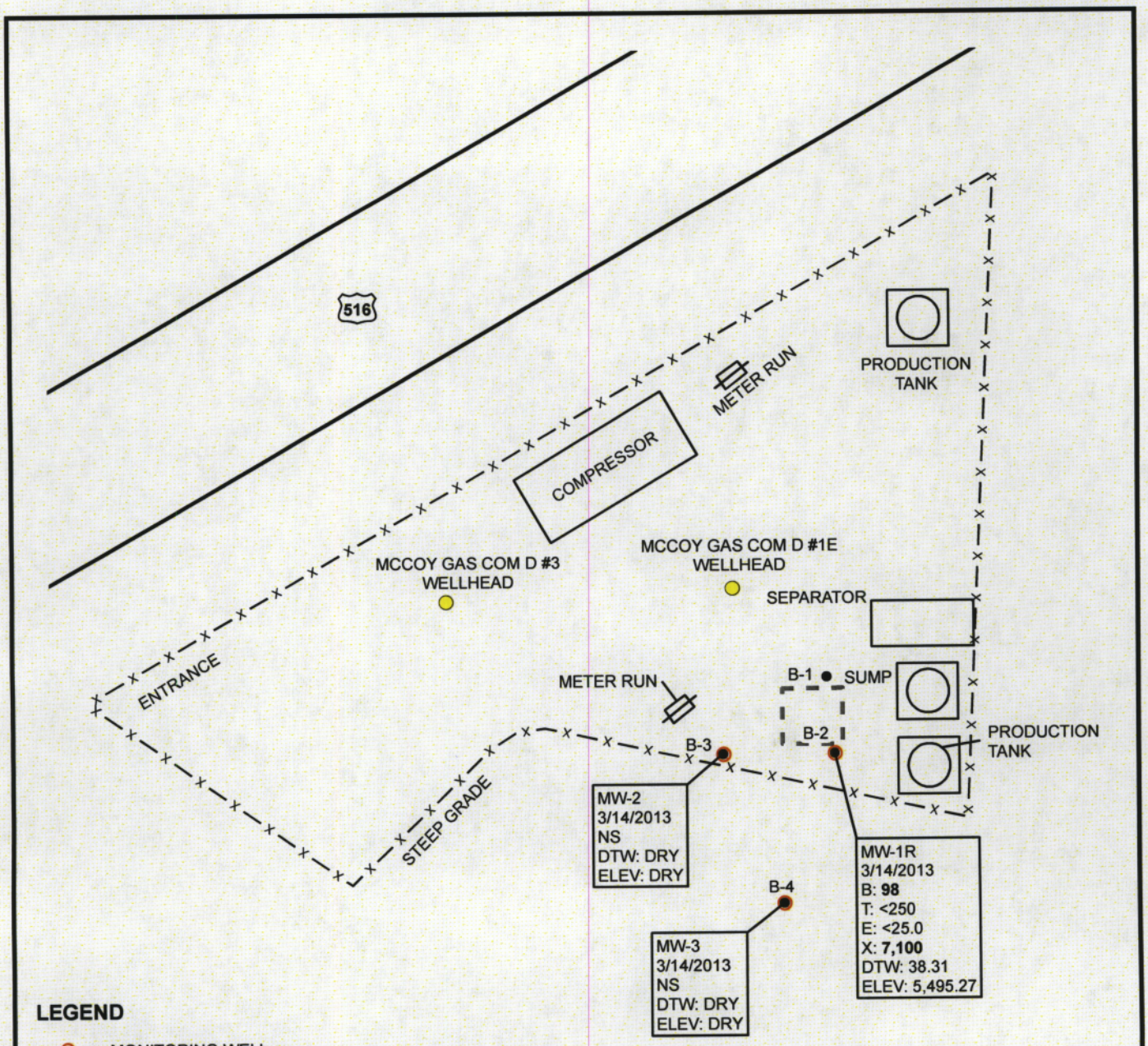
FIGURE 2
MARCH 2013 GROUNDWATER ELEVATION AND ANALYTICAL RESULTS



LEGEND

- MONITORING WELL
- BORING HOLE
- WELLHEAD
- FORMER PIT TANK
- FENCE

SAMPLE ID
SAMPLE DATE
B: BENZENE IN MICROGRAMS PER LITER (µg/L)
T: TOLUENE (µg/L)
E: ETHYLBENZENE (µg/L)
X: TOTAL XYLENES (µg/L)
DTW: DEPTH TO GROUNDWATER MEASURED IN FEET BELOW TOP OF CASING
ELEV: GROUNDWATER ELEVATION MEASURED IN FEET ABOVE MEAN SEA LEVEL
NS: NOT SAMPLED
<: LESS THAN LABORATORY METHOD DETECTION LIMIT
BOLD INDICATES RESULT EXCEEDS THE NEW MEXICO WATER QUALITY CONTROL COMMISSION STANDARD

0 80 160
Feet

N

FIGURE 2
GROUNDWATER ELEVATION AND ANALYTICAL RESULTS
MCCOY GAS COM D #001E
SWNW SEC 28 T30N R12W
SAN JUAN COUNTY, NEW MEXICO
XTO ENERGY, INC.

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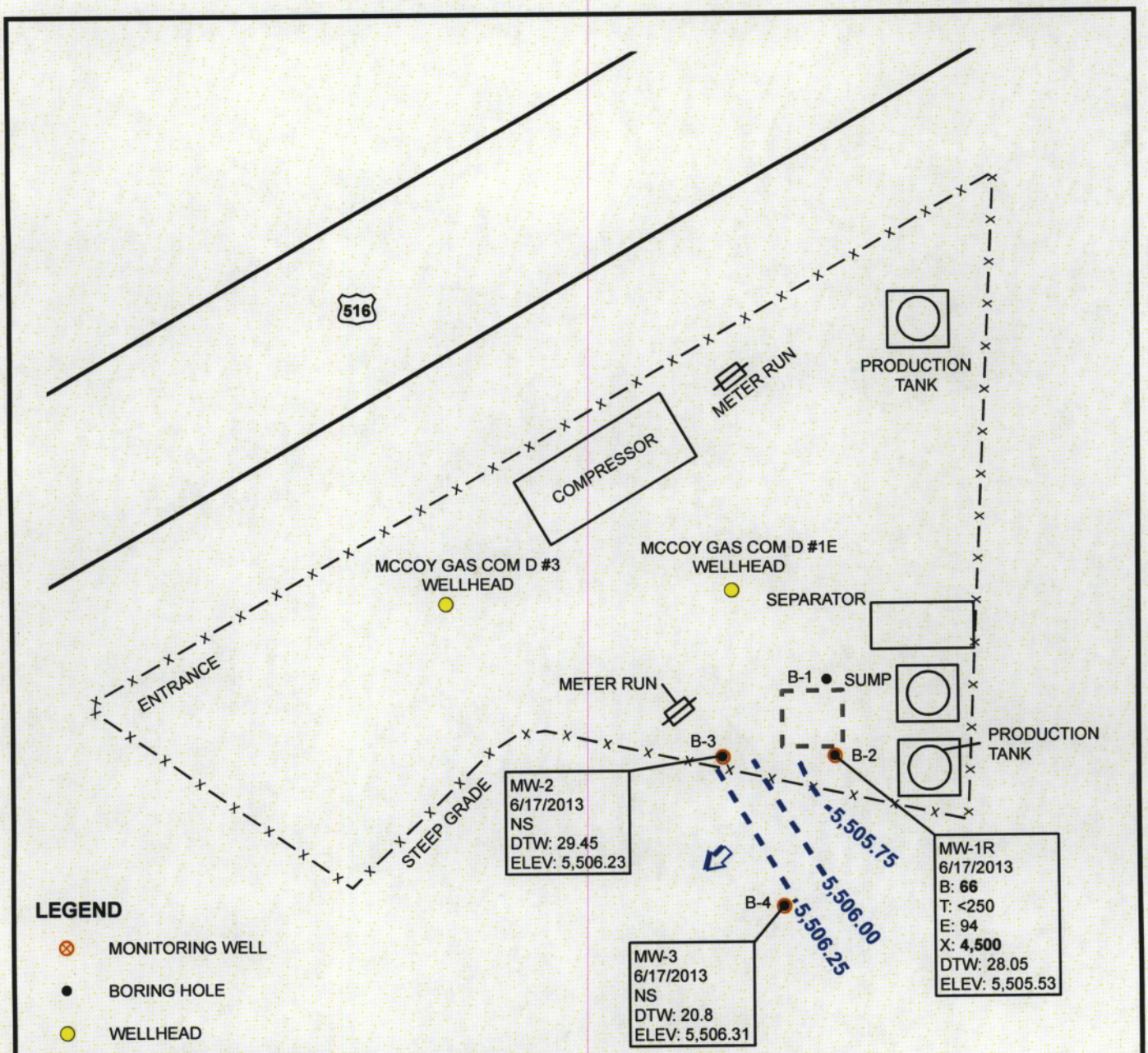
FIGURE 3
JUNE 2013
GROUNDWATER ELEVATION AND ANALYTICAL RESULTS



