3R – 470

2015 GW WP

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COMPLIANCE / ENGINEERING / REMEDIATION

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September 11, 2015

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

RE: Subsurface Investigation Results and Remediation Work Plan
XTO Energy, Inc.
Sullivan Gas Com D #1E
API# 30-045-24083
Bloomfield, New Mexico

Dear Mr. McDaniel:

LT Environmental, Inc. (LTE) is pleased to present to XTO Energy, Inc. (XTO) this letter summarizing the results of a subsurface investigation and a remediation work plan to address identified soil and groundwater impacts at the Sullivan GC D #1E (Site). The Site is located south of Sullivan Road in Bloomfield, New Mexico approximately one quarter mile southeast of the San Juan River in Unit F of Section 26 of Township 29 North and Range 11 West (Figure 1). The subsurface investigation consisted of soil and groundwater sampling to delineate hydrocarbon impacts. Based on site conditions, LTE proposes *in situ* remediation consisting of enhanced fluid recovery and an air sparging/soil vapor extraction (AS/SVE) system.

SITE BACKGROUND

XTO identified a release at the Site on June 1, 2015. The source was a failed union in a fiberglass pipeline connecting the separator and aboveground storage tank. XTO responded by collecting subsurface soil samples from potholes and with a hand auger in locations depicted on Figure 2. Soil sampling results are presented on Table 1 and on Figure 3. The laboratory analytical results indicated soil was impacted at the source from approximately 4 feet below ground surface (bgs) to the depth that saturated sediments were observed at approximately 18.5 feet bgs. Concentrations of benzene from samples collected under the source ranged from 10 milligrams per kilogram (mg/kg) at 8 feet bgs to 53 mg/kg at 19 feet bgs. Total petroleum hydrocarbons (TPH) were detected in the soil samples as high as 16,300 mg/kg at 19 feet bgs.

Based on the presence of saturated sediments, XTO attempted to collect groundwater samples from BH-1, BH-2, and BH-3. The sidewalls of BH-1 collapsed and no groundwater was sampled at that location. A groundwater sample was collected from BH-2 and BH-3 for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX). The concentrations of benzene, toluene, and total xylenes in the sample collected from BH-2 exceeded New Mexico Water Quality Control Commission (NMWQCC) standards as presented in Table 2. The groundwater sample collected from BH-3 contained no detectable concentrations of benzene, toluene, and ethylbenzene. Although total xylenes were detected, the concentration did not exceed NMWQCC standards.

SOIL INVESTIGATION

On August 19, 2015, LTE utilized a Geoprobe® 6620-DT direct-push drilling rig operated by Earth Worx Environmental Services, LLC to better delineate impacted soil near the source of the release. Soil borings

SB01 through SB09 were advanced to the saturated zone in locations depicted on Figure 2. During the advancement of soil borings, a geologist described soil samples according to the Unified Soil Classification System and evaluated soil for potential signs of environmental impacts by means of visual observations (i.e., inspection for staining/mottling) and olfactory assessment (i.e., odors). LTE conducted field screening for volatile aromatic hydrocarbons using a photoionization detector (PID) with a 10.6 electron-volt lamp on the soil sample collected from the interval immediately beneath the ground surface and every five feet thereafter in addition to any soil that was visibly stained or had a hydrocarbon odor. Field screening was conducted in accordance with the New Mexico Oil Conservation Division's (NMOCD) *Guidelines for Remediation of Leaks, Spills, and Releases*, dated August 13, 1993. Soil boring logs are included as Attachment A.

