3R - 386

2010 AGWMR

MAR 2011

2010 ANNUAL GROUNDWATER REPORT

OH Randel #7

3RP-386

Unit D, Section 15, Township 26N, Range 11W
San Juan County, New Mexico

PREPARED FOR:

Mr. Steve Austin
Navajo Nation Environmental Protection Agency
Post Office Box 1999
Shiprock, New Mexico 87420

March 2011

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2010 XTO GROUNDWATER REPORT

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SITE DETAILS

LEGALS - TWN: 26N **RNG:** 11W **SEC:** 15 **UNIT:** D
OCD HAZARD RANKING: 20 **LAND TYPE:** NAVAJO
LATITUDE: 36.49194 **LONGITUDE:** 107.99572

INTRODUCTION

XTO Energy Inc. (XTO) acquired the OH Randel #7 well site from Amoco Production Company (Amoco) in January 1998. This is a gas producing well in the Dakota Sandstone and Gallegos Gallup formations and is currently active. This location is located near an irrigated field owned and operated by Navajo Agricultural Products Inc. (NAPI). A topographic map is included as ***Figure 1***.

HISTORY

In March 2002 during equipment upgrades XTO encountered hydrocarbon impacted soil that was assumed to be an abandoned earthen separator pit. The submitted Pit Closure report is included as ***Attachment 1***. Soil samples were collected and a groundwater monitoring well MW-1 was installed to determine impact to groundwater. The Completion Diagram and Borehole Log is presented ***Figure 3***. Groundwater was encountered at 16 feet below ground surface. After installation of the monitoring well, 3.84 inches of free phase product was discovered at a depth of 16.36 feet below ground surface. Additional monitoring wells (MW-2, MW-3, MW-4, MW-5 & MW-6) were installed near the source area; upgradient, downgradient and crossgradient of the source area. Completion Diagrams and Borehole Logs for the monitoring wells installed in April 2002 are presented in ***Figures 4-8.***

Phase separated hydrocarbons (PSH) were observed in monitoring wells MW-1, MW-2 and MW-6 during 2002-2004 sampling events. A total of approximately 22 gallons of product was recovered by hand bailing the PSH as of January 2006.

The 2005 annual groundwater report was submitted to the New Mexico Oil Conservation Division (OCD) in January 2006 proposing excavation of soil impacted by the former separator pit and the installation of additional groundwater monitoring wells to further delineate hydrocarbon impact to groundwater.

XTO submitted a remediation work plan to Mr. Steve Austin with the Navajo Nation EPA (NNEPA) in August of 2006. A copy of this work plan, written by Lodestar Services, Inc. (Lodestar), is included as ***Attachment 2***. This work plan was approved in October of 2006. The first phase of the work plan was excavation of the earthen separator pit to beneath the water table and backfilling with clean soil, which was completed in November of 2006. Approximately 9,000 cubic yards of hydrocarbon impacted soil was removed and transported offsite to an approved landfarm. No PSH was observed during the November 2006 excavation work. Monitoring wells MW-1, MW-2 and MW-6 were removed during the excavation. The US EPA Region 9 and NNEPA approved the closure

of the excavation as described in the Lodestar Report of Excavation and Sampling, which is included as ***Attachment 3***. Following the excavation work, groundwater from monitoring wells MW-3, MW-4, and MW-5 revealed no detectable concentrations or trace concentrations of dissolved hydrocarbons all beneath New Mexico Water Quality Control Commission (WQCC) standards.

The 2006 annual groundwater report was submitted to the OCD in February 2007 proposing installation of additional groundwater monitoring wells (MW-7 & MW-8) to the north and east of the former source area and quarterly sampling.

Monitoring wells MW-7 and MW-8 were installed to the north and the east of the former pit in May 2007. Completion Diagrams and Borehole Logs are presented in ***Figures 9-10***. It appeared that groundwater impact throughout the excavated area had been adequately delineated with the exception of the far northwest edge (MW-7). XTO proposed to evaluate other potential sources of groundwater impact in this area and screen appropriate remediation methods.

The 2007 annual groundwater report was submitted to the OCD in February of 2008 proposing to discontinue sampling of monitoring wells MW-3, MW-4, and MW-5, and to begin sampling of monitoring wells MW-7 and MW-8 on a semi-annual basis.

The 2008 annual groundwater report was submitted to the OCD in April 2009 proposing installation of two (2) additional monitoring wells, (MW-9 & MW-10), the addition of a chemical oxygenate to monitoring well MW-7, and the beginning of quarterly sampling.

Monitoring wells MW-9 and MW-10 were installed in July 2009. The water bearing unit that supplies the existing groundwater monitoring wells was practically dry. The existing monitoring wells are completed in low hydraulically conducting clay. Monitoring wells MW-9 and MW-10 were complete when drilling encountered the same impermeable clay bed. After allowing 24 hours for the new wells to fill in with water MW-9 contained only 1 ½ feet of water and did not recharge after purging dry while MW-10 never filled with water and was ultimately plugged. The completion diagrams and borehole logs are presented at ***Figures 11-13***. Monitoring well MW-9 was sampled after development.

The 2009 Annual Groundwater report was submitted to Mr. Glenn Von Gonten in March of 2010. The report recommended the continued use of chemical oxygenate in monitoring well MW-7 to enhance the bioremediation of the hydrocarbon constituents found in the groundwater aquifer. The 2009 Annual Groundwater Report also recommended the continued quarterly sampling of monitoring wells MW-7 and MW-9, as well as to discontinue sampling of monitoring well MW-8 due to four (4) consecutive sampling events returning results below the WQCC standards.

Summary of water level data and laboratory results from historical and current groundwater monitoring is included as ***Table 1*** and ***Table 2***. Copies of the laboratory data sheets and associated quality assurance/quality control data for 2010 are included as ***Attachment 4***.

METHODOLOGY

Monitoring wells MW-7 and MW-9 were sampled quarterly during 2010 for benzene, toluene, ethyl benzene and total xylene (BTEX). Due to the switch from semi-annual monitoring in 2009 to the quarterly monitoring proposed for 2010, first quarter groundwater monitoring was not conducted. Quarterly monitoring of monitoring wells MW-7 and MW-9 began in the second quarter of 2010.

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. A summary of water level data is included in ***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 casing volumes of water is purged from each well using a disposable bailer or a permanent decontaminated PVC bailer. As water is extracted, pH, electric conductivity and temperature are monitored. Wells are purged until these properties stabilize, indicating that the purge water is representative of aquifer conditions. Stabilization is defined as three consecutive stable readings for each water property (±0.4 units for pH, ±10 percent for electric conductivity and ±2° C for temperature). All purge water is disposed of into tanks on site.

Once each monitoring well is properly purged, groundwater samples are collected by filling at least two 40-millititer (ml) glass vials. The pre-cleaned and pre-preserved (with hydrochloric acid or mercuric chloride) vials are filled and capped with no air inside to prevent degradation of the sample. Samples are labeled with the date and time of collection, well designation, project name, collector's name and parameters to be analyzed. They are immediately sealed and packed on ice. The samples are shipped to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico in a sealed cooler via bus before designated holding times expire. In August of 2010, XTO switched from HEAL to Environmental Science Corporation (ESC) based in Mt. Juliet, Tennessee. Samples were packaged with ice in a cooler and shipped to ESC via Fed-ex overnight to ensure samples were cold and did not exceed their holding time. 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. Field Notes are included as ***Attachment 5***.

Groundwater Contour Maps

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

RESULTS

Laboratory results from groundwater monitoring in monitoring well MW-7 showed a decrease in benzene levels from 2009 through 2010. Benzene levels decreased from 9,800 ppb (parts per billion) in November of 2009 to 5,200 ppb in November of 2010. Xylene levels in monitoring well MW-7 decreased from 13,000 ppb in November of 2009 to 3,400 ppb in November of 2010. Hydrocarbon levels in monitoring well MW-7 showed an extremely significant drop in August of 2010 to 82 ppb benzene and 200 ppb total xylene. These levels rebounded to the levels mentioned above during the next sampling event in November of 2010. This sharp decrease and the significant rebound in the following quarter can be explained by the ORC socks that were added to monitoring well MW-7 after the May 2010 sampling event. After the sampling event in May of 2010, ORC socks were installed in monitoring well MW-7 to enhance bioremediation in this well. The socks were removed in August prior to the quarterly groundwater sampling. The sample collected in August was influenced by the enhanced bioremediation taking place in the aquifer around monitoring well MW-7. Upon reinstallation of the ORC socks after the August monitoring event, personnel did not get the ORC socks all the way to the bottom of the well, resulting in the ORC socks not being in contact with the water column in this well. The sampling event that then took place in November was indicative of the aquifer without the enhanced bioremediation that the ORC socks provided between the second and third quarter sampling event. Laboratory results from monitoring well MW-9 were below the WQCC standards for all constituents analyzed during 2010. Laboratory reports are included in ***Attachment 4***.

Field data collected during site monitoring activities indicate the groundwater surface is relatively flat trending primarily toward the southwest at approximately 0.0156 feet/foot. Groundwater at this site may be influenced by irrigation of a field adjacent to the location. Additionally, it is possible the groundwater at this site is a shallow water table created by irrigation water from this field. Slight increases in the groundwater gradient exhibit a more easterly flow which is attributed to the seasonal irrigation of the adjacent field. The tendency of the monitoring wells to bail dry indicate that the aquifer is tight, and most likely could not be used for beneficial use. ***Figure 2*** illustrates the estimated groundwater gradients for 2010.

CONCLUSIONS

Laboratory results from groundwater monitoring in 2010 indicate that the benzene and xylene levels in monitoring well MW-7 remain over the WQCC limits, while monitoring well MW-9 was below the WQCC standards for all BTEX constituents during all 2010 monitoring events. Analytical results from monitoring well MW-9 have been below the WQCC standards for four (4) consecutive monitoring events dating back to November of 2009. Based on the historical groundwater results for this area, and the shallow groundwater gradient, it seems that the benzene and xylene impact is confined to a small area surrounding monitoring well MW-7, and is not traveling off site.

RECOMMENDATIONS

XTO proposes the continued quarterly monitoring of monitoring well MW-7, as well as to discontinue monitoring of monitoring well MW-9 due to four (4) consecutive sampling events returning results below the WQCC standards for all BTEX constituents.

XTO also proposes the addition of hydrogen peroxide into the groundwater aquifer at this site, using monitoring well MW-7 as a conduit. This will enhance the oxygen levels in the

groundwater, enhancing the natural bio-remediation already taking place at this site. This should promote a downward trend in the benzene and xylene levels at this site. The hydrogen peroxide will be added, pending approval from the NNEPA, pursuant to the work plan created by LT Environmental, and included as ***Attachment 6***.

Following NNEPA approval for closure, all monitoring well locations will be abandoned in accordance with the monitoring well abandonment plan.

TABLE 3

WATER LEVEL SUMMARY TABLE
OH RANDEL #7
XTO ENERGY, INC.

Well ID	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Groundwater Elevation (feet AMSL)
MW-1	4/22/2002	16.30	16.63	No Survey Data
MW-1	4/24/2002	NM	NM	No Survey Data
MW-1	8/27/2002	16.19	16.49	No Survey Data
MW-1	10/08/2002	15.79	16.16	No Survey Data
MW-1	5/23/2003	15.73	16.04	No Survey Data
MW-1	5/28/2003	15.81	15.99	No Survey Data
MW-1	6/6/2003	15.93	16.04	No Survey Data
MW-1	6/18/2003	15.97	16.04	No Survey Data
MW-1	6/26/2003	17.85	17.93	No Survey Data
MW-1	7/31/2003	16.18	16.19	No Survey Data
MW-1	8/29/2003	NM	16.29	No Survey Data
MW-1	6/21/2004	16.28	17.09	No Survey Data
MW-1	9/20/2006	0.00	22.28	No Survey Data
MW-1	12/5/2006 *	NM	NM	No Survey Data
MW-2	4/22/2002	NM	18.32	No Survey Data
MW-2	4/24/2002	18.35	18.38	No Survey Data
MW-2	8/27/2002	18.92	19.86	No Survey Data
MW-2	10/08/2002	17.50	18.02	No Survey Data
MW-2	5/23/2003	17.30	17.83	No Survey Data
MW-2	5/28/2003	17.62	17.78	No Survey Data
MW-2	6/6/2003	17.71	17.83	No Survey Data
MW-2	6/18/2003	17.79	17.88	No Survey Data
MW-2	6/26/2003	16.05	16.09	No Survey Data
MW-2	7/31/2003	NM	15.86	No Survey Data
MW-2	8/29/2003	NM	15.99	No Survey Data
MW-2	6/21/2004	16.10	16.83	No Survey Data
MW-2	9/20/2006	0.00	17.15	No Survey Data
MW-2	12/5/2006 *	NM	NM	No Survey Data
MW-3	4/22/2002	0.00	16.26	6312.95
MW-3	4/24/2002	0.00	16.25	6312.96
MW-3	8/27/2002	0.00	15.28	6313.93

Well ID	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Groundwater Elevation (feet AMSL)
MW-3	10/8/02	0.00	14.74	6314.47
MW-3	3/3/03	0.00	15.17	6314.04
MW-3	6/18/2003	0.00	15.16	6314.05
MW-3	8/29/03	0.00	15.39	6313.82
MW-3	9/20/2006	NM	NM	NM
MW-3	12/5/2006	0.00	13.85	6315.36
MW-3	3/8/2007	0.00	13.40	6315.81
MW-3	5/17/2007	0.00	12.87	6316.34
MW-3	8/9/2007	0.00	12.37	6316.84
MW-3	5/12/2008	0.00	14.83	6314.38
MW-3	11/7/2008	0.00	13.92	6315.29
MW-3	7/8/2009	0.00	14.14	6315.07
MW-3	11/5/2009	0.00	14.53	6314.68
MW-3	5/25/2010	0.00	14.21	6315.00
MW-3	8/12/2010	0.00	NM	NM
MW-3	11/17/2010	0.00	15.30	6313.91
MW-4	4/22/2002	0.00	16.63	6311.45
MW-4	4/24/2002	0.00	16.66	6311.42
MW-4	8/27/2002	0.00	16.47	6311.61
MW-4	10/8/02	0.00	16.03	6312.05
MW-4	3/3/03	0.00	15.94	6312.14
MW-4	6/18/2003	0.00	16.03	6312.05
MW-4	8/29/03	0.00	16.29	6311.79
MW-4	9/20/2006	NM	NM	NM
MW-4	12/5/2006	0.00	13.75	6314.33
MW-4	3/8/2007	0.00	12.55	6315.53
MW-4	5/17/2007	0.00	13.03	6315.05
MW-4	8/9/2007	0.00	12.59	6315.49
MW-4	5/12/2008	0.00	12.57	6315.51
MW-4	11/7/2008	0.00	13.68	6314.40
MW-4	7/8/09	0.00	13.72	6314.36
MW-4	11/5/09	0.00	14.12	6313.96
MW-4	5/25/10	0.00	13.86	6314.22
MW-4	8/12/10	0.00	14.39	6313.69
MW-4	11/17/10	0.00	14.60	6313.48
MW-5	4/22/2002	0.00	19.11	6314.12
MW-5	4/24/2002	0.00	19.14	6314.09