LEGEND

- MONITORING WELL
- BORING HOLE
- WELLHEAD
- ESTIMATED GROUNDWATER FLOW DIRECTION
- FORMER PIT TANK
- FENCE
- INFERRED GROUNDWATER ELEVATION CONTOUR
  CONTOUR INTERVAL = 0.25 FEET

SAMPLE ID
SAMPLE DATE
B: BENZENE IN MICROGRAMS PER LITER (µg/L)
T: TOLUENE (µg/L)
E: ETHYLBENZENE (µg/L)
X: TOTAL XYLENES (µg/L)
DTW: DEPTH TO GROUNDWATER MEASURED IN FEET BELOW TOP OF CASING
ELEV: GROUNDWATER ELEVATION MEASURED IN FEET ABOVE MEAN SEA LEVEL
NS: NOT SAMPLED
<: LESS THAN LABORATORY METHOD DETECTION LIMIT
BOLD INDICATES RESULT EXCEEDS THE NEW MEXICO WATER QUALITY CONTROL COMMISSION STANDARD

0 80 160
Feet

N

FIGURE 5
GROUNDWATER ELEVATION AND ANALYTICAL RESULTS
MCCOY GAS COM D #001E
SWNW SEC 28 T30N R12W
SAN JUAN COUNTY, NEW MEXICO
XTO ENERGY, INC.

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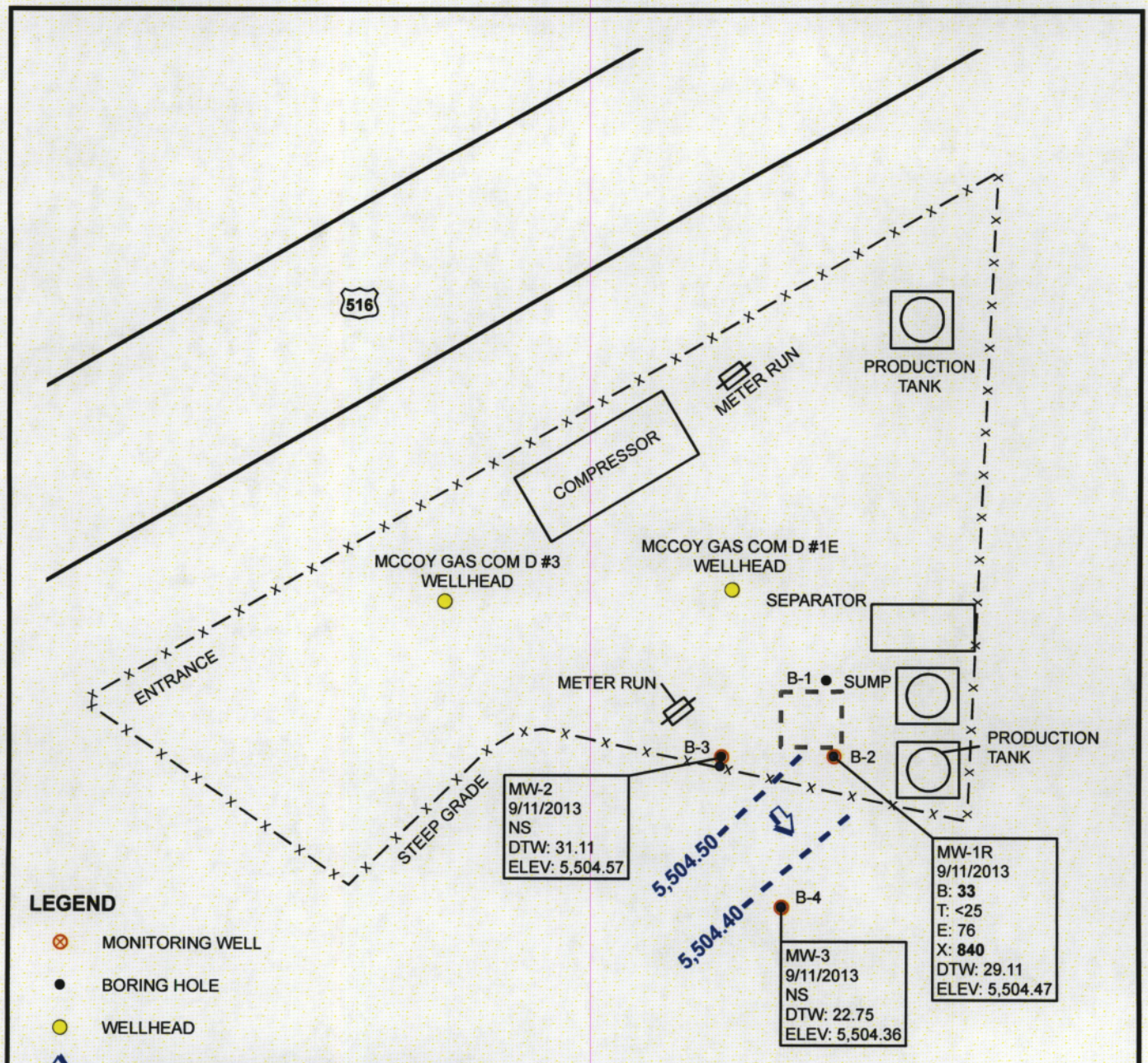
FIGURE 4
SEPTEMBER 2013
GROUNDWATER ELEVATION AND ANALYTICAL RESULTS



LEGEND

- MONITORING WELL
- BORING HOLE
- WELLHEAD
- ESTIMATED GROUNDWATER FLOW DIRECTION
- FORMER PIT TANK
- FENCE
- INFERRED GROUNDWATER ELEVATION CONTOUR
  CONTOUR INTERVAL = 0.10 FEET

SAMPLE ID
SAMPLE DATE
B: BENZENE IN MICROGRAMS PER LITER (µg/L)
T: TOLUENE (µg/L)
E: ETHYLBENZENE (µg/L)
X: TOTAL XYLENES (µg/L)
DTW: DEPTH TO GROUNDWATER MEASURED IN FEET BELOW TOP OF CASING
ELEV: GROUNDWATER ELEVATION MEASURED IN FEET ABOVE MEAN SEA LEVEL
NS: NOT SAMPLED
<: LESS THAN LABORATORY METHOD DETECTION LIMIT
BOLD INDICATES RESULT EXCEEDS THE NEW MEXICO WATER QUALITY CONTROL COMMISSION STANDARD

0 80 160
Feet

N

FIGURE 5
GROUNDWATER ELEVATION AND ANALYTICAL RESULTS
MCCOY GAS COM D #001E
SWNW SEC 28 T30N R12W
SAN JUAN COUNTY, NEW MEXICO
XTO ENERGY, INC.