Soil samples for laboratory analysis were collected from soil borings SB02, SB07, and SB08 from the unsaturated section of core containing the highest field screening results. Soil samples were not collected from soil borings where volatile organic compounds were not detected above 100 parts per million (ppm) during field screening. To minimize loss of volatile aromatic hydrocarbons, the soil samples were firmly packed into glass soil jars supplied by the laboratory and immediately placed on ice in a cooler. The sample jars were labeled with the date and time of collection, sample identifier, project name, collector's name, and parameters to be analyzed. Samples were shipped on ice to ESC Lab Sciences in Mt. Juliet, Tennessee (ESC) for analysis. Strict chain-of-custody (COC) protocol was followed from sampling through shipment. The date and time sampled, sample identifier, sampler's name, required analyses, and sampler's signatures were included on the COC. Soil samples were analyzed for BTEX and TPH-gasoline range organics (GRO) by United States Environmental Protection Agency (EPA) Method 8021 and TPH-diesel range organics (DRO) by EPA Method 8015.

The number of soil borings advanced by the Geoprobe® near the release origin was limited to maintain a safe distance from subsurface pipelines. On August 21, 2015, LTE personnel returned to the Site to utilize a hand auger due to a high concentration of subsurface utilities and equipment in the vicinity of the source area. Soil borings SB10 through SB16 were advanced to the saturated zone or until refusal (large cobbles). Soil samples were collected from SB10, SB11, SB12, SB14, and SB15 and submitted to ESC for analysis of BTEX and TPH.

GROUNDWATER INVESTIGATION

LTE collected groundwater grab samples from SB03, SB05, and SB06 by advancing Hydropunch™ tooling with the Geoprobe® and using a peristaltic pump with clean disposable tubing to fill three non-preserved 40 milliliter glass vials with zero headspace to prevent degradation of the samples. The groundwater samples were shipped on ice at 4 degrees Celsius under strict chain-of-custody procedures to the laboratory to be analyzed for BTEX according to EPA Method 8021B within the required holding time.

On September 4, 2015, LTE used a hand auger to install a product recovery well near the origin of the release (PR-1). The well is constructed of schedule 40, 2-inch polyvinyl chloride (PVC) and includes 10 feet of 0.01-inch machine slotted flush-threaded PVC well screen. A clean 10-20 grade silica sand pack was placed from the bottom of the boring to two feet above the top of the screen. Above the gravel pack, 3/8-inch natural bentonite chips were set to the ground surface. A completion diagram is included in Appendix A.

During the week of September 7, 2014, LTE utilized a CME-75 drilling rig equipped with hollow stem augers to install four groundwater monitoring wells in locations depicted on Figure 2. The groundwater

monitoring wells were constructed of 2-inch diameter schedule 40 PVC and included 10 feet of 0.01 inch machine slotted flush-threaded PVC well screen. A clean 10-20 grade silica sand gravel pack was placed from the bottom of the soil boring to two feet above the top of the screen. Two feet of three-eighths inch bentonite chips were set above the gravel pack, followed by a neat cement slurry to the surface, containing a minimum of 5 percent powdered bentonite. The wells were set in a flush-mount casing.

Following installation, the locations of the four monitoring wells and the product recovery well were obtained using a Trimble GeoXT global positioning system. The wells were surveyed for top-of casing elevations to an accuracy of plus or minus 0.01 feet so that groundwater flow direction and gradient could be determined. Total depth of each monitoring well was obtained using a Keck oil/water interface probe. The monitoring wells were developed utilizing a new PVC bailer. LTE purged fluid until at least 10 casing volumes had been removed and turbidity was reduced to the greatest possible extent or until the well bailed dry. All purged water was disposed of at a produced water tank on site.

RESULTS

The observed subsurface lithology consisted of a sandy silt to a silty sand that is 13 feet to 17 feet thick underlain by a saturated sand occurring at 13 feet to 17.5 feet. Varying sized cobbles were observed dispersed vertically throughout the subsurface. In MW01, a consolidated silty sand existed under the saturated interval at approximately 22 feet bgs. Although the saturated interval was stained and yielded field screening results suggesting soil and groundwater were impacted, the underlying consolidated layer did not exhibit petroleum hydrocarbon impact. As such, LTE did not advance the borehole further into the subsurface and set the well at 23 feet bgs. Soil boring logs are provided in Attachment A.