Well ID	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Groundwater Elevation (feet AMSL)
MW-5	8/10/2002	0.00	19.10	6314.13
MW-5	6/18/2003	0.00	18.86	6314.37
MW-5	6/21/2004	0.00	19.64	6313.59
MW-5	6/28/2005	0.00	17.30	6315.93
MW-5	9/20/2006	NM	NM	NM
MW-5	12/5/2006	0.00	18.65	6314.58
MW-5	3/8/2007	0.00	18.15	6315.08
MW-5	5/17/2007	0.00	17.78	6315.45
MW-5	8/9/2007	0.00	UTM	UTM
MW-5	5/12/2008	0.00	18.82	6314.41
MW-5	11/7/2008	0.00	18.90	6314.33
MW-5	7/8/2009	0.00	20.08	6313.15
MW-5	11/5/2009	0.00	20.44	6312.79
MW-5	5/25/2010	0.00	20.33	6312.90
MW-5	8/12/2010	0.00	20.51	6312.72
MW-5	11/17/2010	0.00	20.93	6312.30

MW-6	4/22/2002	0.00	18.31	No Survey Data
MW-6	4/24/2002	0.00	18.32	No Survey Data
MW-6	8/27/2002	NM	NM	No Survey Data
MW-6	10/8/02	16.84	18.13	No Survey Data
MW-6	5/23/2003	16.62	17.95	No Survey Data
MW-6	5/28/2003	16.68	17.90	No Survey Data
MW-6	6/6/2003	16.80	18.00	No Survey Data
MW-6	6/18/2003	16.78	18.02	No Survey Data
MW-6	6/26/2003	16.88	18.10	No Survey Data
MW-6	7/31/2003	17.77	19.13	No Survey Data
MW-6	8/29/2003	16.88	18.34	No Survey Data
MW-6	6/21/2004	17.78	18.95	No Survey Data
MW-6	9/20/2006	15.79	16.87	No Survey Data
MW-6	12/5/2006 *			No Survey Data

MW-7	5/17/07	0.00	15.46	6315.90
MW-7	8/9/07	0.00	14.72	6316.64
MW-7	11/27/07	0.00	14.91	6316.45
MW-7	5/12/08	0.00	15.12	6316.24
MW-7	11/7/08	0.00	15.82	6315.54
MW-7	7/8/09	0.00	16.44	6314.92
MW-7	11/5/09	0.00	16.76	6314.60

Well ID	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Groundwater Elevation (feet AMSL)
MW-7	5/25/10	0.00	16.63	6314.73
MW-7	8/12/10	0.00	16.82	6314.54
MW-7	11/17/10	0.00	17.65	6313.71
MW-8	5/17/07	0.00	19.64	6314.86
MW-8	8/9/07	0.00	18.94	6315.56
MW-8	11/27/07	0.00	19.20	6315.30
MW-8	5/12/08	0.00	19.97	6314.53
MW-8	11/7/08	0.00	19.55	6314.95
MW-8	7/8/09	0.00	20.01	6314.49
MW-8	11/5/09	0.00	20.41	6314.09
MW-8	5/25/10	0.00	20.31	6314.19
MW-8	8/12/10	0.00	20.41	6314.09
MW-8	11/17/10	0.00	20.63	6313.87
MW-9	7/8/09	0.00	35.26	6295.10
MW-9	11/5/09	0.00	33.08	6297.28
MW-9	5/25/10	0.00	29.28	6301.08
MW-9	8/12/10	0.00	31.12	6299.24
MW-9	5/25/10	0.00	20.31	6310.05
MW-9	8/12/10	0.00	20.41	6309.95
MW-9	11/17/10	0.00	30.49	6299.87

Notes:

BTOC - Below Top of Casing

NM - Not Measured

AMSL - Above Mean Sea Level

UTM - Unable to Measure

* - Well was destroyed

TABLE 4

GROUNDWATER RESULTS SUMMARY TABLE
OH RANDEL #7
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-1	4/22/2002	NS	NS	NS	NS
MW-1	4/24/2002	NS	NS	NS	NS
MW-1	8/27/2002	NS	NS	NS	NS
MW-1	10/08/2002	NS	NS	NS	NS
MW-1	5/23/2003	NS	NS	NS	NS
MW-1	5/28/2003	NS	NS	NS	NS
MW-1	6/6/2003	NS	NS	NS	NS
MW-1	6/18/2003	NS	NS	NS	NS
MW-1	6/26/2003	NS	NS	NS	NS
MW-1	7/31/2003	NS	NS	NS	NS
MW-1	8/29/2003	NS	NS	NS	NS
MW-1	6/21/2004	NS	NS	NS	NS
MW-1	9/20/2006	NS	NS	NS	NS
MW-1	12/5/2006 *	NS	NS	NS	NS
MW-2	4/22/2002	NS	NS	NS	NS
MW-2	4/24/2002	NS	NS	NS	NS
MW-2	8/27/2002	NS	NS	NS	NS
MW-2	10/08/2002	NS	NS	NS	NS
MW-2	5/23/2003	NS	NS	NS	NS
MW-2	5/28/2003	NS	NS	NS	NS
MW-2	6/6/2003	NS	NS	NS	NS
MW-2	6/18/2003	NS	NS	NS	NS
MW-2	6/26/2003	NS	NS	NS	NS
MW-2	7/31/2003	NS	NS	NS	NS
MW-2	8/29/2003	NS	NS	NS	NS
MW-2	6/21/2004	NS	NS	NS	NS
MW-2	9/20/2006	NS	NS	NS	NS
MW-2	12/5/2006 *	NS	NS	NS	NS
MW-3	4/22/2002	NS	NS	NS	NS
MW-3	4/24/2002	24	2.4	0.58	200
MW-3	8/27/2002	9.4	ND	ND	150

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-3	10/8/02	NA	NA	NA	NA
MW-3	3/3/03	5.5	ND	ND	43
MW-3	6/18/2003	6.1	0.97	ND	43
MW-3	8/29/03	3.2	0.53	ND	24
MW-3	9/20/2006	NS	NS	NS	NS
MW-3	12/5/2006	<1	<1	<1	<3
MW-3	3/8/2007	NS	NS	NS	NS
MW-3	5/17/2007	<1	<1	<1	<2
MW-3	8/9/2007	<1	<1	<1	<2
MW-3	5/12/2008	NS	NS	NS	NS
MW-3	11/7/2008	NS	NS	NS	NS
MW-3	7/8/2009	NS	NS	NS	NS
MW-3	11/5/2009	NS	NS	NS	NS
MW-3	5/25/2010	NS	NS	NS	NS
MW-3	8/12/2010	NS	NS	NS	NS
MW-3	11/17/2010	NS	NS	NS	NS
MW-4	4/22/2002	NS	NS	NS	NS
MW-4	4/24/2002	ND	0.59	ND	2.1
MW-4	8/27/2002	1.3	ND	ND	3.5
MW-4	10/8/02	NS	NS	NS	NS
MW-4	3/3/03	4.2	ND	ND	5
MW-4	6/18/2003	6.2	ND	ND	4.5
MW-4	8/29/03	8.3	ND	ND	4.3
MW-4	9/20/2006	NS	NS	NS	NS
MW-4	12/5/2006	<1	<1	<1	<3
MW-4	3/8/2007	NS	NS	NS	NS
MW-4	5/17/2007	<1	<1	<1	<2
MW-4	8/9/2007	<1	<1	<1	<2
MW-4	5/12/2008	NS	NS	NS	NS
MW-4	11/7/2008	NS	NS	NS	NS
MW-4	7/8/09	NS	NS	NS	NS
MW-4	11/5/09	NS	NS	NS	NS
MW-4	5/25/10	NS	NS	NS	NS
MW-4	8/12/10	NS	NS	NS	NS
MW-4	11/17/10	NS	NS	NS	NS

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-5	4/22/2002	NS	NS	NS	NS
MW-5	4/24/2002	**510**	0.64	8.9	240.0
MW-5	8/10/2002	NA	NA	NA	NA
MW-5	6/18/2003	**1,100**	20	ND	**660.0**
MW-5	6/21/2004	**2,000**	ND	ND	260.0
MW-5	6/28/2005	**1,100**	15	ND	160.0
MW-5	9/20/2006	NS	NS	NS	NS
MW-5	12/5/2006	**37**	<1	<1	4.1
MW-5	3/8/2007	NS	NS	NS	NS
MW-5	5/17/2007	<1	<1	<1	<2
MW-5	8/9/2007	NS	NS	NS	NS
MW-5	5/12/2008	NS	NS	NS	NS
MW-5	11/7/2008	NS	NS	NS	NS
MW-5	7/8/2009	NS	NS	NS	NS
MW-5	11/5/2009	NS	NS	NS	NS
MW-5	5/25/2010	NS	NS	NS	NS
MW-5	8/12/2010	NS	NS	NS	NS
MW-5	11/17/2010	NS	NS	NS	NS
MW-6	4/22/2002	NS	NS	NS	NS
MW-6	4/24/2002	**6,100**	**4,800**	**920**	**6,600**
MW-6	8/27/2002	NS	NS	NS	NS
MW-6	10/8/02	NS	NS	NS	NS
MW-6	5/23/2003	NS	NS	NS	NS
MW-6	5/28/2003	NS	NS	NS	NS
MW-6	6/6/2003	NS	NS	NS	NS
MW-6	6/18/2003	NS	NS	NS	NS
MW-6	6/26/2003	NS	NS	NS	NS
MW-6	7/31/2003	NS	NS	NS	NS
MW-6	8/29/2003	NS	NS	NS	NS
MW-6	6/21/2004	NS	NS	NS	NS
MW-6	9/20/2006	NS	NS	NS	NS
MW-6	12/5/2006 *	NS	NS	NS	NS
MW-7	5/17/07	**8,500**	**17,000**	**980**	**16,000**
MW-7	8/9/07	**9,800**	**11,000**	**770**	**12,000**
MW-7	11/27/07	**12,000**	**9,000**	**940**	**13,000**

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-7	5/12/08	**7,900**	**11,000**	**830**	**12,000**
MW-7	11/7/08	**12,000**	**16,000**	**1,100**	**17,000**
MW-7	7/8/09	**9,800**	**8,200**	<100	**12,000**
MW-7	11/5/09	**9,800**	**7,900**	570	**13,000**
MW-7	5/25/10	**7,200**	**3,800**	440	**11,000**
MW-7	8/12/10	**82**	58	9.2	200
MW-7	11/17/10	**5,200**	**5,500**	76.0	**3,400**
MW-8	5/17/07	<1.0	1.9	<1.0	3.7
MW-8	8/9/07	<1.0	<1.0	<1.0	<2.0
MW-8	11/27/07	**21.0**	<1.0	<1.0	<2.0
MW-8	5/12/08	1.4	<1.0	<1.0	<2.0
MW-8	11/7/08	1.2	<1.0	<1.0	<2.0
MW-8	7/8/09	<1.0	<1.0	<1.0	<2.0
MW-8	11/5/09	1.1	<1.0	<1.0	<2.0
MW-8	5/25/10	NS	NS	NS	NS
MW-8	8/12/10	NS	NS	NS	NS
MW-8	11/17/10	NS	NS	NS	NS
MW-9	7/8/09	**91**	160	6.9	100
MW-9	11/30/09	<1	<1	<1	<2
MW-9	5/25/10	<1.0	<1.0	<1.0	<2.0
MW-9	8/12/10	<0.5	<5.0	<0.5	<1.5
MW-9	11/17/10	2.4	<5.0	<0.5	<1.5