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FIGURE 5
DECEMBER 2013
GROUNDWATER ELEVATION AND ANALYTICAL RESULTS

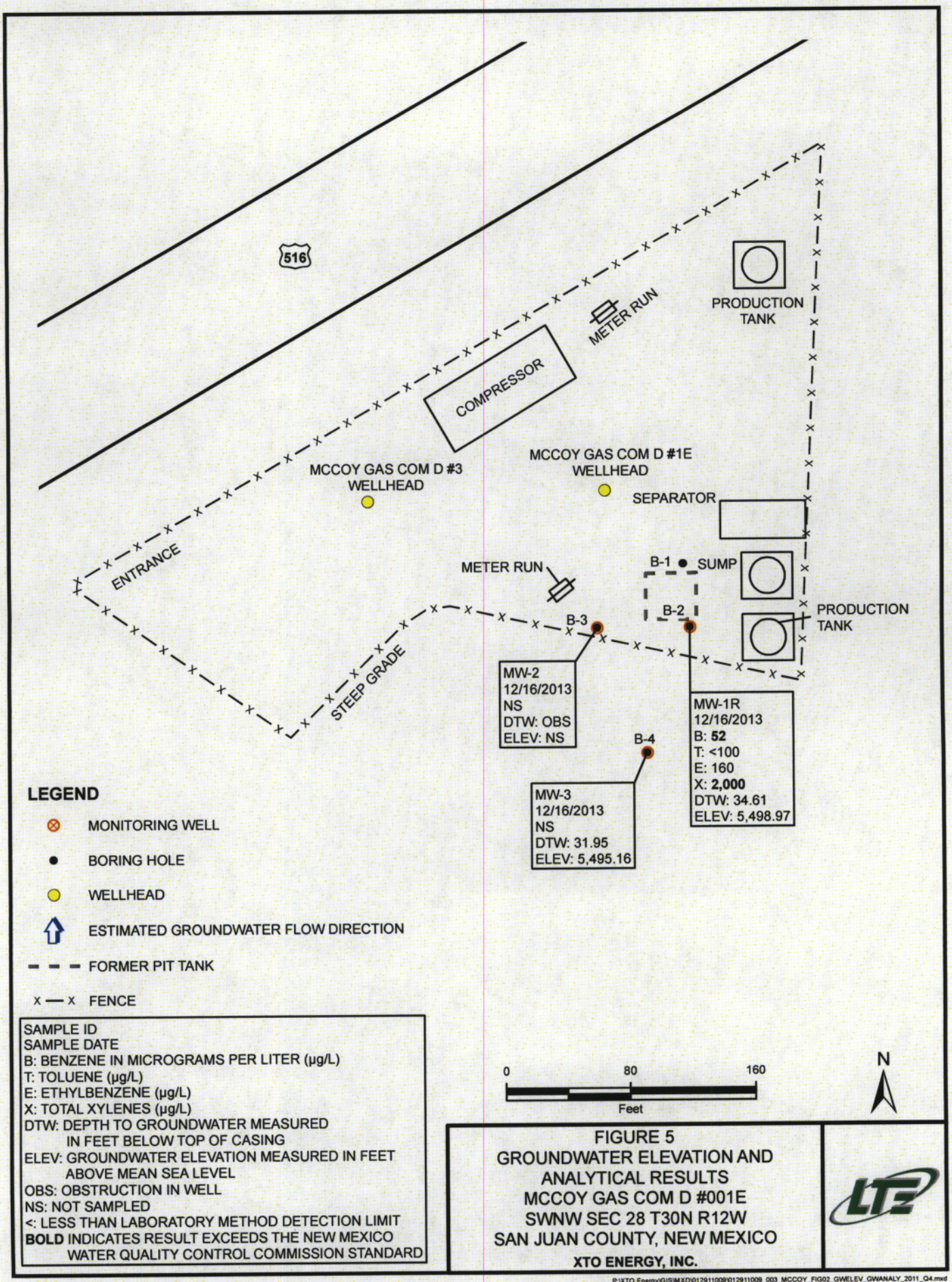

FIGURE 5
GROUNDWATER ELEVATION AND ANALYTICAL RESULTS
MCCOY GAS COM D #001E
SWNW SEC 28 T30N R12W
SAN JUAN COUNTY, NEW MEXICO
XTO ENERGY, INC.

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ATTACHMENT 1
ENVIROTECH, INC. SITE ASSESSMENT (1992)

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 (FLEA MARKET TO EAST)
SURFACE CONDITIONS: STEEL DOUBLE LINED TANK W/ SAND (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 @ 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.

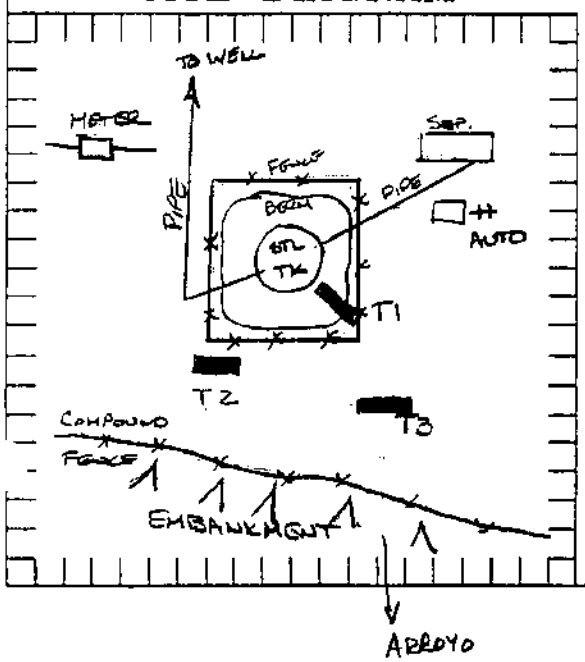
SAMPLE INVENTORY:

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		
		240
		188
TD	-	9'
GW	-	NR

TH#: 2

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

TH#: 3

SOIL TYPE:	SMPL TYPE:	OVM/TPH
SH/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

ATTACHMENT 2
BLAGG ENGINEERING, INC. FIELD REPORT (2006)

FLORA VISTA (FRD). NW 30045 24873 36.78677 / 108.10784

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

CLIENT: XTO

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: HOI (HERGR)

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: JFT 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

NEED TO ESTABLISH HORIZ. & VERT. EXTENT

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.

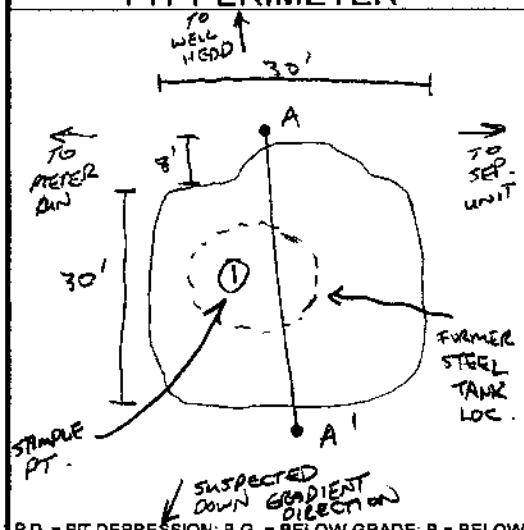
ADDITIONAL COMMENTS: ORIGINAL PIT DIMENSION 17'x19' W/ STEEL TANK ~ 5' BELOW GRADE.