Soil Sampling Results

In accordance with the NMOCD *Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993), remediation action levels for soil at the Site were determined to be 10 mg/kg for benzene, 50 mg/kg for BTEX, and 100 mg/kg for TPH because groundwater is less than 50 feet bgs. Soil samples 8’ Below Union, 12’ Below Union, 18.5’ Below Union, 19’ Below Union, SB07@16-18’, SB08@16-17’, and SB11@4’ exceeded the NMOCD action levels for BTEX and TPH. Soil samples 8’ Below Union, 19’ Below Union, SB07@16-18’, and SB08@16-17’ also exceeded the action level for benzene. The soil analytical results are summarized in Table 1 and illustrated on Figure 3. Soil analytical reports are included as Attachment B.

Groundwater Sampling Results

Groundwater samples collected from BH-2, SB03, and SB06 exceeded the NMWQCC standards for BTEX, although BH-2 did not exceed the standard for ethylbenzene. The groundwater analytical results are summarized in Table 2 and illustrated on Figure 4. Groundwater analytical reports are included as Attachment B. Groundwater analytical results for MW02 through MW04 will be provided when final results are available.

Depth to groundwater data are summarized in Table 3. Groundwater flow direction was determined to be to the north-northwest as depicted on Figure 4. Free product was detected in PR-1 and MW01 at a thickness of 0.45 feet and 0.27 feet respectively. LTE installed sorbent product recovery socks in PR-1 and MW01 until additional work can be completed.

DISCUSSION

Analytical laboratory results, field screening results, and field observations of staining and odor indicated petroleum hydrocarbon impact to soil is localized around the release origin. Petroleum hydrocarbon impact to soil was encountered at the shallowest depth of 1.5 feet bgs near the release origin and at SB11 and extended to saturated sediments at 17.5 feet to 18 feet bgs. Depth to impacted soil increases away from the release origin and source material appears to be approximately 35 feet by 40 feet in extent as illustrated on Figure 5. Soil impacted below 15 feet bgs is restricted to the smear zone ranging from approximately 17 feet bgs to 22 feet bgs. As documented in MW01, soil below 22 feet bgs does not appear to be impacted and may be restricting vertical migration to a deeper interval.

Groundwater sampling results and soil staining observed in saturated sediments suggest free product exists near the release location and approximately 30 feet away from the release location. A dissolved phase groundwater plume extends in the downgradient direction to the location of SB06, but is delineated by clean groundwater sampled from SB05. Downgradient monitoring wells MW03 and MW04 do not appear to contain groundwater exceeding NMWQCC standards based on visual observations.

Distribution of the soil impact was likely controlled by the subsurface lithology of loose silty sand and cobbles with limited silty sand that promoted vertical migration. Once the release reached groundwater, horizontal migration resulted in distribution of free product around the source. Dissolved-phase impact migrated downgradient and extends approximately 100 feet to the northwest.

PROPOSED REMEDIATION PLAN

The depth of the impact and current surface use suggests an *in-situ* remedy is most practical and appropriate for the Site. Based on lithology and soil sampling results identified during initial soil sampling by XTO and subsequent sampling efforts accomplished by LTE, interim enhanced free product recovery followed by operation of an air sparging/soil vapor extraction (AS/SVE) mechanical system to treat the impact near the source is proposed. These methods will also promote aerobic biodegradation processes in areas extending beyond the area of direct influence of the proposed remediation wells and restrict potential downgradient migration of free product.

Delineation

LTE will collect groundwater samples from the newly installed monitoring wells immediately. Prior to sampling groundwater monitoring wells, depth to groundwater and total depth of each monitoring well will be measured with a Keck oil/water interface probe. The volume of water in each monitoring well will be calculated, and a minimum of three well casing volumes of water will be purged from each well using a new disposable PVC bailer. Once each monitoring well is purged, groundwater samples will be collected by filling laboratory-supplied bottles, stored on ice, and delivered to a laboratory for analysis of BTEX under strict COC procedures.