Notes:

ug/l - micrograms per liter

< - indicates result is less than the stated laboratory method detection limit

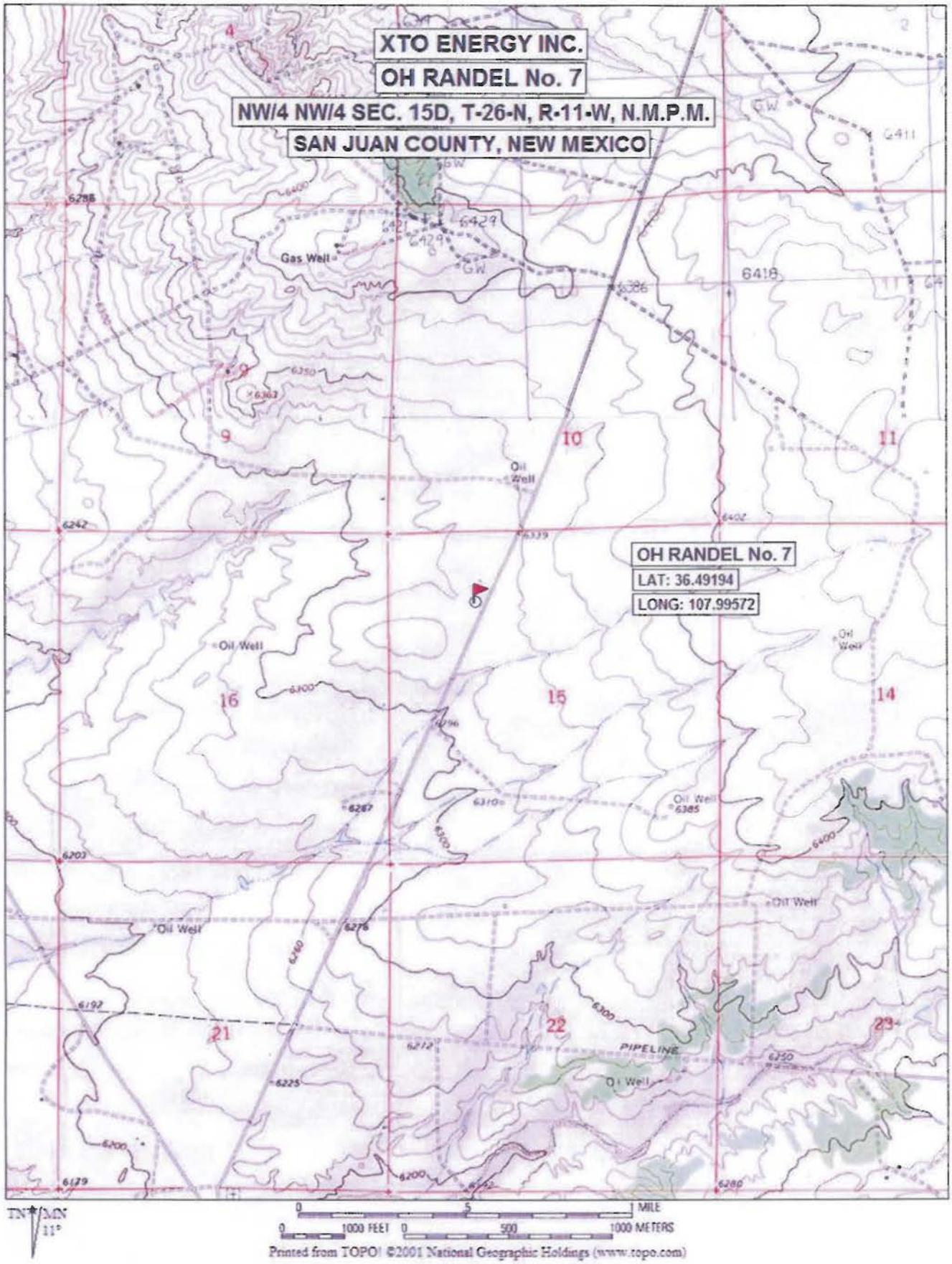
NMWQCC - New Mexico Water Quality Control Commission

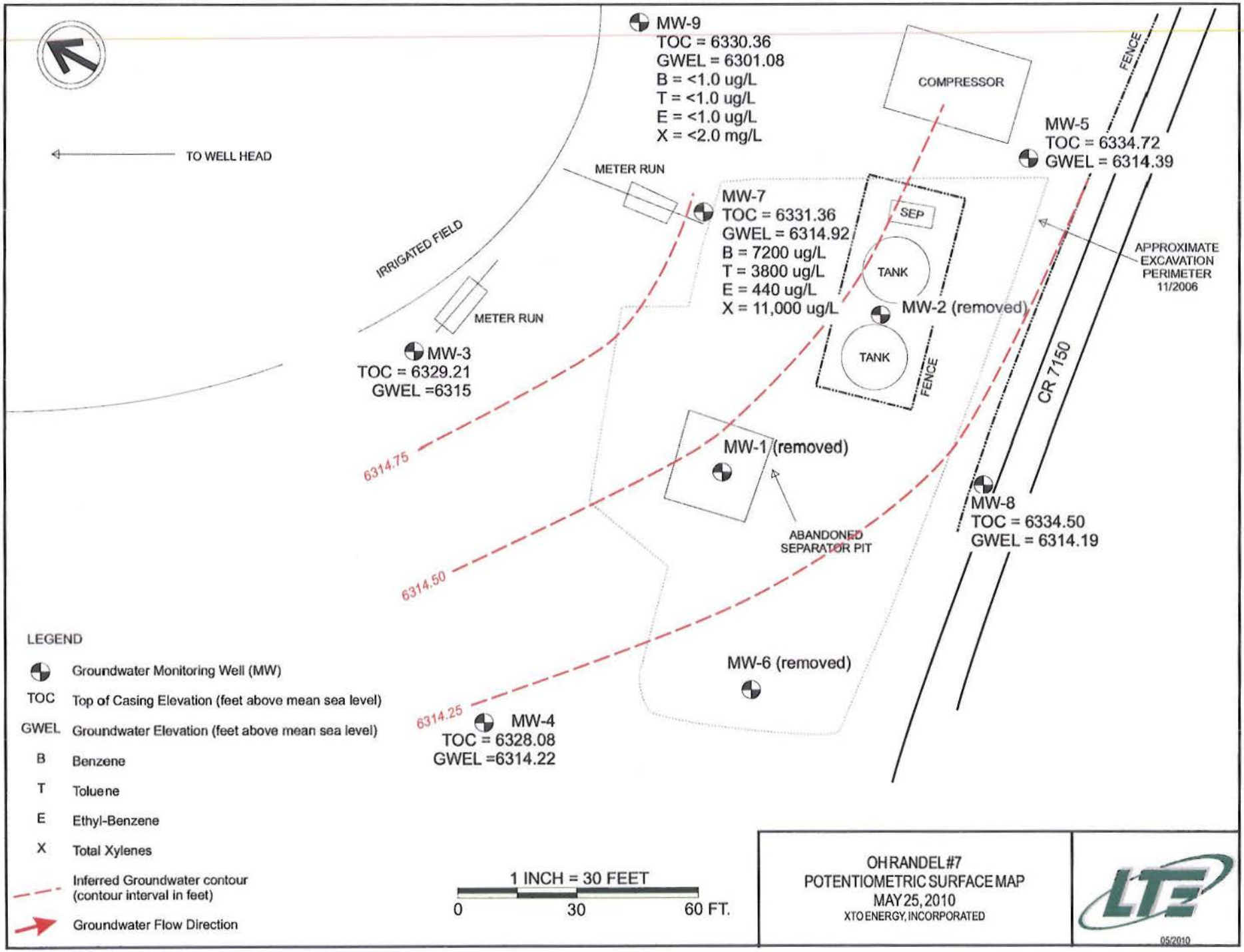
Benzene, Toluene, Ethylbenzene, and Total Xylenes analyzed by EPA Method 8021B.

NS - Not Sampled

BOLD Indicates the result exceeds the NMWQCC Standard

* - Well Destroyed




MW-9
TOC = 6330.36
GWEL = 6301.08
B = <1.0 ug/L
T = <1.0 ug/L
E = <1.0 ug/L
X = <2.0 mg/L
COMPRESSOR
FENCE
MW-5
TOC = 6334.72
GWEL = 6314.39
TO WELL HEAD
METER RUN
MW-7
TOC = 6331.36
GWEL = 6314.92
B = 7200 ug/L
T = 3800 ug/L
E = 440 ug/L
X = 11,000 ug/L
SEP
TANK
APPROXIMATE EXCAVATION PERIMETER 11/2006
MW-2 (removed)
IRRIGATED FIELD
METER RUN
MW-3
TOC = 6329.21
GWEL =6315
TANK
FENCE
CR 7150
6314.75
MW-1 (removed)
MW-8
TOC = 6334.50
GWEL = 6314.19
ABANDONED SEPARATOR PIT
6314.50
MW-6 (removed)
6314.25
MW-4
TOC = 6328.08
GWEL =6314.22
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 = 30 FEET
0
30
60 FT.
OH RANDEL #7
POTENTIOMETRIC SURFACE MAP
MAY 25, 2010
XTO ENERGY, INCORPORATED
LTE
05/2010

BLAGG ENGINEERING, INC.

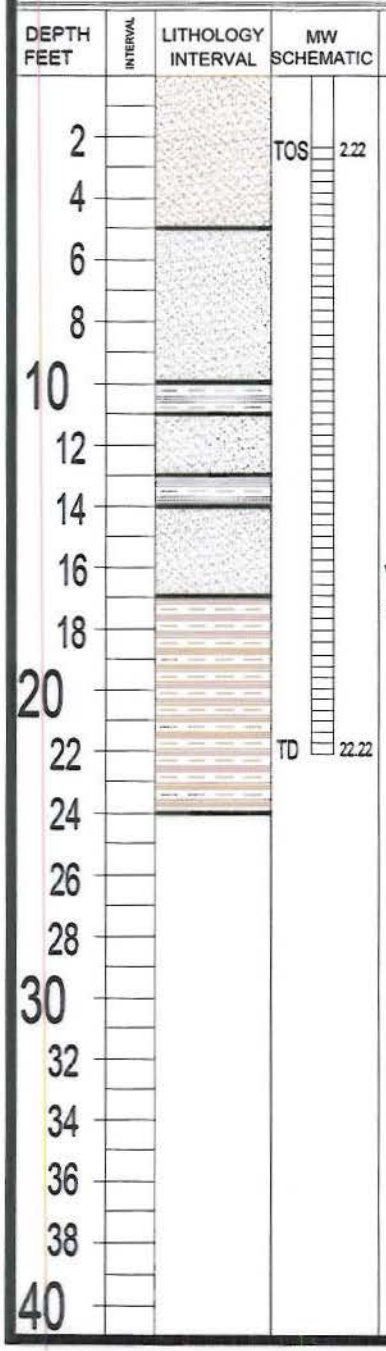
P.O. BOX 87
BLOOMFIELD, NM 87413

(505) 632-1199

BORE / TEST HOLE REPORT

BORING #.....	BH - 1
MW #.....	1
PAGE #.....	1
DATE STARTED	3/22/02
DATE FINISHED	3/22/02
OPERATOR.....	JCB
PREPARED BY	NJV

CLIENT:	XTO ENERGY INC.
LOCATION NAME:	RANDEL, O.H. #7 - SEP. PIT, UNIT D, SEC. 15, T26N, R11W
CONTRACTOR:	BLAGG ENGINEERING, INC.
EQUIPMENT USED:	MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION:	240 FT., S76.5E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 0.15 FT. ABOVE GROUND SURFACE.

MODERATE TO DARK YELLOWISH BROWN SAND & ROCK AGGREGATE, NON COHESIVE, SLIGHTLY MOIST, LOOSE TO FIRM, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTINGS (0.0 - 5.0 FT. BELOW GRADE).

LIGHT TO MEDIUM GRAY SAND, NON COHESIVE, SLIGHTLY MOIST TO MOIST, FIRM, STRONG HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTING (5.0 - 10.0 FT. BELOW GRADE).

LIGHT MEDIUM GRAY SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, SLIGHTLY MOIST, APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (10.0 - 11.0 FT. BELOW GRADE).

SAME AS 5.0 - 10.0 FT. INTERVAL (11.0 - 13.0 FT. BELOW GRADE).

SAME AS 10.0 - 11.0 FT. INTERVAL (13.0 - 14.0 FT. BELOW GRADE).

SAME AS 5.0 - 10.0 FT. INTERVAL EXCEPT MOIST TO WET (14.0 - 17.0 FT. BELOW GRADE).

▼ GW DEPTH ON 3/25/02 = 16.68 FT. (APPROX.) FROM GROUND SURFACE.

LIGHT DUSKY BROWN SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, WET TO SATURATED, APPARENT STRONG HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (17.0 - 24.0 FT. BELOW GRADE).

NOTE:
- SAND.
- SILTY CLAY TO CLAY.

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

Monitor well consist of 2 inch PVC piping - casing from 0.15 ft. above grade to 2.22 ft. below grade, 0.010 slotted screen between 2.22 to 22.22 feet below grade, sand packed annular to grade.

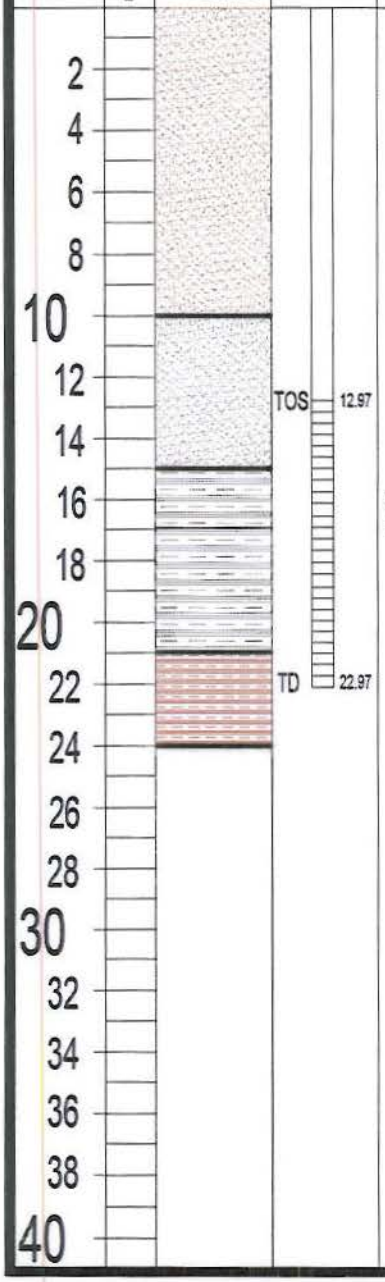
DRAWING: RANDEL-7-MW1.SKF | DATE: 10/19/05 | DWN BY: NJV

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 2
MW #.....	2
PAGE #.....	2
DATE STARTED	4/09/02
DATE FINISHED	4/09/02
OPERATOR.....	JCB
PREPARED BY	NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: RANDEL, O.H. #7 - SEP. PIT, UNIT D, SEC. 15, T26N, R11W
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 274 FT., S87.5E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 1.63 FT. ABOVE GROUND SURFACE.

MODERATE TO DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, LOOSE TO FIRM, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTINGS (0.0 - 10.0 FT. BELOW GRADE).

LIGHT TO MEDIUM GRAY SILTY SAND, NON COHESIVE, DRY TO SLIGHTLY MOIST, DENSE, STRONG HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTING (10.0 - 15.0 FT. BELOW GRADE).

▼ GW DEPTH ON 4/22/02 = 16.69 FT. (APPROX.) FROM GROUND SURFACE.