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

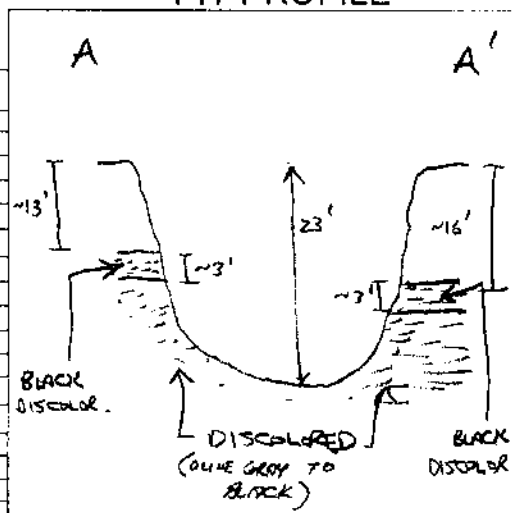
OVM READING

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

ATTACHMENT 3
COMPLETION DIAGRAMS AND BOREHOLE LOGS

MONITORING WELL INSTALLATION RECORD

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

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

Project Name XTO Ground Water
Project Number _____ Cost Code _____
Project Location McCoy Gas Com D 1E

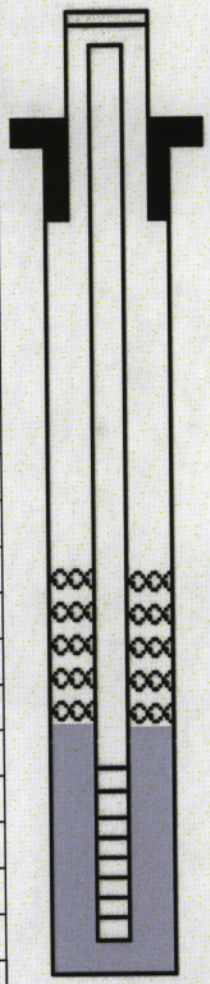
Elevation 5532
Well Location 36° 47.196' N, 108° 06.468' W
GWL Depth 34'
Installed By Envirotech

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

Date/Time Started 09/21/06, 15:23
Date/Time Completed 09/22/06, 10:35

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		2.9
Bottom of Protective Casing		-0.9
Top of Permanent Borehole Casing	Sch. 40 PVC	2.8
Bottom of Permanent Borehole Casing		-40.40
Top of Concrete	Concrete	.25
Bottom of Concrete		-5.0
Top of Grout		-5.0
Bottom of Grout		-16.0
Top of Well Riser	Sch. 40 PVC	2.8
Bottom of Well Riser		-39.95
Top of Well Screen	Sch. 40 PVC	-19.9
Bottom of Well Screen		-39.9
Top of Peltonite Seal	Bentonite	-16.0
Bottom of Peltonite Seal		-18.0
Top of Gravel Pack	Sand	-18.0
Bottom of Gravel Pack		-39.95
Top of Natural Cave-In	Sand	-39.95
Bottom of Natural Cave-In		-40
Top of Groundwater		-34.0
Total Depth of Borehole		-40



Top of Protective Casing 2.9
Top of Riser 2.8
Ground Surface 0

Top of Seal -16

Top of Gravel Pack -18
Top of Screen -19.9

Bottom of Screen -39.9
Bottom of Borehole -40

Comments: 50 lb bags of sand used: 18 ea.
50 lb bags of bentontie used: 6 ea.

Geologist Signature *Ashley L. Ager*

MONITORING WELL INSTALLATION RECORD

Borehole # 3
Well # MW-2
Page 1 of 1

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

Project Name XTO Ground Water
Project Number _____ Cost Code _____
Project Location McCoy Gas Com D 1E

Elevation 5525
Well Location 36° 47.194' N, 108° 06.474' W
GWL Depth 32.5'
Installed By Enviro-Drill

On-Site Geologist Ashley Ager
Personnel On-Site _____
Contractors On-Site Shad Betts, Rodney Begay
Client Personnel On-Site _____

Date/Time Started 05/08/07, 12:27
Date/Time Completed 05/08/07, 13:55

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		3
Bottom of Protective Casing	steel	-2
Top of Permanent Borehole Casing		NA
Bottom of Permanent Borehole Casing		NA
Top of Concrete	quikcrete	0.2
Bottom of Concrete		-0.8
Top of Grout	quikcrete and quikgrout	-0.8
Bottom of Grout		-23
Top of Well Riser	Sch. 40 PVC	2.5
Bottom of Well Riser		-42.4
Top of Well Screen	Sch. 40 PVC	-27.2
Bottom of Well Screen		-42.2
Top of Peltonite Seal	3/8" Bentonite hole plug	-23
Bottom of Peltonite Seal		-25
Top of Gravel Pack	10-20 grade silica sand	-25
Bottom of Gravel Pack		-42.4
Top of Natural Cave-In	Sand and cobbles	-42.4
Bottom of Natural Cave-In		-45
Top of Groundwater		-32.5
Total Depth of Borehole		-42.4

Top of Protective Casing 3
Top of Riser 2.5
Ground Surface 0

Top of Seal -23

Top of Gravel Pack -25
Top of Screen -27.2

Bottom of Screen -42.2
Bottom of Borehole -42.4

Comments: PVC riser pulled out of hole 2'8" while pulling auger.
50 lb bags of sand used: 6 ea. , 50 lb bags of bentonite used: 1 ea., Grout: 1 bag bentonite, 1 bag quikcrete; concrete: 1 bag of quikcrete used

Geologist Signature *Ashley L. Ager*

MONITORING WELL INSTALLATION RECORD

Borehole # 4
Well # MW-3
Page 1 of 1

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

Project Name XTO Ground Water
Project Number _____ Cost Code _____
Project Location McCoy Gas Com D 1E

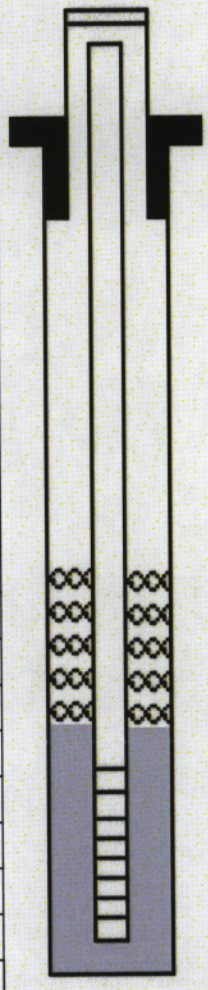
Elevation 5525
Well Location 36° 47.181' N, 108° 06.462' W
GWL Depth 24'
Installed By Enviro-Drill

On-Site Geologist Ashley Ager
Personnel On-Site
Contractors On-Site Shad Betts, Rodney Begay
Client Personnel On-Site

Date/Time Started 05/09/07, 1209
Date/Time Completed 05/09/07, 1740

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		2.5
Bottom of Protective Casing	steel	-2.5
Top of Permanent Borehole Casing		NA
Bottom of Permanent Borehole Casing		NA
Top of Concrete	quikcrete	0.2
Bottom of Concrete		-1
Top of Grout	quikcrete and quikgrout	-1
Bottom of Grout		-17
Top of Well Riser	Sch. 40 PVC	2.2
Bottom of Well Riser		-32
Top of Well Screen	Sch. 40 PVC	-21.8
Bottom of Well Screen		-31.8
Top of Peltonite Seal	3/8" Bentonite hole plug	-17
Bottom of Peltonite Seal		-19
Top of Gravel Pack	10-20 grade silica sand	-19
Bottom of Gravel Pack		-32
Top of Natural Cave-In		NA
Bottom of Natural Cave-In		NA
Top of Groundwater		-24
Total Depth of Borehole		-32



Top of Protective Casing 2.5
Top of Riser 2.2
Ground Surface 0

Top of Seal -17

Top of Gravel Pack -19
Top of Screen -21.8

Bottom of Screen -31.8
Bottom of Borehole -32

Comments: Hole caved in while installing bentonite plug. Had to auger out cave in mixed with bentonite to reform seal. 50 lb bags of sand used: 4.5 ea. , 50 lb bags of bentonite used: 2 ea., Grout: 2 bags bentonite, 2 bags quikcrete; concrete: 1 bag of quikcrete

Geologist Signature *Ashley L. Ager*

ATTACHMENT 4
2013 LABORATORY REPORTS

ESC
LAB SCIENCES
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

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

Report Summary

Thursday March 21, 2013

Report Number: L625291
Samples Received: 03/15/13
Client Project:

Description: McCoy GC D 1E

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: Alan Harvill

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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: 060307, 060308, and 060309.