Currently, the free product plume is not fully defined. LTE proposes to advance three or more boreholes at the Site in the general locations depicted on Figure 6 and convert the boreholes to product recovery wells depending on the presence or absence of product in the completed wells. LTE may step out from the proposed locations and advance additional boreholes based on the results of field observations. Additional upgradient delineation is restricted by the presence of the steep hillside on the southeastern boundary of the well pad.

Product Recovery

XTO will recover and change the product recovery socks in PR-1 and MW01 weekly until a remediation plan is approved by the NMOCD and implementation begins. The weekly visits will include measuring product thickness and recording the volume of product recovered.

To minimize free product present in the source area, product recovery will be implemented in the recovery wells using a vacuum extraction method applied by a mobile vehicle. The expected volume of recovered fluids is relatively limited based on the saturated interval expected to be affected (18 feet to 23 feet bgs). A stinger will be lowered into the wells and extracted air and fluid will be accumulated in a liquid/air separation tank. The expected duration of each extraction event will be up to 2 hours. The fluid elevations will be measured before and after each event and depending on the observations following two initial extraction events spaced one week apart, one of the following will be implemented as needed:

- Additional events using the mobile vacuum extraction unit;
- Additional events using a bailer to manually remove product;
- Installation of product recovery socks in the wells; and/or
- Product skimming by installation of a mechanical automated skimmer pump and a storage tank.

XTO will document product thickness and track the total volume of product removed throughout the enhanced fluid recovery phase. Product recovery efforts will cease and transition to AS/SVE system described below when less than approximately 1-inch in measured thickness of product is achieved in the product recovery wells. At this measurable level, any additional movement of liquid petroleum impact is expected to be minimal and AS/SVE has typically proven to be effective in mitigating remaining impact.

Soil Vapor Extraction

Because sampling indicates soil is impacted at the source area in the vadose zone and saturated zone, SVE at the source area is recommended. SVE is an industry standard, cost-effective technology for *in-situ* remediation of petroleum hydrocarbons, especially in sandy soils. The observed impacted soil at the Site consists of silty sand with minor amounts of clayey sand. The impact has resulted from a release of natural gas condensate which is comprised mostly of light, readily volatilized petroleum hydrocarbon compounds. SVE will promote volatilization of the hydrocarbon impact distributed within the vadose zone and any remaining liquid free product that has accumulated on top of the groundwater. The SVE system will be designed to optimize extraction in areas where the impact has been observed in the unsaturated soil intervals. The SVE is estimated to provide an influence of approximately 30 feet from the well, and based on this estimate, three SVE wells will be installed as depicted on Figure 7 along with using location PR-1. The SVE wells will be constructed with 2-inch PVC casing and have 0.02-slot PVC screened across the impacted interval.

A blower capable of optimizing vapor recovery from several wells will be selected. An extraction blower capable of operating at approximately 80 cubic feet per minute (cfm) and an applied vacuum of 30 inches of water column will be installed. Operations and maintenance (O&M) of the system will be conducted weekly for the first 2 months, then be reduced based on system performance. O&M will consist of adjusting the SVE air flow distribution and field screening recovered hydrocarbon vapors.

Air Sparging

In addition to the SVE technology, LTE proposes to install six AS wells near the known source area to address impacted groundwater in this area and in the areas where residual free product may be present. The AS system will be designed to volatilize entrained product beneath the saturated interval and strip dissolved hydrocarbons dissolved in the groundwater. The influence from a single AS well is estimated to extend 10 feet from the sparging locations. With this estimate, four AS wells are planned for the source area and two downgradient wells are proposed (Figure 7). The initial row of AS wells will be designed to address the source area, and the second row will be designed to treat downgradient groundwater impact. Biological enhanced degradation and other natural attenuation processes will be relied on to address other areas of impacted groundwater. The well locations will be adjusted as needed to avoid subsurface utilities, surface structures, and to minimize the effect on traffic patterns.