LIGHT MEDIUM GRAY SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, SLIGHTLY MOIST, APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (15.0 - 21.0 FT. BELOW GRADE).

LIGHT DUSKY BROWN SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, DRY, SLIGHT APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (21.0 - 24.0 FT. BELOW GRADE).

NOTE:
- SAND.
- SILTY SAND (HC IMPACTED).
- SILTY CLAY TO CLAY.

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

Monitor well consist of 2 inch PVC piping - casing from 1.63 ft. above grade to 12.97 ft. below grade, 0.010 slotted screen between 12.97 to 22.97 feet below grade, sand packed annular to 10 ft. below grade, then filled with clean native soil to surface.

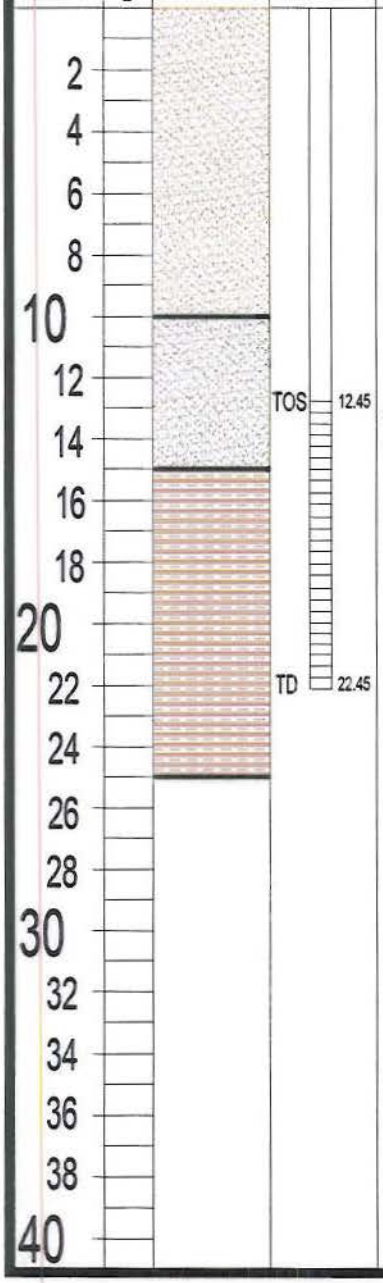
DRAWING: RANDEL-7-MW2.SKF | DATE: 10/19/05 | DWN BY: NJV

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 3
MW #.....	3
PAGE #.....	3
DATE STARTED	4/09/02
DATE FINISHED	4/09/02
OPERATOR.....	JCB
PREPARED BY	NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: RANDEL, O.H. #7 - SEP. PIT, UNIT D, SEC. 15, T26N, R11W
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 158 FT., S80.5E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 2.15 FT. ABOVE GROUND SURFACE.

MODERATE TO DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, LOOSE TO FIRM, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTINGS (0.0 - 10.0 FT. BELOW GRADE).

MODERATE TO DARK YELLOWISH BROWN SILTY SAND, COHESIVE, SLIGHTLY MOIST TO WET, FIRM, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTING (10.0 - 15.0 FT. BELOW GRADE).

▼ GW DEPTH ON 4/22/02 = 14.11 FT. (APPROX.) FROM GROUND SURFACE.

LIGHT DUSKY BROWN SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, WET TO SATURATED, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (15.0 - 25.0 FT. BELOW GRADE).

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

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

Monitor well consist of 2 inch PVC piping - casing from 2.15 ft. above grade to 12.45 ft. below grade, 0.010 slotted screen between 12.45 to 22.45 feet below grade, sand packed annular to 10 ft. below grade, then filled with clean native soil to surface.

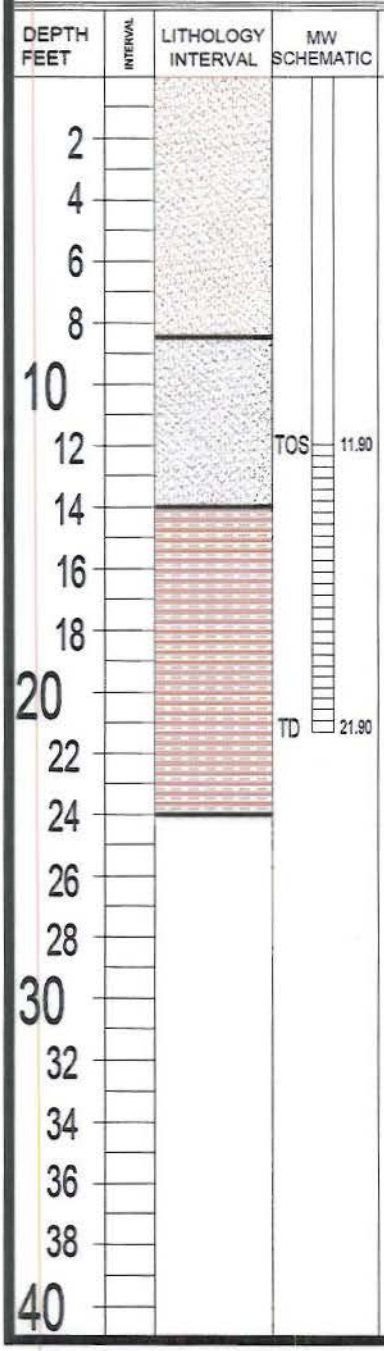
DRAWING: RANDEL-7-MW3.SKF | DATE: 10/19/05 | DWN BY: NJV

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 4
MW #.....	4
PAGE #.....	4
DATE STARTED	4/09/02
DATE FINISHED	4/09/02
OPERATOR.....	JCB
PREPARED BY	NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: RANDEL, O.H. #7 - SEP. PIT, UNIT D, SEC. 15, T26N, R11W
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 210 FT., S56E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 1.60 FT. ABOVE GROUND SURFACE.

MODERATE TO DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, LOOSE TO FIRM, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTINGS (0.0 - 8.5 FT. BELOW GRADE).

MODERATE TO DARK YELLOWISH BROWN SILTY SAND, COHESIVE, SLIGHTLY MOIST TO WET, FIRM, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTING (8.5 - 14.0 FT. BELOW GRADE).

▼ GW DEPTH ON 4/22/02 = 15.03 FT. (APPROX.) FROM GROUND SURFACE.

LIGHT DUSKY BROWN SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, WET TO SATURATED, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (14.0 - 24.0 FT. BELOW GRADE).

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

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

Monitor well consist of 2 inch PVC piping - casing from 1.60 ft. above grade to 11.90 ft. below grade, 0.010 slotted screen between 11.90 to 21.90 feet below grade, sand packed annular to 8 ft. below grade, then filled with clean native soil to surface.

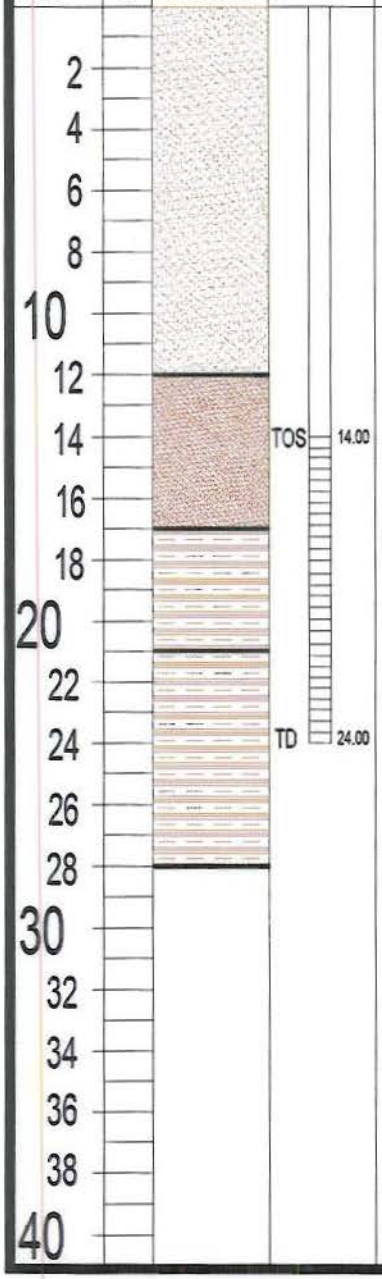
DRAWING: RANDEL-7-MW4.SKF | DATE: 10/19/05 | DWN BY: NJV

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 5
MW #.....	5
PAGE #.....	5
DATE STARTED	4/19/02
DATE FINISHED	4/19/02
OPERATOR.....	JCB
PREPARED BY	NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: RANDEL, O.H. #7 - SEP. PIT, UNIT D, SEC. 15, T26N, R11W
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 312 FT., N86E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 1.00 FT. ABOVE GROUND SURFACE.

MODERATE TO DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, LOOSE TO FIRM, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTINGS (0.0 - 12.0 FT. BELOW GRADE).

MODERATE BROWN SILTY SAND, NON COHESIVE, DRY TO SLIGHTLY MOIST, DENSE, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTING (12.0 - 17.0 FT. BELOW GRADE).

▼ GW DEPTH ON 4/22/02 = 18.11 FT. (APPROX.) FROM GROUND SURFACE.

MEDIUM BROWN TO LIGHT OLIVE GRAY SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, SLIGHTLY MOIST, APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (17.0 - 21.0 FT. BELOW GRADE).

LIGHT DUSKY BROWN SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, DRY, SLIGHT APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (21.0 - 28.0 FT. BELOW GRADE).

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

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

Monitor well consist of 2 inch PVC piping - casing from 1.0 ft. above grade to 14.00 ft. below grade, 0.010 slotted screen between 14.00 to 24.00 feet below grade, sand packed annular to 12 ft. below grade, then filled with clean native soil to surface.

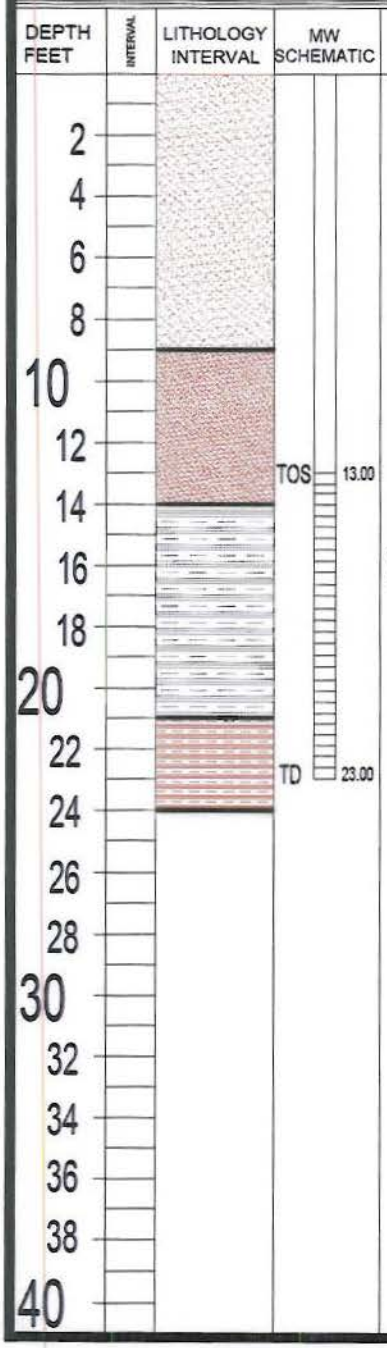
DRAWING: RANDEL-7-MW5.SKF | DATE: 10/19/05 | DWN BY: NJV

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 6
MW #.....	6
PAGE #.....	6
DATE STARTED	4/19/02
DATE FINISHED	4/19/02
OPERATOR.....	JCB
PREPARED BY	NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: RANDEL, O.H. #7 - SEP. PIT, UNIT D, SEC. 15, T26N, R11W
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 266 FT., S65.5E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 2.00 FT. ABOVE GROUND SURFACE.

MODERATE TO DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, LOOSE TO FIRM, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTINGS (0.0 - 9.0 FT. BELOW GRADE).

MODERATE BROWN TO LIGHT OLIVE GRAY SILTY SAND, NON COHESIVE, DRY TO SLIGHTLY MOIST, DENSE, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTING (9.0 - 14.0 FT. BELOW GRADE).

▼ GW DEPTH ON 4/22/02 = 16.51 FT. (APPROX.) FROM GROUND SURFACE.

LIGHT OLIVE TO MEDIUM GRAY SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, SLIGHTLY MOIST, APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (14.0 - 21.0 FT. BELOW GRADE).

LIGHT DUSKY BROWN SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, DRY, SLIGHT APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (21.0 - 24.0 FT. BELOW GRADE).

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

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

Monitor well consist of 2 inch PVC piping - casing from 2.00 ft. above grade to 13.00 ft. below grade, 0.010 slotted screen between 13.00 to 23.00 feet below grade, sand packed annular to 10 ft. below grade, then filled with clean native soil to surface.

DRAWING: RANDEL-7-MW6.SKF | DATE: 10/19/05 | DWN BY: NJV

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: 1
Well #: MW-7
Page: 1 of 2

Project Number:
Project Name: XTO Ground Water
Project Location: OH Randel #7

Borehole Location: 36° 29.508' N, 107° 59.720' W
GWL Depth: 19'
Drilled By: Enviro-Drill
Well Logged By: Ashley Ager
Date Started: 05/01/07
Date Completed: 05/01/07

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0	1	0-5'	cuttings	brown, unconsolidated, poorly sorted sand and gravel, damp	0	Easy
5	2	5-7'	split spoon	brown, unconsolidated, poorly sorted sand and gravel, damp	0	Easy
10	3	10-12	split spoon	10-10.5: brown, unconsolidated, poorly sorted sand and gravel, damp 10.5-12: whitish-brown medium sand, well sorted, unconsolidated, dry	0 0	Easy
15	4	15-17	split spoon	15-15.5: reddish brown coarse sand, poorly sorted, damp 15.5-16.5: brown clay with white chalkish material on top 16.5-17: reddish brown silty sand, coarse, poorly sorted, damp	7.2 0 0	Easy
20						

Comments:

Geologist Signature: Ashley L Ager

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: 1
Well #: MW-7
Page: 2 of 2
Project Number:
Project Name: XTO Ground Water
Project Location: OH Randel #7

Borehole Location: 36° 29.522' N, 107° 59.736' W
GWL Depth: 16.5
Drilled By: Enviro-Drill
Well Logged By: Ashley Ager
Date Started: 05/01/07
Date Completed: 05/01/07

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
20	5	20-22	split spoon	20-20.4: reddish brown, coarse sand, poorly sorted, damp 20.4-20.8: gray coarse sand, moist, poorly sorted 20.8-21: saturated gray coarse sand, poorly sorted 21-22: reddish gray clay	1.3 1.0 0.5 0	Easy
25	6	25-16	split spoon	Variegated reddish brown clay, dry	0	Easy
30	7	30-32	split spoon	Variegated reddish brown clay, dry	0	Easy
35						
40						

Comments: Very thin saturated layer at approximately 20'. Stiff clay is present below that. Wet layer probably represents a small perched aquifer atop the clay.