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Fax (615) 758-5859

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REPORT OF ANALYSIS

March 21, 2013

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

ESC Sample # : L625291-01

Date Received : March 15, 2013
Description : McCoy GC D 1E

Site ID :

Sample ID : MW-1R

Project # :

Collected By : Kyla Vaughan
Collection Date : 03/14/13 14:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.098	0.025	mg/l	8021B	03/21/13	50
Toluene	BDL	0.25	mg/l	8021B	03/21/13	50
Ethylbenzene	BDL	0.025	mg/l	8021B	03/21/13	50
Total Xylene	7.1	0.075	mg/l	8021B	03/21/13	50
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021B	03/21/13	50

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

.
Reported: 03/21/13 17:10 Printed: 03/21/13 17:10

Summary of Remarks For Samples Printed
03/21/13 at 17:10:29

TSR Signing Reports: 288
R5 - Desired TAT

Domestic Water Well Sampling-see L609759 Lobato for tests

Sample: L625291-01 Account: XTORNM Received: 03/15/13 09:00 Due Date: 03/22/13 00:00 RPT Date: 03/21/13 17:10

ESC LAB SCIENCES
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Tax I.D. 62-0814289

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XTO Energy - San Juan Division
James McDaniel
382 County Road 3100

Aztec, NM 87410

Quality Assurance Report
Level II

L625291

March 21, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Benzene	< .0005	mg/l			WG652020	03/21/13 05:31
Ethylbenzene	< .0005	mg/l			WG652020	03/21/13 05:31
Toluene	< .005	mg/l			WG652020	03/21/13 05:31
Total Xylene	< .0015	mg/l			WG652020	03/21/13 05:31
a,a,a-Trifluorotoluene(PID)		% Rec.	100.3	55-122	WG652020	03/21/13 05:31

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Benzene	mg/l	.05	0.0484	96.7	79-114	WG652020
Ethylbenzene	mg/l	.05	0.0493	98.7	80-116	WG652020
Toluene	mg/l	.05	0.0485	97.0	79-112	WG652020
Total Xylene	mg/l	.15	0.151	101.	84-118	WG652020
a,a,a-Trifluorotoluene(PID)				102.9	55-122	WG652020

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Benzene	mg/l	0.0457	0.0484	91.0	79-114	5.60	20	WG652020
Ethylbenzene	mg/l	0.0464	0.0493	93.0	80-116	6.09	20	WG652020
Toluene	mg/l	0.0456	0.0485	91.0	79-112	6.09	20	WG652020
Total Xylene	mg/l	0.143	0.151	95.0	84-118	5.91	20	WG652020
a,a,a-Trifluorotoluene(PID)				102.1	55-122			WG652020

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzene	mg/l	0.0496	0	.05	99.2	35-147	L625975-08	WG652020
Ethylbenzene	mg/l	0.0508	0	.05	102.	39-141	L625975-08	WG652020
Toluene	mg/l	0.0503	0	.05	101.	35-148	L625975-08	WG652020
Total Xylene	mg/l	0.156	0	.15	104.	33-151	L625975-08	WG652020
a,a,a-Trifluorotoluene(PID)					102.4	55-122		WG652020

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/l	0.0510	0.0496	102.	35-147	2.72	20	L625975-08	WG652020
Ethylbenzene	mg/l	0.0521	0.0508	104.	39-141	2.49	20	L625975-08	WG652020
Toluene	mg/l	0.0509	0.0503	101.	35-148	1.18	20	L625975-08	WG652020
Total Xylene	mg/l	0.159	0.156	106.	33-151	1.57	20	L625975-08	WG652020
a,a,a-Trifluorotoluene(PID)				103.0	55-122				WG652020

Batch number /Run number / Sample number cross reference

WG652020: R3591899: L625291-01

* * 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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XTO Energy - San Juan Division
James McDaniel
382 County Road 3100

Aztec, NM 87410

Quality Assurance Report
Level II

L625291

March 21, 2013

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.

XTO Energy, Inc
382 County Road 3100
Aztec NM 87410

Billing Information: XTORNM031810S

Report to: James McDaniel

Email to: james_mcdaniel@xtoenergy.com

Project Description: McCoy GC D #1E

City/State Collected:

Phone: 505-333-3701
FAX:

Client Project #:

ESC Key:

Collected by: Kyla Vaughan

Site/Facility ID#:

P.O.#:

Collected by (signature): K Vaughan

Immediately Packed on Ice N Y

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%
____ Three Day.....25%

Date Results Needed:

Email? __No __Yes

FAX? __No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	BTEX 8021	Remarks/Contaminant	Sample # (lab only)
MW-1R		GW		3/14/13	4:35	1	✓	L625291	-01

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
K Vaughan	3/14/13	15:18	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____

Temp: 2.6°C

Bottles Received: 4

Date: 3/15/13

Time: 0900

Condition: (lab use only) OK SR

CoC Seals Intact ___ Y ___ N ___ NA

pH Checked:

NCF:

Chain of Custody Page 1 of 1

ESC LAB SCIENCES
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

CoCode XTORNM (lab use only)

Template/Prelogin

Shipped Via:

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Est. 1970

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

Report Summary

Wednesday June 26, 2013

Report Number: L641993
Samples Received: 06/18/13
Client Project:

Description: McCoy GC D 1E

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 - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

June 26, 2013

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

ESC Sample # : L641993-01

Date Received : June 18, 2013
Description : McCoy GC D 1E

Site ID : MCCOY GC D 1E

Sample ID : MW-1R 30FT

Project # :

Collected By :
Collection Date : 06/17/13 15:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.066	0.025	mg/l	8021B	06/25/13	50
Toluene	BDL	0.25	mg/l	8021B	06/25/13	50
Ethylbenzene	0.094	0.025	mg/l	8021B	06/25/13	50
Total Xylene	4.5	0.075	mg/l	8021B	06/25/13	50
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	98.3		% Rec.	8021B	06/25/13	50

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

.
Reported: 06/26/13 15:41 Printed: 06/26/13 15:41

Summary of Remarks For Samples Printed
06/26/13 at 15:41:58

TSR Signing Reports: 288
R5 - Desired TAT

Domestic Water Well Sampling-see L609759 Lobato for tests EDD's

Sample: L641993-01 Account: XTORNM Received: 06/18/13 09:00 Due Date: 06/25/13 00:00 RPT Date: 06/26/13 15:41

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12065 Lebanon Rd.
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

XTO Energy - San Juan Division
James McDaniel
382 Road 3100

Aztec, NM 87410

Quality Assurance Report
Level II

L641993

June 26, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Benzene	< .0005	mg/l			WG668260	06/25/13 18:13
Ethylbenzene	< .0005	mg/l			WG668260	06/25/13 18:13
Toluene	< .005	mg/l			WG668260	06/25/13 18:13
Total Xylene	< .0015	mg/l			WG668260	06/25/13 18:13
a,a,a-Trifluorotoluene(PID)		% Rec.	98.01	55-122	WG668260	06/25/13 18:13

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Benzene	mg/l	.05	0.0446	89.2	79-114	WG668260
Ethylbenzene	mg/l	.05	0.0466	93.3	80-116	WG668260
Toluene	mg/l	.05	0.0454	90.8	79-113	WG668260
Total Xylene	mg/l	.15	0.137	91.6	84-118	WG668260
a,a,a-Trifluorotoluene(PID)				98.13	55-122	WG668260

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Benzene	mg/l	0.0457	0.0446	91.3	79-114	2.45	20	WG668260
Ethylbenzene	mg/l	0.0473	0.0466	94.3	80-116	1.28	20	WG668260
Toluene	mg/l	0.0458	0.0454	91.3	79-113	0.870	20	WG668260
Total Xylene	mg/l	0.138	0.137	92.0	84-118	0.500	20	WG668260
a,a,a-Trifluorotoluene(PID)				98.38	55-122			WG668260

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	L642885-02	WG668260
Ethylbenzene	mg/l	0.0520	0	.05	104.	39-141	L642885-02	WG668260
Toluene	mg/l	0.0510	0.000247	.05	101.	35-148	L642885-02	WG668260
Total Xylene	mg/l	0.154	0.000253	.15	103.	33-151	L642885-02	WG668260
a,a,a-Trifluorotoluene(PID)					97.84	55-122		WG668260