The AS wells will be constructed with 1-inch PVC casing and have one foot of 0.010-slot PVC screen with the top of the screen placed approximately 5.5 feet below the groundwater elevation (immediately on top of a consolidated interval observed at approximately 23 feet bgs). During construction of the AS wells, a soil sample will be collected and if the consolidated interval is not observed, the top of the sparging screen will be set to an optimum depth of 8 feet below the groundwater elevation. A 10-20 silica sand gravel pack will be placed around the screen to 6-inches above the screened interval. Three feet of bentonite pellets will be installed above the screened interval and the well will be completed with neat cement grout to near the ground surface. Concrete will be placed at the surface well completion.

An AS blower capable of providing approximately 30 cfm at 15 pounds per square inch (psi) will be installed and the wells will be connected to the blower via surface or subsurface piping depending on traffic requirements.

Oxygenating the subsurface soil and groundwater through the AS/SVE system operation will promote biodegradation of impacted groundwater beyond the direct influence of the AS well and help address potential migration of free-phase and dissolved phase impact. The effectiveness of the AS and SVE will be evaluated through groundwater monitoring efforts.

Groundwater Monitoring

Groundwater monitoring for BTEX will be conducted quarterly during AS/SVE operation. Once BTEX concentrations have been reduced by the remediation system, XTO will turn off the systems and continue quarterly sampling with the goal of observing eight consecutive quarters with analytical results in compliance with NMWQCC standards.

Reporting

Groundwater monitoring results will be submitted in annual reports to the NMOCD. Reports will additionally include product recovery volumes; AS/SVE data including applied pressure, flow and vacuum with air emission estimates; groundwater elevations; and analytical results. Data will be presented on relevant figures including site location, potentiometric surface maps, product thickness and groundwater analytical results. The initial annual report will include soil borings and monitoring well completion logs and a cross section depicting the subsurface observations.

LTE appreciates the opportunity to provide this remediation work plan to XTO. If you have any questions or comments regarding this work plan, do not hesitate to contact me at (970) 385-1096 or via email at aager@ltenv.com.

Sincerely,
LT ENVIRONMENTAL, INC.

Ashley L. Ager
Senior Geologist/Office Manager

Christopher E. Shephard, P.E.
Chief Engineer

Attachments:

Figure 1 – Site Location Map
Figure 2 – Site Map
Figure 3 – Soil Analytical Results
Figure 4 – Groundwater Analytical Results
Figure 5 – Estimated Depth to Soil Impact
Figure 6 – Enhance Fluid Recovery Plan
Figure 7 – Remediation System Plan

Table 1 – Soil Analytical Results
Table 2 – Groundwater Analytical Results
Table 3 – Groundwater Elevations