Geologist Signature: *Ashley L. Ager*

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: 1
Well #: MW-8
Page: 1 of 2
Project Number:
Project Name: XTO Ground Water
Project Location: OH Randel #7

Borehole Location: 36° 29.522' N, 107° 59.736' W
GWL Depth: 16.5
Drilled By: Enviro-Drill
Well Logged By: Ashley Ager
Date Started: 05/01/07
Date Completed: 05/01/07

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0	1	0-5'	cuttings	brown, unconsolidated, poorly sorted sand and gravel, damp	0	Easy
5	2	5-7'	split spoon	brown, unconsolidated, poorly sorted sand and gravel, damp	0	Easy
10	3	10-11.8	split spoon	brown, unconsolidated, poorly sorted sand and gravel, damp	0	Easy
15	4	15-16.9	split spoon	15-15.8: brown, unconsolidated, poorly sorted sand and gravel 15.8-16.4: moist, grayish brown sandy silt 16.4-16.9: coarse, poorly sorted, grayish brown sand, wet, some HC odor	0 52.8 319	Easy Easy Easy
20						

Comments:

Geologist Signature: Ashley L Ager

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: 1
Well #: MW-8
Page: 2 of 2
Project Number:
Project Name: XTO Ground Water
Project Location: OH Randel #7

Borehole Location: 36° 29.522' N, 107° 59.736' W
GWL Depth: 16.5
Drilled By: Enviro-Drill
Well Logged By: Ashley Ager
Date Started: 05/01/07
Date Completed: 05/01/07

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
20	5	20-21.8	split spoon	20-20.4: reddish brown sand, coarse, poorly sorted, some gravel content, moist	78.9	Easy
				20.4-21.8: variegated reddish gray stiff clay, moist	0.2	Easy
25	6	25-27	split spoon	Variegated reddish brown clay wet at top, dry at bottom	0	Easy
30	7	30-32	split spoon	30-30.7: variegated reddish brown clay	0	Steady
				30.7-31.8: greenish gray silty sand, coarse, poorly sorted, consolidated, dry	0	
35						
40						

Comments: Very thin saturated layer at approximately 16.5'. Stiff clay is present below that. Wet layer probably represents a small perched aquifer atop the clay.

Geologist Signature: Ashley L. Ager

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: B-1
Well #: MW-9
Page: 1 of 2
Project Number:
Project Name: XTO Ground Water
Project Location: OH Randel #7

Borehole Location: 36° 29.531' N, 107° 59.731' W
GWL Depth: 16'
Drilled By: Kelly Padilla
Well Logged By: Ashley Ager
Date Started: 07/07/09
Date Completed: 07/07/09

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0		0-5	cuttings	brown, poorly sorted coarse sand and gravel, road base		easy
5	1	5-7'	split spoon, 17"	0-13.5": 7.5 YR 5/6 strong brown sp, poorly sorted coarse sand, sub angular, dry, unconsolidated 13.5 - 17": 10YR 6/1 gray, sandy shale, crumbly	0	34 Blows
10	2	10-12	split spoon, 22"	10 YR 5/3 brown sp, poorly sorted, coarse sand, sub angular, dry	0	30 Blows
15	3	15-17	split spoon, 18"	0-2": same as above 2 - 16": 10 YR 5/3 brown sm, poorly sorted, medium sand w/ higher silt content, damp	0	25 Blows
20						

Comments:

Geologist Signature: Ashley L. Ager

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: B-1
Well #: MW-9
Page: 2 of 2
Project Number:
Project Name: XTO Ground Water
Project Location: OH Randel #7

Borehole Location: 36° 29.531' N, 107° 59.731' W
GWL Depth: 16'
Drilled By: Kelly Padilla
Well Logged By: Ashley Ager
Date Started: 07/07/09
Date Completed: 07/07/09

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
20	4	20-22	split spoon, 20"	10 YR 3/2 v. dark grayish brown CL, clay some coarse sand at top, damp	0.1	68 Blows Wet rod
25	5	25-27	split spoon, 18"	10 YR 7/2 light gray CL, clay interbedded with 10 yr 4/2 dark grayish brown clays, iron discoloration, dry	0	58 Blows
30	6	30-32	split spoon, 18"	same as above, dry	0	76 Blows
35	7	35-37'	split spoon, 15"	same as above, dry	0	41 Blows
40						

Comments: Based on data from existing wells, damp sand layer at ~16' is water bearing unit. Contains only small amount of water, and hole is dry after drilling to 37'. Will let sit and see if wet layer fills in. 3" of water in hole after 30 mins. Set hole.

Geologist Signature: Ashley L. Ager

MONITORING WELL INSTALLATION RECORD

Borehole # B-1
Well # MW-9
Page 1 of 1

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

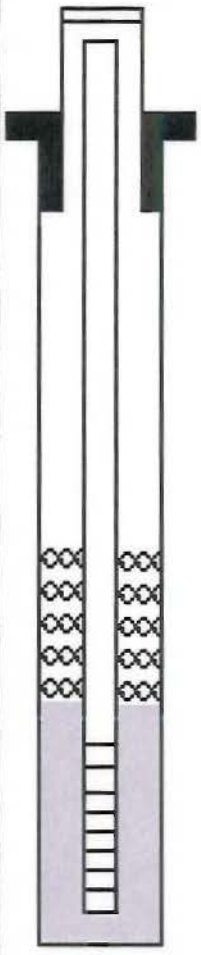
Project Name XTO Ground Water
Project Number _____ Cost Code _____
Project Location OH Randel #7

Elevation 6330
Well Location 36° 29.531' N, 107° 59.731' W
GWL Depth 35.62'
Installed By Kyvek
Kelly Padilla
Date/Time Started 06/07/09, 1129
Date/Time Completed 06/08/09, 1015

On-Site Geologist Ashley Ager
Personnel On-Site Kelly, Kimo, Ritchie
Contractors On-Site
Client Personnel On-Site

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing	Steel	2.5
Bottom of Protective Casing		-2.5
Top of Permanent Borehole Casing		NA
Bottom of Permanent Borehole Casing		NA
Top of Concrete	Concrete	1"
Bottom of Concrete		-1.5"
Top of Grout	Quickcrete	-2.0
Bottom of Grout		-16.0
Top of Well Riser	Sch. 40 PVC	2.2
Bottom of Well Riser		-21.0
Top of Well Screen	Sch. 40 PVC	-21.0
Bottom of Well Screen		-36.0
Top of Peltonite Seal	3/8" Bentonite hole plug	-16.0
Bottom of Peltonite Seal		-18.0
Top of Gravel Pack	10-20 grade silica sand	-18.0
Bottom of Gravel Pack		-36.2
Top of Natural Cave-In	Silty sand	-36.2
Bottom of Natural Cave-In		-36.8
Top of Groundwater		-35.62
Total Depth of Borehole		-36.8



Top of Protective Casing 2.5
Top of Riser 2.2
Ground Surface 0
Top of Seal -16.0
Top of Gravel Pack -18.0
Top of Screen -21.0
Bottom of Screen -36.0
Bottom of Borehole -36.8

Comments: 13 bags of sand used;1 hole plug, 3 gallons of water; 3 bags of concrete for pad, 1 metal casing, 2 bags of quikcrete used

Geologist Signature Ashley L Ager

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: B-2
Well #:
Page: 1 of 2
Project Number:
Project Name: XTO Ground Water
Project Location: OH Randel #7

Borehole Location: 36° 29' 30.46" N, 107° 59' 44.2" W
GWL Depth: Dry Hole
Drilled By: Kelly Padilla
Well Logged By: Ashley Ager
Date Started: 07/07/09
Date Completed: 07/08/09

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0		0-5'	cuttings	brown poorly sorted coarse sand and gravel - road base		easy
5	1	5-7'	split spoon, 11"	2.5 Y 6/1 Gray coarse sand sp, subrounded, backfill	0	Easy, 26 Blows
10	2	10-12	split spoon, 16"	2.5 Y 4/2 dark grayish brown, fine sand, poorly sorted, lots of fines	0	25 Blows
15	3	15-17	split spoon, 10"	2.5 Y 4/1 Dark Gray, fine silty sand, about 5% c. content, damp, backfill	0	12 Blows Wet rod
20						

Comments:

Geologist Signature: Ashley L Ager

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: B-2
Well #:
Page: 2 of 2
Project Number:
Project Name: XTO Ground Water
Project Location: OH Randel #7

Borehole Location: 36° 29' 30.46" N, 107° 59' 44.2" W
GWL Depth: dry hole
Drilled By: Kelly Padilla
Well Logged By: Ashley Ager
Date Started: 07/07/09
Date Completed: 07/08/09

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
20	4	20-22	split spoon, 19"	5 YR 3/2 Dark reddish brown CL, Clay, damp	0.1	59 Blows
25	5	25-27	split spoon, 16.5"	0 - 2": same as above 2-16.5": 10YR 6/2 light brownish gray, silty clay, dry	0	66 Blows
30	6	30-32	split spoon, 14"	same as above, damp	0	48 Blows
35	7	35-37'	split spoon, 9"	same as above, dry Stop to see if it fills	11.2	45 Blows
40						

Comments: Based on data from existing wells, damp sand layer at ~16' is water bearing unit. Contains only a small amount of water and hole is dry after drilling to 37'. Let sit for 2 hours, and did not fill in. Let sit overnight. At 11:15 am on 07/08/09, hole is still dry. Plug.

Geologist Signature: Ashley L Ager

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☒ No ☐
Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: XTO ENERGY INC. Telephone: (505)-324-1090 e-mail address:
Address: 2700 FARMINGTON AVE., BLDG. K, SUITE 1, FARMINGTON, NM 87401
Facility or well name: O. H. RANDEL #7 API #: 30-045- 24749 U/L or Qtr/Qtr D Sec 15 T 26N R 11W
County: SAN JUAN Latitude 36.49193 Longitude 107.99632 NAD: 1927 ☐ 1983 ☒ Surface Owner Federal ☒ State ☐ Private ☐ Indian ☐

Pit	Below-grade tank	
Type: Drilling ☐ Production ☒ Disposal ☐ SEPARATOR Workover ☐ Emergency ☐ Lined ☐ Unlined ☒ Liner type: Synthetic ☐ Thickness ____mil Clay ☐ Pit Volume ____bbl	Volume: ____bbl Type of fluid: Construction material: N/A Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points) 20
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points) 0
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points) 0
	Ranking Score (Total Points)	20

If this is a pit closure: (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if your are burying in place) onsite ☒ offsite ☐ If offsite, name of facility_____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☒ Yes ☐ If yes, show depth below ground surface _____ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments PIT LOCATED APPROXIMATELY 239 FT. S75E FROM WELL HEAD.
PIT EXCAVATION: WIDTH N/A ft., LENGTH N/A ft., DEPTH N/A ft.
PIT REMEDIATION: CLOSE AS IS: ☒, LANDFARM: ☐, COMPOST: ☐, STOCKPILE: ☐, OTHER ☐ (explain)
Cubic yards: N/A

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an alternative OCD-approved plan ☒.**

Date: 11/18/05

PrintedName/Title Jeff Blagg – P.E. # 11607 Signature

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:
Printed Name/Title Signature Date:

3004524749 36.49193/107.99632

CLIENT: XTO

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

LOCATION NO: _____
C.O.C. NO: 9796

FIELD REPORT: PIT CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: O.H. RANDEL WELL #: 7 TYPE: HBAN. SEP.
QUAD/UNIT: D SEC: 15 TWP: 26N RNG: 11W PM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: 1150'N/1150'W UNIT K CONTRACTOR: _____

DATE STARTED: 3/12/02
DATE FINISHED: _____
ENVIRONMENTAL SPECIALIST: MV

EXCAVATION APPROX. NA FT. x NA FT. x NA FT. DEEP. CUBIC YARDAGE: NA
DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: _____
LAND USE: RANGE - BLM LEASE: _____ FORMATION: DK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 339 FT. S75E FROM WELLHEAD.
DEPTH TO GROUNDWATER: >100' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'
NMOCD RANKING SCORE: 0 NMOCD TPH CLOSURE STD: 5000 PPM

OVM CALIB. READ. 52.7 ppm
OVM CALIB. GAS = 100 ppm RF = 0.52
TIME 11:48 (AM)/PM DATE 3/12/02

SOIL AND EXCAVATION DESCRIPTION:

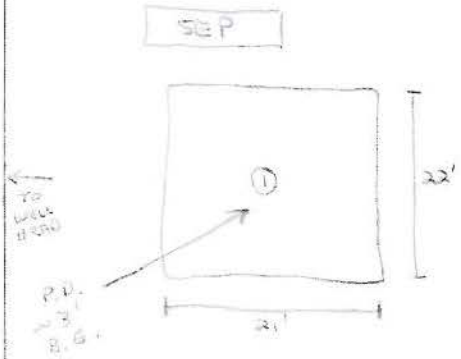
SOIL TYPE: (SAND) / SILTY SAND / SILT / SILTY CLAY / CLAY / GRAVEL / OTHER _____
SOIL COLOR: MED. GRAY
COHESION (ALL OTHERS): NON COHESIVE / SLIGHTLY COHESIVE / COHESIVE / HIGHLY COHESIVE
CONSISTENCY (NON COHESIVE SOILS): (LOOSE) / (FIRM) / DENSE / VERY DENSE
PLASTICITY (CLAYS): NON PLASTIC / SLIGHTLY 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 - SET. 4-6' ABOVE GROUP
HC ODOR DETECTED: (YES) / NO EXPLANATION - MED. GRAY SAND (STRONG)
SAMPLE TYPE: (GRAB) / COMPOSITE - # OF PTS. -
ADDITIONAL COMMENTS: CONSOLIDATED SAMPLING WITH HAND SHOVEL.