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/l	0.0456	0.0495	91.2	35-147	8.27	20	L642885-02	WG668260
Ethylbenzene	mg/l	0.0477	0.0520	95.3	39-141	8.69	20	L642885-02	WG668260
Toluene	mg/l	0.0460	0.0510	91.5	35-148	10.3	20	L642885-02	WG668260
Total Xylene	mg/l	0.140	0.154	93.1	33-151	9.73	20	L642885-02	WG668260
a,a,a-Trifluorotoluene(PID)				97.94	55-122				WG668260

Batch number /Run number / Sample number cross reference

WG668260: R2720380: L641993-01

* * 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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XTO Energy - San Juan Division
James McDaniel
382 Road 3100

Aztec, NM 87410

Quality Assurance Report
Level II

L641993

June 26, 2013

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 also calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

B056

Chain of Custody
Page 1 of 1

Company Name/Address	Alternate Billing	Analysis/Container/Preservative
XTO Energy, Inc. **382 County Road 3100** **Aztec, NM 87410**	XTORNM031810S Report to: James McDaniel E-mail to james_mcdaniel@xtoenergy.com	BTEX 8021

Prepared by:

ENVIRONMENTAL Science corp
12065 Lebanon Road
Mt. Juliet TN 37122
Phone (615)758-5858
Phone (800) 767-5859
FAX (615)758-5859

Project Description: McCoy GC D#1E	City/State Collected: Flora Vista, NM	CoCode (lab use only): XTORNM	
PHONE: 505 333-3701 FAX:	Client Project No.	Lab Project #	Template/Prelogin
Collected by: Brooke Herb	Site/Facility ID#: McCoy GC D#1E	P.O.#	Shipped Via: Fed Ex
Collected by(signature):	Rush? (Lab MUST be Notified) ____Next Day.....100% ____Two Day.....50% ____Three Day.....25%	Date Results Needed: Standard Email? ___No_X__Yes FAX? ___No__Yes	No of Cntrs
Packed on Ice N__ Y X			

Sample ID	Comp/Grab	Matrix	Depth	Date	Time	No of Cntrs	Remarks/contaminant	Sample # (lab only)
MW-1R	Grab	GW	30'	6/17/13	1515	3 ✓	164193	-01

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

Remarks: "ONLY 1 COC Per Site!!" 505-632-1107 Flow_____ Other_____

Relinquished by (Signature)	Date	Time	Received by (Signature)	Samples returned via FedEx_X_ UPS__Other__	Condition (lab use only)
	6/17/13	1700			NS
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Temp: 3.1 / Bottles Received: 3 rup	OK
Relinquished by (Signature)	Date:	Time:	Received for lab by: (Signature)	Date 6-18-13 / Time 0900	pH Checked: NCF:

NS

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Est. 1970

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

Report Summary

Wednesday September 18, 2013

Report Number: L657041
Samples Received: 09/12/13
Client Project:

Description: McCoy GC D 1 E

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 - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW2i704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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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Est. 1970

REPORT OF ANALYSIS

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

September 18, 2013

ESC Sample # : L657041-01

Site ID :

Project # :

Date Received : September 12, 2013
Description : McCoy GC D 1 E

Sample ID : MCCOY G C D 1 E

Collected By : Morgan Wagoner
Collection Date : 09/11/13 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.033	0.0025	mg/l	8021B	09/17/13	5
Toluene	BDL	0.025	mg/l	8021B	09/17/13	5
Ethylbenzene	0.076	0.0025	mg/l	8021B	09/17/13	5
Total Xylene	0.84	0.0075	mg/l	8021B	09/17/13	5
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021B	09/17/13	5

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

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Reported: 09/18/13 11:12 Printed: 09/18/13 11:12

Summary of Remarks For Samples Printed
09/18/13 at 11:12:37

TSR Signing Reports: 288
R5 - Desired TAT

Domestic Water Well Sampling-see L609759 Lobato for tests EDD's on ALL projects email James, Kurt and Logan all reports

Sample: L657041-01 Account: XTORNM Received: 09/12/13 09:00 Due Date: 09/19/13 00:00 RPT Date: 09/18/13 11:12

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Est. 1970

XTO Energy - San Juan Division
James McDaniel
382 County Road 3100

Aztec, NM 87410

Quality Assurance Report
Level II

L657041

September 18, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Benzene	< .0005	mg/l			WG682147	09/17/13 15:27
Ethylbenzene	< .0005	mg/l			WG682147	09/17/13 15:27
Toluene	< .005	mg/l			WG682147	09/17/13 15:27
Total Xylene	< .0015	mg/l			WG682147	09/17/13 15:27
a,a,a-Trifluorotoluene(PID)		% Rec.	102.0	55-122	WG682147	09/17/13 15:27

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Benzene	mg/l	.05	0.0595	119.	70-130	WG682147
Ethylbenzene	mg/l	.05	0.0571	114.	70-130	WG682147
Toluene	mg/l	.05	0.0594	119.	70-130	WG682147
Total Xylene	mg/l	.15	0.175	116.	70-130	WG682147
a,a,a-Trifluorotoluene(PID)				101.0	55-122	WG682147

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Benzene	mg/l	0.0574	0.0595	115.	70-130	3.52	20	WG682147
Ethylbenzene	mg/l	0.0552	0.0571	110.	70-130	3.38	20	WG682147
Toluene	mg/l	0.0572	0.0594	114.	70-130	3.76	20	WG682147
Total Xylene	mg/l	0.168	0.175	112.	70-130	3.74	20	WG682147
a,a,a-Trifluorotoluene(PID)				100.0	55-122			WG682147

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzene	mg/l	0.0517	0.0	.05	100.	57.2-131	L657287-17	WG682147
Ethylbenzene	mg/l	0.0498	0.0	.05	100.	67.6-135	L657287-17	WG682147
Toluene	mg/l	0.0526	0.0	.05	100.	63.7-134	L657287-17	WG682147
Total Xylene	mg/l	0.153	0.000336	.15	100.	65.9-138	L657287-17	WG682147
a,a,a-Trifluorotoluene(PID)					100.0	55-122		WG682147

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/l	0.0571	0.0517	114.	57.2-131	9.91	20	L657287-17	WG682147
Ethylbenzene	mg/l	0.0547	0.0498	110.	67.6-135	9.40	20	L657287-17	WG682147
Toluene	mg/l	0.0572	0.0526	114.	63.7-134	8.40	20	L657287-17	WG682147
Total Xylene	mg/l	0.168	0.153	112.	65.9-138	9.13	20	L657287-17	WG682147
a,a,a-Trifluorotoluene(PID)				101.0	55-122				WG682147

Batch number /Run number / Sample number cross reference

WG682147: R2618840: L657041-01

* * 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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XTO Energy - San Juan Division
James McDaniel
382 County Road 3100

Aztec, NM 87410

Quality Assurance Report
Level II

L657041

September 18, 2015

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.

XTO ENERGY
Western Division

Quote Number: XTO Navajo	Page 1 of 1	
XTO Contact: James McDaniel	XTO Contact Phone #: 505-333-3701	
Email Results to: james_mcdaniel@xtoenergy.com		
Well Site/Location: Navajo GC D#1E	API Number:	Test Reason: Quarterly Sample
Collected By: Morgan Wagoner	Samples on Ice (Y/N):	Turnaround: X Standard; ___ Next Day; ___ Two Day; ___ Three Day; ___ Std. 5 Bus. Days (by contract); Date Needed ___
Company: LT Environmental	QA/QC Requested: Standard	
Signature: Morgan Wagoner	Gray Areas for Lab Use Only!	

Analysis: BTEX 8021

Lab Information

Office Abbreviations
Farmington = FAR
Durango = DUR
Bakken = BAK
Raton = RAT
Piceance = PC
Roosevelt = RSV
La Barge = LB
Orangeville = OV

Sample ID	Sample Name	Media	Date	Time	Preservative	No. of Conts.	Sample Number
navy GC D#1E	MW-1E	GW	9.11.13	1400	HCl	3	X

Media: Filter = F Soil = S Wastewater = WW Groundwater = GW Drinking Waster = DW Sludge = SG Surface Water = SW Air = A Drill Mud = DM Other = OT

Relinquished By: (Signature) Morgan Wagoner	Date: 9-11-13	Time: 1600	Received By: (Signature)	Number of Bottles	Sample Condition
Relinquished By: (Signature)	Date:	Time:	Received By: (Signature)	Temperature:	Other Information
Relinquished By: (Signature)	Date:	Time:	Received for Lab by: (Signature)	Date: / Time:	

Comments

* Sample ID will be the office and sampler-date-military time FARJM-MMDDYY-1200

0226

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Est. 1970

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

Report Summary

Tuesday December 24, 2013

Report Number: L674372
Samples Received: 12/17/13
Client Project:

Description: McCoy GCD 1E

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: John Hawkins

John Hawkins , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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

December 24, 2013

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

ESC Sample # : L674372-01

Date Received : December 17, 2013
Description : McCoy GCD 1E

Site ID :

Sample ID : FARDN-121613-1430

Project # :

Collected By :
Collection Date : 12/16/13 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.052	0.010	mg/l	8021B	12/23/13	20
Toluene	BDL	0.10	mg/l	8021B	12/23/13	20
Ethylbenzene	0.16	0.010	mg/l	8021B	12/23/13	20
Total Xylene	2.0	0.030	mg/l	8021B	12/23/13	20
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021B	12/23/13	20

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

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Reported: 12/24/13 09:42 Printed: 12/24/13 09:43

Summary of Remarks For Samples Printed
12/24/13 at 09:43:03

TSR Signing Reports: 288
R5 - Desired TAT

Domestic Water Well Sampling-see L609759 Lobato for tests EDD's on ALL projects email James, Kurt and Logan all reports

Sample: L674372-01 Account: XTORNM Received: 12/17/13 10:00 Due Date: 12/24/13 00:00 RPT Date: 12/24/13 09:42

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Est. 1970

XTO Energy - San Juan Division
James McDaniel
382 County Road 3100

Aztec, NM 87410

Quality Assurance Report
Level II

L674372

December 24, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Benzene	< .0005	mg/l			WG698699	12/23/13 15:55
Ethylbenzene	< .0005	mg/l			WG698699	12/23/13 15:55
Toluene	< .005	mg/l			WG698699	12/23/13 15:55
Total Xylene	< .0015	mg/l			WG698699	12/23/13 15:55
a,a,a-Trifluorotoluene(PID)		% Rec.	103.0	55-122	WG698699	12/23/13 15:55

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Benzene	mg/l	.05	0.0413	82.9	70-130	WG698699
Ethylbenzene	mg/l	.05	0.0418	83.7	70-130	WG698699
Toluene	mg/l	.05	0.0410	81.9	70-130	WG698699
Total Xylene	mg/l	.15	0.128	85.1	70-130	WG698699
a,a,a-Trifluorotoluene(PID)				100.0	55-122	WG698699

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Benzene	mg/l	0.0426	0.0413	85.0	70-130	3.14	20	WG698699
Ethylbenzene	mg/l	0.0439	0.0418	88.0	70-130	4.82	20	WG698699
Toluene	mg/l	0.0425	0.0410	85.0	70-130	3.62	20	WG698699
Total Xylene	mg/l	0.134	0.128	89.0	70-130	4.97	20	WG698699
a,a,a-Trifluorotoluene(PID)				101.0	55-122			WG698699

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzene	mg/l	0.0408	0.000289	.05	81.0	57.2-131	L675389-11	WG698699
Ethylbenzene	mg/l	0.0416	0.0000369	.05	83.0	67.5-135	L675389-11	WG698699
Toluene	mg/l	0.0405	0.0000713	.05	81.0	63.7-134	L675389-11	WG698699
Total Xylene	mg/l	0.127	0.000188	.15	84.0	65.9-138	L675389-11	WG698699
a,a,a-Trifluorotoluene(PID)					98.70	55-122		WG698699

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/l	0.0448	0.0408	89.1	57.2-131	9.45	20	L675389-11	WG698699
Ethylbenzene	mg/l	0.0457	0.0416	91.3	67.5-135	9.39	20	L675389-11	WG698699
Toluene	mg/l	0.0444	0.0405	88.6	63.7-134	9.12	20	L675389-11	WG698699
Total Xylene	mg/l	0.139	0.127	92.3	65.9-138	8.91	20	L675389-11	WG698699
a,a,a-Trifluorotoluene(PID)				101.0	55-122				WG698699

Batch number /Run number / Sample number cross reference

WG698699: R2871298: L674372-01

* * 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.'

ESC
LAB SCIENCES
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(615) 758-5858
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Est. 1970

XTO Energy - San Juan Division
James McDaniel
382 County Road 3100

Aztec, NM 87410

Quality Assurance Report
Level II

L674372

December 24, 2013

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.

F249

XTO ENERGY
Western Division

Quote Number: XTO	Page 1 of 1
XTO Contact: James McDaniel	XTO Contact Phone #: 505-333-3701
Email Results to: James.mcdaniel@xtoenergy.com	
Well Site/Location: McCoy GCD #1E	API Number: 30-045-24873
Collected By: Daniel Newman	Samples on Ice: (Y) N
Company: LT Environmental	QA/QC Requested: Standard
Signature:	Gray Areas for Lab Use Only!

Test Reason: Quarterly GW

Turnaround:
- X Standard
- ___ Next Day
- ___ Two Day
- ___ Three Day
- ___ Std. 5 Bus. Days (by contract)

Date Needed: _____

Analysis: BTEX 8021

Lab Information

Office Abbreviations
Farmington = FAR
Durango = DUR
Bakken = BAK
Raton = RAT
Piceance = PC
Roosevelt = RSV
La Barge = LB
Orangeville = OV

Sample ID	Sample Name	Media	Date	Time	Preservative	No. of Conts.	Sample Number
FARDW-121613-1430	MW-1R	GW	12/16/13	1430	HCL	3	1674372 -01

Media: Filter = F Soil = S Wastewater = WW Groundwater = GW Drinking Waster = DW Sludge = SG Surface Water = SW Air = A Drill Mud = DM Other = OT

Relinquished By: (Signature)	Date: 12/16/13	Time: 1630	Received By: (Signature)	Number of Bottles	Sample Condition
Relinquished By: (Signature)	Date:	Time:	Received By: (Signature)	Temperature: 3.4c	Other Information
Relinquished By: (Signature)	Date:	Time:	Received for Lab by: (Signature)	Date: 12/17/13 Time: 1000	

Comments: Count = 3 TD

* Sample ID will be the office and sampler-date-military time FARJM-MMDDYY-1200

5435 5511 4370 0213

ATTACHMENT 5
2013 FIELD NOTES

McCoy GC D#1E 2/19/2013

MW-1R

leave office 13:22
arrive site 13:43

Review HASP + JSA Sign
Sunny 51°

DTP = 35.93
DTW = 36.01
Sock 60% Sat.

14:06 leave site to head to GBR to drain sock

1430 leave GBR back to office not enough to [illegible] backend pit.

McCoy GC D#1E 3/4/2013

MW-1R

leave office 8:37 am
arrive site 8:56

Review HASP + JSA

Sunny 39°

DTP = 37.33
DTW = 37.46
Sock not really saturated.
Didn't change sock. Put in well much further.