FIELD 418.1 CALCULATIONS

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

SCALE
0 FT

PIT PERIMETER



PIT PROFILE

OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 6'	1,215
2 @	
3 @	
4 @	
5 @	

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME
1@6'	TPH (8015B)	1130
"	BTEX (8021B)	"

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

TRAVEL NOTES: CALLOUT: 3/12/02 - MORN. ONSITE: 3/12/02 - MORN.

revised: 02/27/02 bel1005C.skd

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / XTO Energy	Project #:	94034-010
Sample ID:	1 @ 6'	Date Reported:	03-14-02
Laboratory Number:	22253	Date Sampled:	03-12-02
Chain of Custody No:	9796	Date Received:	03-12-02
Sample Matrix:	Soil	Date Extracted:	03-14-02
Preservative:	Cool	Date Analyzed:	03-14-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**1,750**	**0.2**
Diesel Range (C10 - C28)	**15.5**	**0.1**
Total Petroleum Hydrocarbons	**1,770**	**0.2**

ND - Parameter not detected at the stated detection limit.

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

Comments: **O.H. Randel #7 Abandoned Separator Pit Grab Sample.**

Analyst

Review

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

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / XTO Energy	Project #:	94034-010
Sample ID:	1 @ 6'	Date Reported:	03-14-02
Laboratory Number:	22253	Date Sampled:	03-12-02
Chain of Custody:	9796	Date Received:	03-12-02
Sample Matrix:	Soil	Date Analyzed:	03-14-02
Preservative:	Cool	Date Extracted:	03-14-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**3,000**	**1.8**
Toluene	**1,180**	**1.7**
Ethylbenzene	**835**	**1.5**
p,m-Xylene	**1,550**	**2.2**
o-Xylene	**1,220**	**1.0**
Total BTEX	**7,790**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	**95 %**
	1,4-difluorobenzene	**95 %**
	Bromochlorobenzene	**95 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **O.H. Randel #7 Abandoned Separator Pit Grab Sample.**

Analyst

Review

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CHAIN OF CUSTODY RECORD

09796

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG LP / XTO Energy	ABANDONED SEPARATOR PIT C.H. RANDEL #7	

Sampler:	Client No.
NJV	94034-010

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (8015B)	BTEX (8021B)	Remarks
								PRESERVED COOL
① C6'	3/12/02	1130	22253	SOIL	1	✓	✓	GRAB SAMPLE

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	3/12/02	1230	[signature]	3/12/02	1230
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

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

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

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	03-14-TPH QA/QC	Date Reported:	03-14-02
Laboratory Number:	22234	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-14-02
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	01-07-02	2.5028E-002	2.5003E-002	0.10%	0 - 15%
Diesel Range C10 - C28	01-07-02	1.2696E-002	1.2671E-002	0.20%	0 - 15%

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

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

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	ND	250	250	100.0%	75 - 125%
Diesel Range C10 - C28	ND	250	250	100.0%	75 - 125%

ND - Parameter not detected at the stated detection limit.

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

Comments: **QA/QC for samples 22234 -22239, 22253 and 22272.**

Analyst

Review

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

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	03-14-BTEX QA/QC	Date Reported:	03-14-02
Laboratory Number:	22234	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-14-02
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	6.9839E-002	7.0049E-002	0.3%	ND	0.2
Toluene	5.0724E-002	5.0825E-002	0.2%	ND	0.2
Ethylbenzene	8.2086E-002	8.2333E-002	0.3%	ND	0.2
p,m-Xylene	7.1064E-002	7.1278E-002	0.3%	ND	0.2
o-Xylene	6.2661E-002	6.2787E-002	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	ND	ND	0.0%	0 - 30%	1.8
Toluene	ND	ND	0.0%	0 - 30%	1.7
Ethylbenzene	ND	ND	0.0%	0 - 30%	1.5
p,m-Xylene	ND	ND	0.0%	0 - 30%	2.2
o-Xylene	ND	ND	0.0%	0 - 30%	1.0

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	ND	50.0	49.8	99.6%	39 - 150
Toluene	ND	50.0	49.8	99.6%	46 - 148
Ethylbenzene	ND	50.0	49.8	99.6%	32 - 160
p,m-Xylene	ND	100	99.5	99.5%	46 - 148
o-Xylene	ND	50.0	49.8	99.6%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **QA/QC for sample 22234 - 22239, 22253 and 22272.**

Analyst

Review

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

BLAGG ENGINEERING, INC.
P O Box 87, Bloomfield, New Mexico 87413
Phone: (505)632-1199 Fax: (505)632-3903

April 17, 2002

Mr. Roger Anderson
Chief of Environmental Bureau
State of New Mexico Oil Conservation Division (NMOCD)
1220 St. Francis Drive
Santa Fe, New Mexico 87505

RE: Groundwater Impact
XTO Energy, Inc.

O.H. Randel # 7 Well site
Legal Description: Unit D, Sec. 15, T26N, R11W
San Juan County, New Mexico

Dear Mr. Anderson:

Physical observation of groundwater after monitor well construction was completed on March 22, 2002 at the above referenced well site indicates approximately 0.32 ft. or 3.84 inches of free phase product. The monitor well is located within an abandoned separator pit area. XTO Energy will adhere to its NMOCD approved groundwater management plan during further assessment of the apparent hydrocarbon contamination encountered. Depth to free phase product in the monitor well was approximately 16.36 ft. below the ground surface.

If you have any questions concerning this information, please do not hesitate to contact Nelson Velez or myself at (505) 632-1199. Thank you for your cooperation.

Respectfully submitted,
Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.
President

cc: Denny Foust, Environmental Geologist, NMOCD, Aztec, NM
Terry Matthews, Production Superintendent, XTO Energy, Inc., Farmington, NM
Nina Hutton, Environmental & Safety Manager, XTO Energy, Inc., Ft. Worth, TX

NJV/njv

RANDEL-7.LTR

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

August 15, 2006

Mr. Steve Austin
Navajo Nation EPA
PO Box 1999
Shiprock, NM 87420

CERTIFIED MAIL: 7004 1160 0007 4952 1517

RE: OH Randel #7

Dear Mr. Austin,

XTO Energy Inc. (XTO) has contracted Lodestar Services, Incorporated (Lodestar) to oversee groundwater monitoring and remedial activities at the OH Randel #7 natural gas production well. It has come to our attention that the well is located on land regulated by the Navajo Nation Environmental Protection Agency (NNEPA). Previous regulatory correspondence has been with the New Mexico Oil Conservation Division (NMOCD). An annual comprehensive report was submitted to the NMOCD in January 2006 and is included for your review.

The OH Randel #7 is located in Unit D of Section 16 of Township 26N, Range 11W, and includes a former oil-water-separator pit that may have affected shallow groundwater. Six groundwater monitoring wells were previously installed on the site to investigate groundwater quality. One of the wells, MW-6, contains free-phase hydrocarbons. Previously MW-1 and MW-2 contained free-phase hydrocarbons. MW-1 is located in the center of the former pit. MW-2 is directly adjacent to the pit, and MW-6 is located down gradient of the pit. The annual report included herein has several groundwater contour maps provided by Blagg Engineering that indicate varying groundwater flow directions. Navajo Agricultural Products Incorporated (NAPI) conducts irrigation adjacent to the site and may influence groundwater flow direction.

The following steps are proposed remove impacted soil and free-phase hydrocarbons:

1. Excavate affected soil associated with historical operations from the former pit. Impacted soil will be disposed at a local land farm permitted by the NMOCD. Soil headspace gas will be monitored with a photo-ionization detector (PID) to determine extent of impacted soil during excavation according to the NMOCD Guidelines for headspace analysis. Soil above 10 milligrams per kilogram (mg/kg) benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX), and 100 mg/kg total petroleum hydrocarbons will be removed. Laboratory analyses of composite samples collected from the sidewalls of the excavation will be used to document that impacted soil has been removed.
2. Erect temporary fencing around the excavated site and remove impacted water and free-phase hydrocarbons from the pit.

3. Once the free-phase hydrocarbons have been removed, backfill the excavation site with clean soil.
4. Replace groundwater-monitoring wells as necessary.
5. Install additional down gradient monitoring wells as necessary to characterize impacted groundwater.
6. Remove free phase hydrocarbons from groundwater, then sample groundwater-monitoring wells for benzene, toluene, ethylbenzene and total xylenes (BTEX) on a quarterly basis to monitor progress at the site.

Following completion of the above tasks, XTO will provide a letter report describing onsite activities and analytical results. XTO wishes to complete this work as soon as practical and will contact you to schedule activities. Should you have any questions or require additional information, please do not hesitate to contact Lisa Winn of XTO at (505) 324-1090 or you can call me at (505) 334 2791.

Sincerely,
LODESTAR SERVICES, INC

Martin Nee

Cc: Lisa Winn, XTO, w/o enclosures
Kim Champlin, XTO, w/o enclosures
Ashley Ager, LSI, w/o enclosures
Glenn Von Gonten, NMOCD
File

Attachments: Annual Report

cc mr Jim Walker USEPA

Lodestar Services, Incorporated
PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

January 29, 2007

Mr. William Freeman
Navajo Nation Environmental Protection Agency
PO Box 1999
Shiprock, NM 87420

RE: Report of Excavation and Sampling at OH Randel #7

Dear Mr. Freeman:

XTO Energy Inc. (XTO) operates the OH Randel #7 natural gas production well located in Unit D of Section 16 of Township 26N, Range 11W, San Juan County, New Mexico. A former oil-water-separator pit may have impacted soil and shallow groundwater at the site. On August 15, 2006, XTO submitted a work plan to the Navajo Nation Environmental Protection Agency (NNEPA) describing planned remedial activities to investigate and remove impacted soil. XTO contracted Lodestar Services, Incorporated (Lodestar) to direct excavation activities according to the August 15 work plan. Core Oilfield Services completed the excavation, backfilling, and transportation of impacted soil to Envirotech Inc.'s land farm. Clean backfill was purchased from Moss Excavation's gravel pit located on highway 550 in Bloomfield, NM.

On November 13-27, 2006, a geologist from Lodestar was present during excavation of impacted soil at the OH Randel #7. During excavation, field screening according to the New Mexico Oil Conservation Division's (NMOCD) guidelines for headspace analysis was conducted to determine extent of impacted soil by collecting samples from the sidewalls and floor of the excavated pit. Following headspace screening and excavation, composite samples from the sidewalls and floor of the excavation were collected for laboratory analysis. Samples were collected where field screening indicated the highest concentrations of hydrocarbons. Compositing included placing four aliquots of soil from a given wall or floor into a one-gallon plastic bag. The soil within the bag was thoroughly mixed before filling a four-ounce glass jar. The sample was immediately placed on ice, and maintained under strict chain-of-custody until delivered to Envirotech Laboratories in Farmington, NM. Envirotech Laboratories analyzed the samples for benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH) by United States Environmental Protection Agency (USEPA) methods 8021 and 8015, respectively. The results of sample analyses are as follows:

	GRO (ppm)	DRO (ppm)	TPH (ppm)	Benzene (ppb)	Toluene (ppb)	Ethyl benzene (ppb)	P&M Xylenes (ppb)	O Xylenes (ppb)	Total BTEX (ppb)
NMOCD Standard			100	10,000					50,000
North Excavation North Wall	2.6	3.6	6.2	2.2	20.3	39.1	374	64.8	500
North Excavation East Wall	1080	266	1350	518	3230	3290	9590	3610	20240

	GRO (ppm)	DRO (ppm)	TPH (ppm)	Benzene (ppb)	Toluene (ppb)	Ethyl benzene (ppb)	P&M Xylenes (ppb)	O Xylenes (ppb)	Total BTEX (ppb)
NMOCD Standard			100	10,000					50,000
North Excavation West Wall	8.0	ND	8.0	2.0	746	889	2170	979	4790
North Excavation Floor	3.6	ND	3.6	10.5	65.9	119	619	202	1020
South Excavation East Wall	5.2	15.0	20.2	7.4	50.7	16.7	78.6	37.0	190
South Excavation West Wall	0.5	0.4	0.9	3.3	9.1	19.6	84.7	28.4	145
South Excavation Floor	ND	ND	ND	ND	4.4	7.7	24.5	5.3	41.9
South Excavation South Wall	ND	ND	ND	ND	1.9	7.9	24.8	8.7	43.3

GRO: Gasoline Range Organics; DRO: Diesel Range Organics;
ND: Not Detected in sample; ppm: parts per million; ppb: parts per billion

Approximately six thousand eight hundred and eighty two cubic yards of soil were removed for treatment to the land farm. Lodestar and XTO met with the USEPA and the NNEPA on November 27, 2006 at the job site and received permission to backfill the excavation based on the above results.

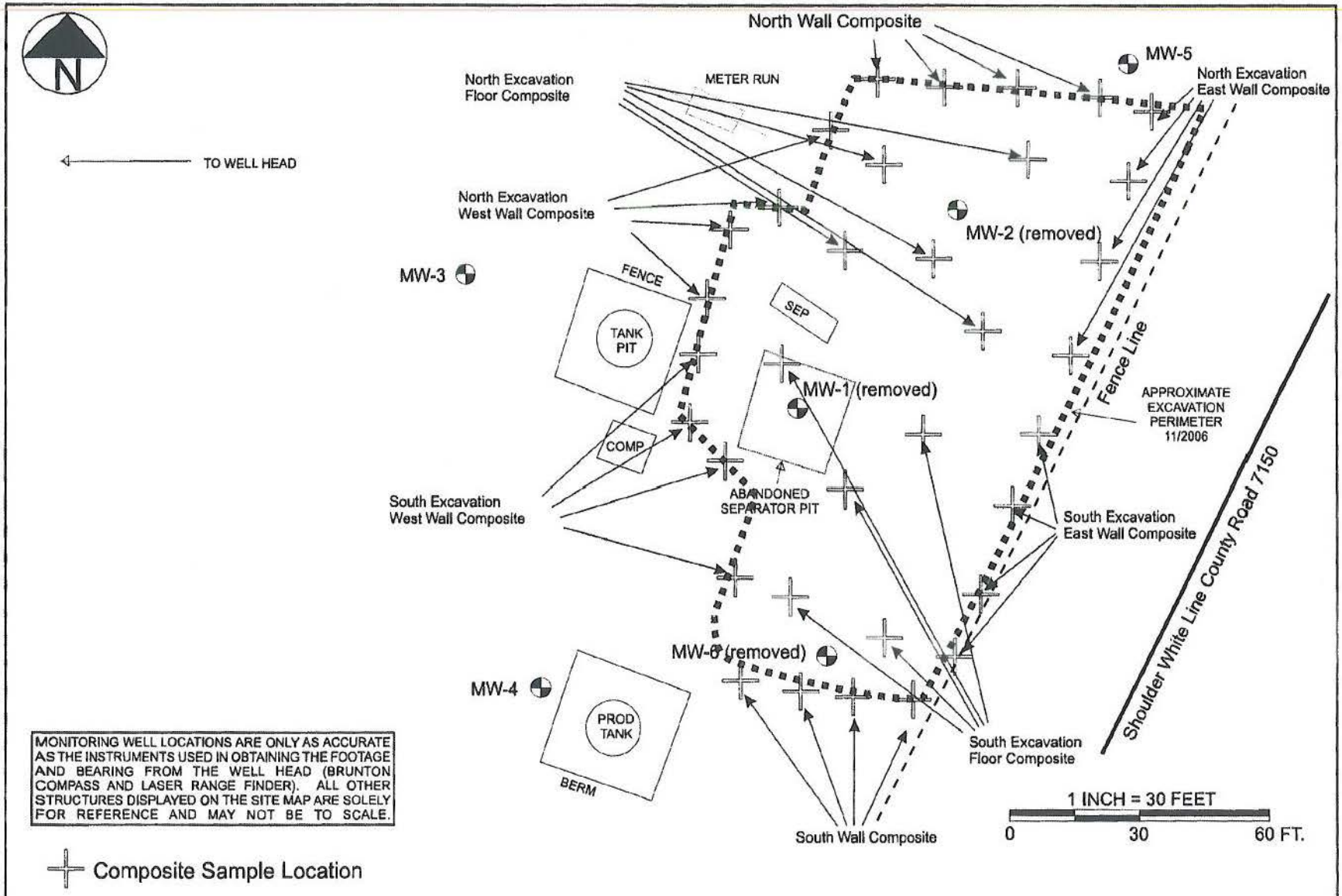
Six groundwater monitoring wells were previously installed on the site to investigate groundwater quality. Three of the wells, MW-1, MW-2, and MW-6 were removed during excavation activities.

Laboratory reports and Bill-of-Lading copies are attached. Please contact Lisa Winn of XTO at (505) 324-1090 with any questions that may arise.

Sincerely,
Lodestar Services, Inc.

Martin Nee

Cc: Jim Walker, USEPA
Lisa Winn, XTO Energy
Kim Champlin, XTO Energy
Ashley Ager, Lodestar Services



Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	OH RANDEL #7 NW/4 NW/4 SEC. 15, T26N, R11W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO Excavation DRAWN BY: MJN REVISED: 01/29/07	Composite Sample Location Map 1/29/2007

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Fax (615) 758-5859

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

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

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

November 22, 2010

ESC Sample # : L489776-01

Site ID :

Project # : XTO1002

Date Received : November 18, 2010
Description : Randel

Sample ID : OH RANDEL MW-9

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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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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REPORT OF ANALYSIS

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

November 22, 2010

ESC Sample # : L489776-03

Site ID :

Project # : XTO1002

Date Received : November 18, 2010
Description : Randel

Sample ID : TRIP BLANK

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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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
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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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XTO Energy - San Juan Division
James McDaniel
382 Road 3100

Aztec, NM 87410

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: ~~Jamie McDaniel~~ Julie Linn, RG

Site/Facility ID#

P.O.#

Collected by(signature):

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

No of Cntrs

Analysis/Container/Preservative

BTEX (8021)

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No of Cntrs	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	

D062

Chain of Custody
Page___of___

Prepared by:

ENVIRONMENTAL Science corp
12065 Lebanon Road
Mt. Juliet TN 37122
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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 Linn	11-17-10	1500		473491981262743	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

COMPLIANCE / ENGINEERING / REMEDIATION

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

January 28, 2011

Mr. James McDaniel
XTO Energy, Inc.
382 Road 3100
Aztec, New Mexico 87410

RE: Hydrogen Peroxide Injection Work Plan
XTO Energy, Inc.
OH Randel #7
San Juan County, New Mexico

Dear Mr. McDaniel:

LT Environmental, Inc. (LTE) has prepared the following scope of work for XTO Energy, Inc. (XTO) to conduct hydrogen peroxide injection as a remedial alternative at the OH Randel #7 (Site) to address petroleum hydrocarbon impacts to groundwater at the Site.

Site Description

The Site is located on the west side of County Road 7150 approximately 4 miles from the intersection with U.S. Highway 550 south at latitude 36.49163 degrees (°) north by -107.995739° west, World Geodetic System 1984 (WGS 84) in San Juan County, New Mexico (Figure 1).

Groundwater at the Site contains concentrations of benzene, toluene, ethylbenzene and total xylenes (BTEX) in excess of the New Mexico Water Quality Control Commission (NMWQCC) standards. During installation of new production equipment in 2002, XTO identified impacted soils presumed to be remnants of an abandoned earthen separator pit. In response, XTO installed six groundwater monitoring wells to characterize hydrocarbon impacts at the Site (Figure 2). Phase-separated hydrocarbons were identified in monitoring wells MW-1, MW-2 and MW-6 and actively recovered from 2002 through 2004. Additional remediation included excavation of approximately 9,000 cubic yards of impacted soils in 2006. MW-1, MW-2, and MW-6 were removed during excavation activities. Two additional monitoring wells (MW-7 and MW-8) were installed in 2007 north and east of the former excavation to identify any remaining impacts. Subsequent groundwater sampling indicated that groundwater in MW-3, MW-4, and MW-5 contained little to no concentrations of BTEX and sampling from these wells was discontinued. Concentrations of BTEX in MW-7 remained above NMWQCC standards, and XTO installed MW-9 in 2009. Groundwater sampled from MW-9 initially contained elevated concentrations of BTEX, but concentrations dropped to beneath NMWQCC standards. During 2010, XTO added chemical oxygenate to MW-7 to enhance

biodegradation of hydrocarbons in the groundwater, but BTEX concentrations remain high.

Table 1 provides sample results for the groundwater monitoring wells. Benzene concentrations in groundwater sampled from MW-7 have been highly variable, ranging from as high as 12,000 micrograms per liter (µg/l) on November 7, 2008 to 82 µg/l on August 12, 2010. Concentrations of total xylenes ranged from 17,000 µg/l on November 7, 2008 to 200 µg/l on August 12, 2010. Toluene concentrations are also variable, and have been as high as 16,000 µg/l on November 7, 2008. Ethylbenzene concentrations have been below NMWQCC standards since July of 2009. The anomalously low BTEX concentrations observed during the August 2010 may be evidence that the addition of chemical oxygenate had some impact on BTEX concentrations in this well.

Groundwater is encountered at depths from approximately 13 feet to 20 feet below ground surface (bgs) in all wells except MW-9, in which depth to groundwater occurs at approximately 20 feet to 35 feet bgs. This is likely due to the fact that MW-9 is not screened as deep as the other wells at the Site and is completed in tighter soils. Water level data from MW-9 is often not used to interpret groundwater flow across the Site. An irrigated field is located less than 50 feet west of the Site. Irrigation water is supplied from Navajo Reservoir, not groundwater, and may have some effect on groundwater flow direction, which varies from the southeast to northeast. The most recent potentiometric surface map is shown on Figure 2 and shows a northeasterly flow direction.

Lithology at the Site consists of poorly sorted sand with minor to no fines from ground surface to approximately 12 feet to 15 feet bgs. Silt content increases in soils from 15 feet 20 feet bgs. From 20 feet to 37 feet bgs, a tight clay layer exists. The primary water bearing unit is a thin aquifer perched on top of the clay layer at approximately 20 feet bgs.

Scope of Work

Currently, the only remedial action at this Site is the use of chemical oxygenate in MW-7. LTE understands that XTO desires to pursue a more aggressive remedial option, consisting of slugs of concentrated liquid hydrogen peroxide injected via gravity feed into MW-7. Injection of hydrogen peroxide will directly oxidize organics (BTEX) and enhance the in situ aerobic degradation by increasing oxidation-reduction reactions in the subsurface, thereby creating strong oxidizing groundwater conditions. This allows for a greater mass transfer of available dissolved oxygen for ongoing bio-activity. Furthermore, the hydrogen peroxide can act as a surfactant at the groundwater interface where absorbed-phase contaminants are present.

The proposed injection will take place over a period of 30 days and will be closely monitored for effectiveness. The large volumes of hydrogen peroxide required to optimally treat the high concentrations of BTEX present in groundwater at MW-7 may

not be feasible due to the low permeability of surrounding clays near the screened interval. Application volumes will need to be adjusted following initial injection of hydrogen peroxide. The following sequence is proposed as a test to determine if higher volumes of a more concentrated solution can be practically applied:

1. Purge the groundwater from MW-7 until dry.

2. Inject a diluted hydrogen peroxide solution into MW-7. The total well casing volume of MW-7 is 5.2 gallons. This volume will be used as a starting point for hydrogen peroxide volume application. Additional volumes will be added as feasible, with the goal being addition of as much solution as possible, but no more than 40 gallons at a time. Should the solution not infiltrate the surrounding soils immediately, LTE will add solution to the wells until the solution is within 6 inches of the top of the well casing and cease.

3. For safety reasons, the concentration of the hydrogen peroxide will not exceed 8%, the level at which hydrogen peroxide is classified as a Class 1 Oxidizer by the U.S. Department of Transportation. An 8% solution will also minimize the temperature rise anticipated by the introduction of hydrogen peroxide as it reacts with contaminants in the groundwater.

4. Schedule a 7-day interval to allow for treatment to occur.

5. Measure depth to groundwater in MW-7.

6. Purge three well casing volumes from MW-7. If three well casing volumes cannot be purged, then purge the wells until dry. Monitor field parameters including pH, electrical conductivity, and temperature during purging. Collect a groundwater sample for analysis of BTEX by EPA Method 8021B to determine effectiveness of the treatment and alter hydrogen peroxide concentrations and volumes as necessary.

7. Repeat steps 1 through 6 weekly for a total of 4 weekly events.

8. After 4 weekly treatments, collect a weekly groundwater sample for analysis of BTEX by EPA Method 8021B for an additional 4 weeks to determine if rebound of BTEX concentrations occurs.

9. Analyze results and make recommendations for additional treatment or monitoring.

All samples will be shipped via overnight courier to ESC Lab Sciences in Mt. Juliet, Tennessee for analysis with a standard turn-around time. LTE will prepare a site-specific health and safety plan (HASP) for the hydrogen peroxide injection and groundwater sampling activities. A cost estimate for this work plan will be transmitted to XTO under separate cover.

Schedule

LTE proposed implementation of this plan in March and April of 2011. Upon completion of the 8 weeks of activities, LTE will evaluate the data and submit a report to XTO. The report will include recommendations for any additional activities at the Site that may be necessary.

LTE appreciates the opportunity to provide this work plan to XTO. Should you have any questions, please do not hesitate to call LTE at 970-385-1096.

Sincerely,

LT ENVIRONMENTAL, INC.

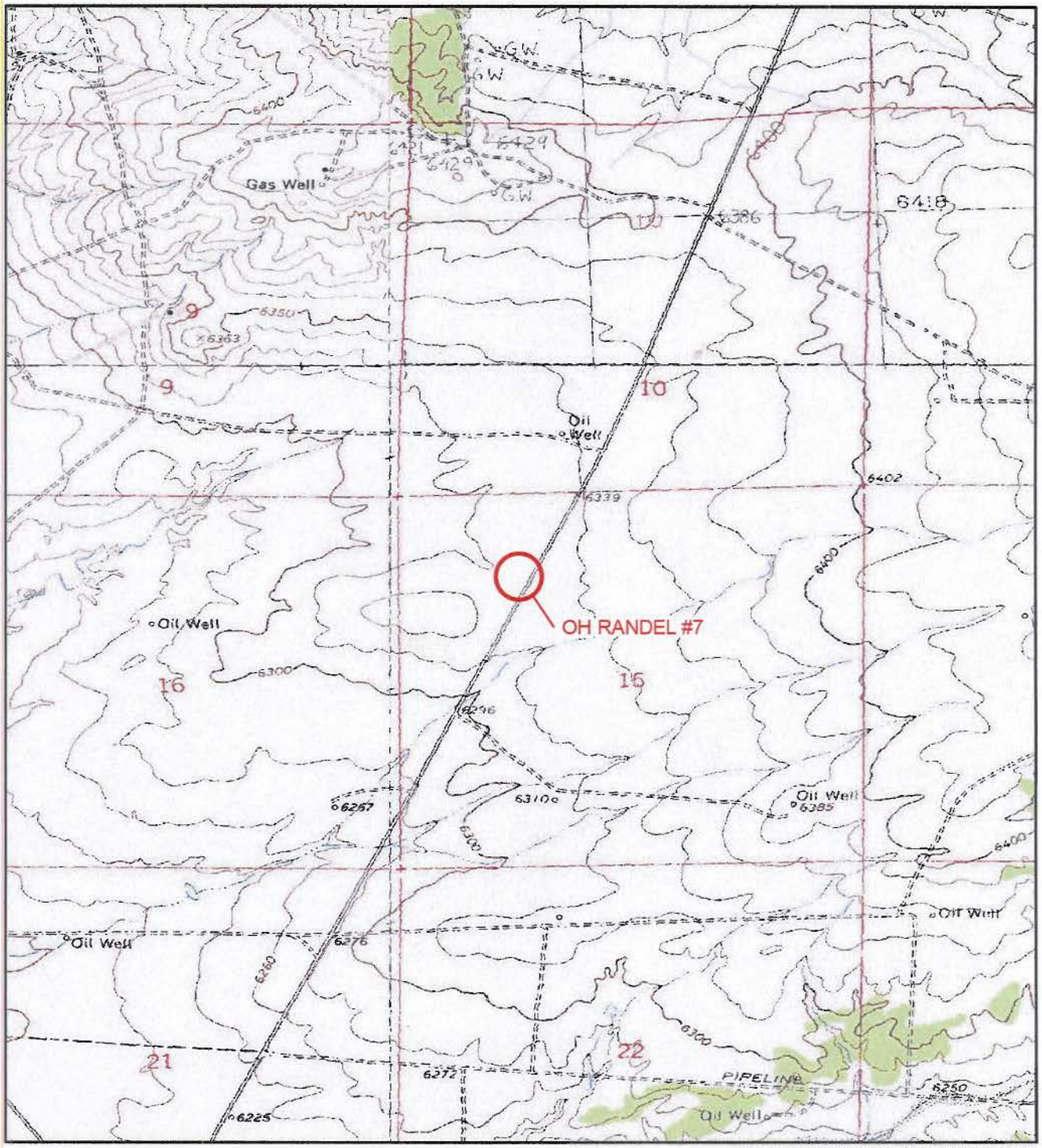
Julie Linn, P.G.
Senior Geologist

CC: Ashley Ager, LTE

Attachments (3)

Figure 1 – Site Location Map
Figure 2 – Site Map
Table 1 – Groundwater Quality Summary Table

FIGURES



LEGEND

SITE LOCATION

IMAGE COURTESY OF USDA/NRCS, VARIOUS DATES

0 2,000 4,000

Feet

N

FIGURE 1
SITE LOCATION MAP
OH RANDEL #7
NWNW SEC 15 T26N R11W
SAN JUAN COUNTY, NEW MEXICO
XTO ENERGY, INC.