Smell of Product on Probe

Water Sample Collection Form

Sample Location	McCoy GC D #1E	Client	XTO
Sample Date	3/14/13	Project Name	Groundwater Sampling
Sample Time	14:35	Project #	012911009.003
Sample ID	MW-1R	Sampler	K. Vaughan
Analyses	BTEX 8021		
Matrix	Groundwater	Laboratory	ESC
Turn Around Time	Standard	Shipping Method	Fed Ex, Hand delivery
Trip Blank	No	Other QA/QC	None
Depth to Water	38.31	TD of Well	38.78
Time	12:15	Depth to Product	—
Vol. of H2O to purge	0.47 x .1631 = 0.076 x 3 = 0.229		

*(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols*

Method of Purging: Disposable Bailer

Method of Sampling: Disposable Bailer

Time	Vol. Removed (gal.)	Total Vol H2O removed (gal.)	pH (std. units)	Temp. (C)	Conductivity (us or ms)	Comments
12:30	Bailed		N/A	N/A	N/A	
		dry @ .08 → let recharge - head to				
	Federal + Come back for grab sample.					
Leave site	12:32					
Back on Site	14:24					
Can only get one vial full - tried several						
times for more, well still dry.						
Need New Bailer + twine on next visit.						
	Sample 1 vial @ 14:35					
	Put in a new PR Sock. Leave site 14:40					
didn't get a reading of product on probe but when						
brought it out of well, visible product on probe.						
& odor						

3/7/13 →

Comments: arrive site @ 13:45 Review + Sign JSA. Remove PR Sock 7090

DO: 24.7 Date: 3/7/13 Time: 14:11 Saturated for clay to dump fluid

17.3c 14:19 Head to GBR to Wring Sock 14.55 Head back to

3/14/13 arrive site 11:39 Sign JSA. No Addl Hazards

DO: 3.91 16.5c 12:10

Describe Deviations from SOP:

Signature: Kyla Vaughan **Date:** 3/14/13

Field Notes

Site Name McCoy GC D # 1E

Date 9/27/2013 **Project Number**

Well Name MW-1R

Comments Arrive site @ 15:24

Sunny 66° Review + Sign JSA
Pull PR Sock
DTW = 38.65

No reading on DTP. Strong smell & product odor on sock. Sock only saturated 10-15%
Returned same sock back into well.

leave [redacted] site @ 15:42

Kyla Vaughan

Field Notes

Site Name McCoy Gas Com D #1E

Date 4/12/2013 **Project Number** 012911009-003

Well Name MW-1R

Comments Arrive Site @ 13:07 Sunny 57° had rain last couple of days, location still really wet + muddy
- Review + sign JSA
- Pull PR Sock - covered black 65% Saturated ~~75%~~
- DTW = 38.68 NO Reading on DTP
Product color - Replaced PR Sock w/ new PR Sock
⇒ 13:32 head to GBR to drain PR Sock.
⇒ 13:54 head back to McCoy to ~~empty~~ bucket from Sock.
14:35 ~~pump~~ dumped product ⇒ head back to office

Signature: Kyla Vaughan

Water Level Data Collection Form

Project Name: XTO Groundwater Monitoring
Project Number: 012911009
Date: 3/14/2013
Employee Name: Kyla Vaughan

Well ID	Depth to Product (ft)	Depth to Water (ft)	Dissolved Oxygen (mg/L)	Comments
Valdez A #1E				
MW-1	—	13.69	—	9:55
MW-3	—	13.77	—	9:59
MW-6	—	10.01	—	10:03
Federal GC H #1	MW-2 was stuck had hard time getting lid off			
MW-2	—	32.67	—	14:02
MW-3R	—	34.97	—	12:56
McCoy GC D #1E				Prod on bottom in dirt
MW-2	—	DRY	—	TD=37.28
MW-3	—	DRY	—	TD=32.61
Rowland GC #1				
MW-3	N/A			
MW-4R				
MW-6				

Field Notes

Site Name McCoy Gas Com D #1E

Date 4/27/2013 **Project Number** 012911009-003

Well Name MW-1R

Comments Arrive site @ 14:33. Review + Sign JSA. No add'l hazards.
Check PR Sock, 100% Saturated.
DTW = 31.31 No reading on DTP ⇒ slight odor + product on probe. Place New PR Sock in Well.
Leave site @ 14:49 head to GBR to wring sock + dispose.
Arrive back @ McCoy @ 15:32 to dump liquids from PR Sock. Leave site for office.

Signature: Kyla Vaughan

COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental, I
2243 Main Avenue, S
Durango, Colorado 8
T 970.385.1096 / F

Water Level Data Collection Form

Project Name: McCoy Gas Com D# 1E
Project Number: 012911009
Date: 6/17/13
Employee Name: Brooke Herb

Well ID	Depth to Product (ft)	Depth to Water (ft)	Dissolved Oxygen (mg/L)	Comments
MW-1R	NA	28.05	3.86	Strong HC odor
MW-2	NA	29.45	NM	—
MW-3	NA	20.80	NM	—

COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmen
2243 Main Aven
Durango, Colora
T 970.385.1096 /
970.385.1873

Water Sample Collection Form

Project Name XTO Groundwater Monitoring

Project Number 12911007

Site Name McCoy GasCom D #1E

Sampler Brooke Herb

Sample Date 6/17/13

Matrix Groundwater

Analyses 8021 BTEX

Laboratory ESC

Turn Around Time Standard

Shipping FedEx

Trip Blank No

Method of Purging Dedicated bailer

Method of Sampling Purge 3 volumes or bail dry 10.76 x.16 = 1.72 x 3 = 5.17

Sample ID	Depth to Water (ft)	Total Depth (ft)	Vol to Purge (gal)*	Actual Vol Purged (gal)	Sample Time	Comments
MW-1R	28.05	38.81	5.17	5.25	1515	yellowish gray HC odor slight sheen

*(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols

Comments

Signature: [signature]

Date: 6/17/13

COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental,
2243 Main Avenue,
Durango, Colorado
T 970.385.1096 / F

Water Level Data Collection Form

Project Name: McCoy Gas Com D # 001E
Project Number: 12911007
Date: 9-11-13
Employee Name: Morgan Wagoner

Well ID	Depth to Product (ft)	Depth to Water (ft)	Dissolved Oxygen (mg/L)	Comments
mw-2	ND	31.11	NM	
mw-3	ND	22.75	NM	
mw-1R	ND	29.11	4.1	sampled at 1400

COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental, Inc.
2243 Main Avenue, Suite 3
Durango, Colorado 81301
T 970.385.1096 / F
970.385.1873

Water Sample Collection Form

Project Name XTO Groundwater Monitoring

Project Number 12911007

Site Name McCoy Gas Com D #001E

Sampler Morgan Wagoner

Sample Date 9-11-13

Matrix Groundwater

Analyses 8021 BTEX

Laboratory ESC

Turn Around Time Standard

Shipping FedEx

Trip Blank No

Method of Purging Dedicated bailer

Method of Sampling Purge 3 volumes or bail dry

Sample ID	Depth to Water (ft)	Total Depth (ft)	Vol to Purge (gal)*	Actual Vol Purged (gal)	Sample Time	Comments
MW-1R	29.11	38.81	4.74	5	1400	

*(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols

Comments

Signature: Morgan Wagoner

Date: 9-11-13

Water Sample Collection Form

Sample Location: McCoy GC D#15
Sample Date: 12/16/13
Sample Time: 1430
Sample ID: MW-1R
Analyses: BTEX 8021
Matrix: GW
Turn Around Time: Standard
Trip Blank: ~~34.61~~ DW NO
Depth to Water: 34.61
Time: 1405
Vol. of H2O to purge: 38.79-34.61-4.18x0.1631=0.681758x3=2.045
(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols
Method of Purging: Bailer
Method of Sampling: Bailer

Client: XTO
Project Name: Groundwater Sampling
Project #: 0129 11009
Sampler: DW
Laboratory: ESC
Shipping Method: Fed Ex
Other QA/QC: Standard
TD of Well: 38.79
Depth to Product: N/A

Time	Vol. Removed (gal.)	Total Vol H2O removed (gal.)	pH (std. units)	Temp. (F)	Conductivity (us or ms)	Comments	PPM
1405	0.25	0.25	6.43	61.2	1172	Sheen, Black, Cloudy, HC odor	585
	0.25	0.50	6.35	61.2	1175	no change	589
	0.25	0.75	6.38	61.2	1134	"	567
	0.25	1.00	6.32	61.0	1085	sheen, Black, cloudy, HC odor, strong	543
	0.25	1.25	6.33	61.0	1101	no change	549
	0.25	1.50	6.31	60.6	1070	"	535
	0.25	1.75	6.32	60.9	1089	"	540
	0.25	2.00	6.30	60.6	1075	"	538

Comments: ~~Water~~ replace PIG sock with new sock Water Put in on site recovery container. The top of the well needs a new plug. The current one is broken.

Describe Deviations from SOP: No

Signature: [signature]
Date: 12/16/13