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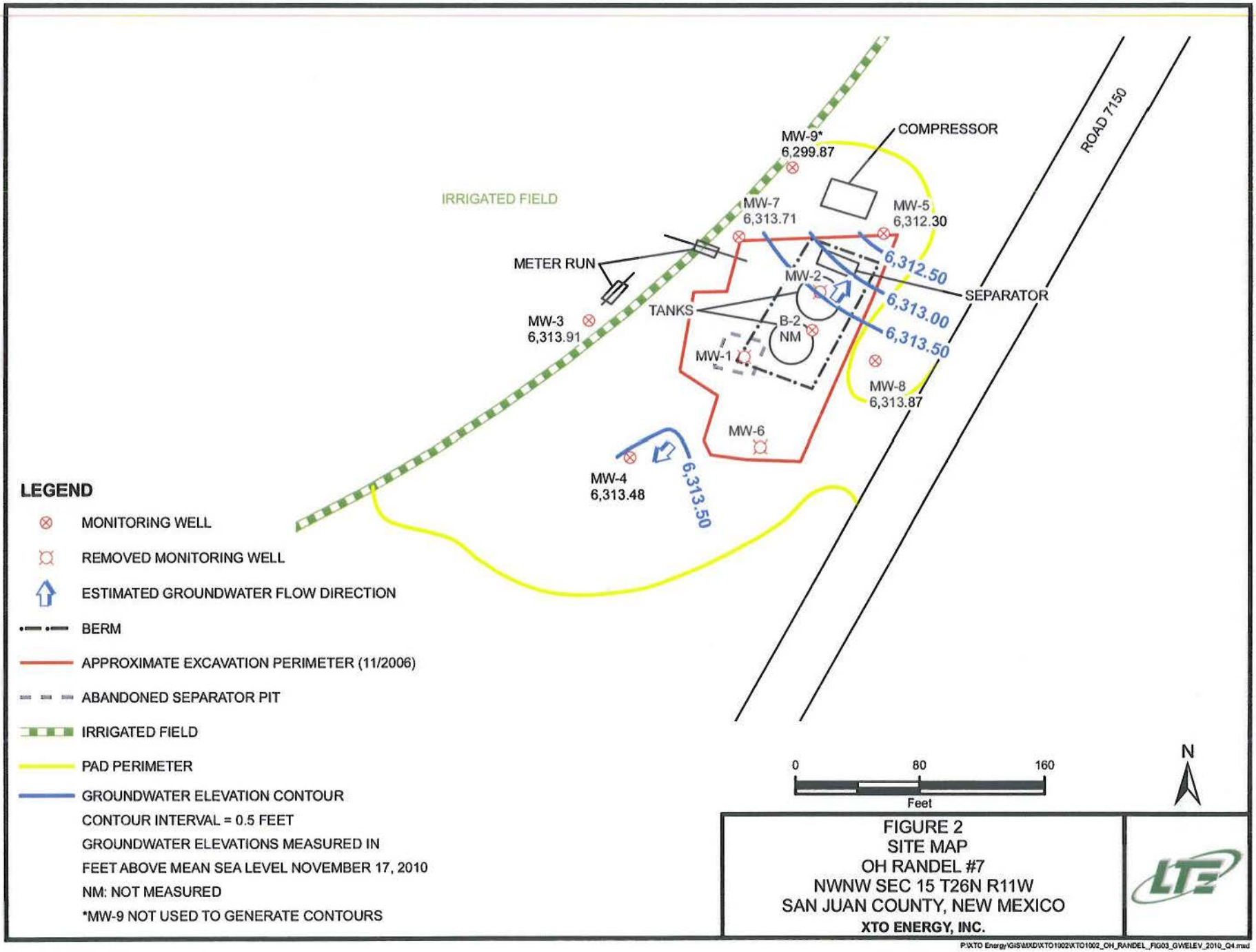

FIGURE 2
SITE MAP
OH RANDEL #7
NWNW SEC 15 T26N R11W
SAN JUAN COUNTY, NEW MEXICO
XTO ENERGY, INC.

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TABLE

TABLE 1

GROUNDWATER RESULTS SUMMARY TABLE
OH RANDEL #7
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-1	4/22/2002	NS	NS	NS	NS
MW-1	4/24/2002	NS	NS	NS	NS
MW-1	8/27/2002	NS	NS	NS	NS
MW-1	10/08/2002	NS	NS	NS	NS
MW-1	5/23/2003	NS	NS	NS	NS
MW-1	5/28/2003	NS	NS	NS	NS
MW-1	6/6/2003	NS	NS	NS	NS
MW-1	6/18/2003	NS	NS	NS	NS
MW-1	6/26/2003	NS	NS	NS	NS
MW-1	7/31/2003	NS	NS	NS	NS
MW-1	8/29/2003	NS	NS	NS	NS
MW-1	6/21/2004	NS	NS	NS	NS
MW-1	9/20/2006	NS	NS	NS	NS
MW-1	12/5/2006	NS	NS	NS	NS
MW-2	4/22/2002	NS	NS	NS	NS
MW-2	4/24/2002	NS	NS	NS	NS
MW-2	8/27/2002	NS	NS	NS	NS
MW-2	10/08/2002	NS	NS	NS	NS
MW-2	5/23/2003	NS	NS	NS	NS
MW-2	5/28/2003	NS	NS	NS	NS
MW-2	6/6/2003	NS	NS	NS	NS
MW-2	6/18/2003	NS	NS	NS	NS
MW-2	6/26/2003	NS	NS	NS	NS
MW-2	7/31/2003	NS	NS	NS	NS
MW-2	8/29/2003	NS	NS	NS	NS
MW-2	6/21/2004	NS	NS	NS	NS
MW-2	9/20/2006	NS	NS	NS	NS
MW-2	12/5/2006	NS	NS	NS	NS
MW-3	4/22/2002	NS	NS	NS	NS
MW-3	4/24/2002	24	2.4	0.58	200
MW-3	8/27/2002	9.4	ND	ND	150
MW-3	10/8/02	NA	NA	NA	NA
MW-3	3/3/03	5.5	ND	ND	43
MW-3	6/18/2003	6.1	0.97	ND	43
MW-3	8/29/03	3.2	0.53	ND	24
MW-3	9/20/2006	NS	NS	NS	NS

TABLE 1

GROUNDWATER RESULTS SUMMARY TABLE
OH RANDEL #7
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-3	12/5/2006	<1	<1	<1	<3
MW-3	3/8/2007	NS	NS	NS	NS
MW-3	5/17/2007	<1	<1	<1	<2
MW-3	8/9/2007	<1	<1	<1	<2
MW-3	5/12/2008	NS	NS	NS	NS
MW-3	11/7/2008	NS	NS	NS	NS
MW-3	7/8/2009	NS	NS	NS	NS
MW-3	11/5/2009	NS	NS	NS	NS
MW-3	5/25/2010	NS	NS	NS	NS
MW-3	8/12/2010	NS	NS	NS	NS
MW-3	11/17/2010	NS	NS	NS	NS
MW-4	4/22/2002	NS	NS	NS	NS
MW-4	4/24/2002	ND	0.59	ND	2.1
MW-4	8/27/2002	1.3	ND	ND	3.5
MW-4	10/8/02	NS	NS	NS	NS
MW-4	3/3/03	4.2	ND	ND	5
MW-4	6/18/2003	6.2	ND	ND	4.5
MW-4	8/29/03	8.3	ND	ND	4.3
MW-4	9/20/2006	NS	NS	NS	NS
MW-4	12/5/2006	<1	<1	<1	<3
MW-4	3/8/2007	NS	NS	NS	NS
MW-4	5/17/2007	<1	<1	<1	<2
MW-4	8/9/2007	<1	<1	<1	<2
MW-4	5/12/2008	NS	NS	NS	NS
MW-4	11/7/2008	NS	NS	NS	NS
MW-4	7/8/09	NS	NS	NS	NS
MW-4	11/5/09	NS	NS	NS	NS
MW-4	5/25/10	NS	NS	NS	NS
MW-4	8/12/10	NS	NS	NS	NS
MW-4	11/17/10	NS	NS	NS	NS
MW-5	4/22/2002	NS	NS	NS	NS
MW-5	4/24/2002	**510**	0.64	8.9	240.0
MW-5	8/10/2002	NA	NA	NA	NA
MW-5	6/18/2003	**1,100**	20	ND	**660.0**
MW-5	6/21/2004	**2,000**	ND	ND	260.0

TABLE 1

GROUNDWATER RESULTS SUMMARY TABLE
OH RANDEL #7
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-5	6/28/2005	**1,100**	15	ND	160.0
MW-5	9/20/2006	NS	NS	NS	NS
MW-5	12/5/2006	**37**	<1	<1	4.1
MW-5	3/8/2007	NS	NS	NS	NS
MW-5	5/17/2007	<1	<1	<1	<2
MW-5	8/9/2007	NS	NS	NS	NS
MW-5	5/12/2008	NS	NS	NS	NS
MW-5	11/7/2008	NS	NS	NS	NS
MW-5	7/8/2009	NS	NS	NS	NS
MW-5	11/5/2009	NS	NS	NS	NS
MW-5	5/25/2010	NS	NS	NS	NS
MW-5	8/12/2010	NS	NS	NS	NS
MW-5	11/17/2010	NS	NS	NS	NS
MW-6	4/22/2002	NS	NS	NS	NS
MW-6	4/24/2002	**6,100**	**4,800**	**920**	**6,600**
MW-6	8/27/2002	NS	NS	NS	NS
MW-6	10/8/02	NS	NS	NS	NS
MW-6	5/23/2003	NS	NS	NS	NS
MW-6	5/28/2003	NS	NS	NS	NS
MW-6	6/6/2003	NS	NS	NS	NS
MW-6	6/18/2003	NS	NS	NS	NS
MW-6	6/26/2003	NS	NS	NS	NS
MW-6	7/31/2003	NS	NS	NS	NS
MW-6	8/29/2003	NS	NS	NS	NS
MW-6	6/21/2004	NS	NS	NS	NS
MW-6	9/20/2006	NS	NS	NS	NS
MW-6	12/5/2006	NS	NS	NS	NS
MW-7	5/17/07	**8,500**	**17,000**	**980**	**16,000**
MW-7	8/9/07	**9,800**	**11,000**	**770**	**12,000**
MW-7	11/27/07	**12,000**	**9,000**	**940**	**13,000**
MW-7	5/12/08	**7,900**	**11,000**	**830**	**12,000**
MW-7	11/7/08	**12,000**	**16,000**	**1,100**	**17,000**
MW-7	7/8/09	**9,800**	**8,200**	<100	**12,000**
MW-7	11/5/09	**9,800**	**7,900**	570	**13,000**
MW-7	5/25/10	**7,200**	**3,800**	440	**11,000**

TABLE 1

GROUNDWATER RESULTS SUMMARY TABLE
OH RANDEL #7
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-7	8/12/10	**82**	58	9.2	200
MW-7	11/17/10	**5,200**	**5,500**	76.0	**3,400**
MW-8	5/17/07	<1.0	1.9	<1.0	3.7
MW-8	8/9/07	<1.0	<1.0	<1.0	<2.0
MW-8	11/27/07	**21.0**	<1.0	<1.0	<2.0
MW-8	5/12/08	1.4	<1.0	<1.0	<2.0
MW-8	11/7/08	1.2	<1.0	<1.0	<2.0
MW-8	7/8/09	<1.0	<1.0	<1.0	<2.0
MW-8	11/5/09	1.1	<1.0	<1.0	<2.0
MW-8	5/25/10	NS	NS	NS	NS
MW-8	8/12/10	NS	NS	NS	NS
MW-8	11/17/10	NS	NS	NS	NS
MW-9	7/8/09	**91**	160	6.9	100
MW-9	11/30/09	<1	<1	<1	<2
MW-9	5/25/10	<1.0	<1.0	<1.0	<2.0
MW-9	8/12/10	<0.5	<5.0	<0.5	<1.5
MW-9	11/17/10	2.4	<5.0	<0.5	<1.5

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
BOLD Indicates the result exceeds the NMWQCC Standard
MW-1, MW-2, and MW-6 were destroyed during excavation activities in 2006.