Attachment A – Soil Boring Logs
Attachment B – Laboratory Analytical Reports

FIGURES

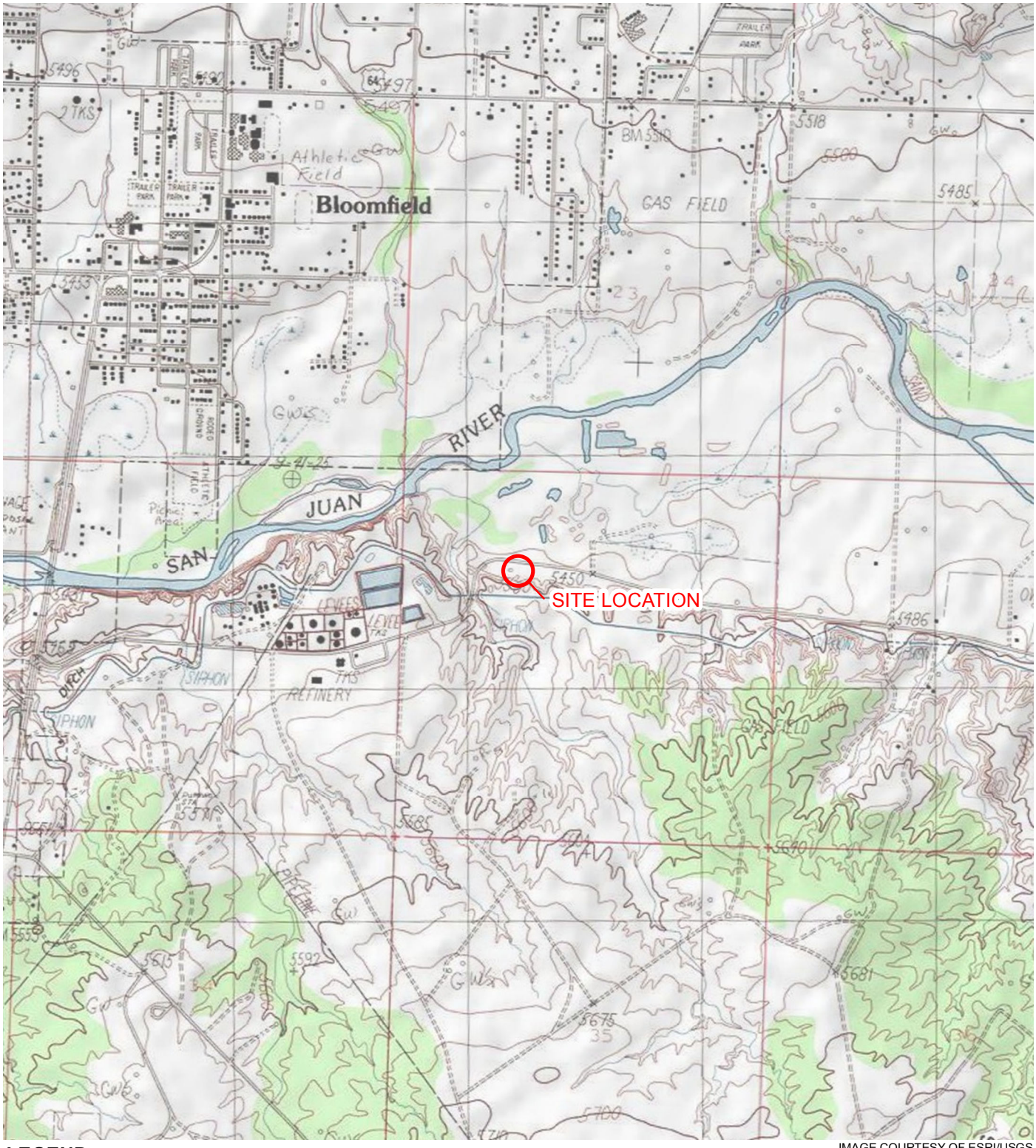

IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

FIGURE 1
SITE LOCATION MAP
SULLIVAN GC D #1E
SAN JUAN COUNTY, NEW MEXICO

XTO ENERGY, INC.

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IMAGE COURTESY OF ESRI

LEGEND

- RELEASE ORIGIN
- MONITORING WELL
- SOIL BORING (PERFORMED BY LTE)
- POTHOLE (PERFORMED BY XTO)
- HAND AUGER BORING (PERFORMED BY XTO)
- HAND AUGER BORING (PERFORMED BY LTE)
- SUBSURFACE UTILITIES

AST: ABOVEGROUND STORAGE TANK

0 40 80
Feet

N

FIGURE 2
SITE MAP
SULLIVAN GC D #1E
SAN JUAN COUNTY, NEW MEXICO

XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012915025_SULLIVAN_GC_D_#1E\012915025_FIG02_SITE.mxd

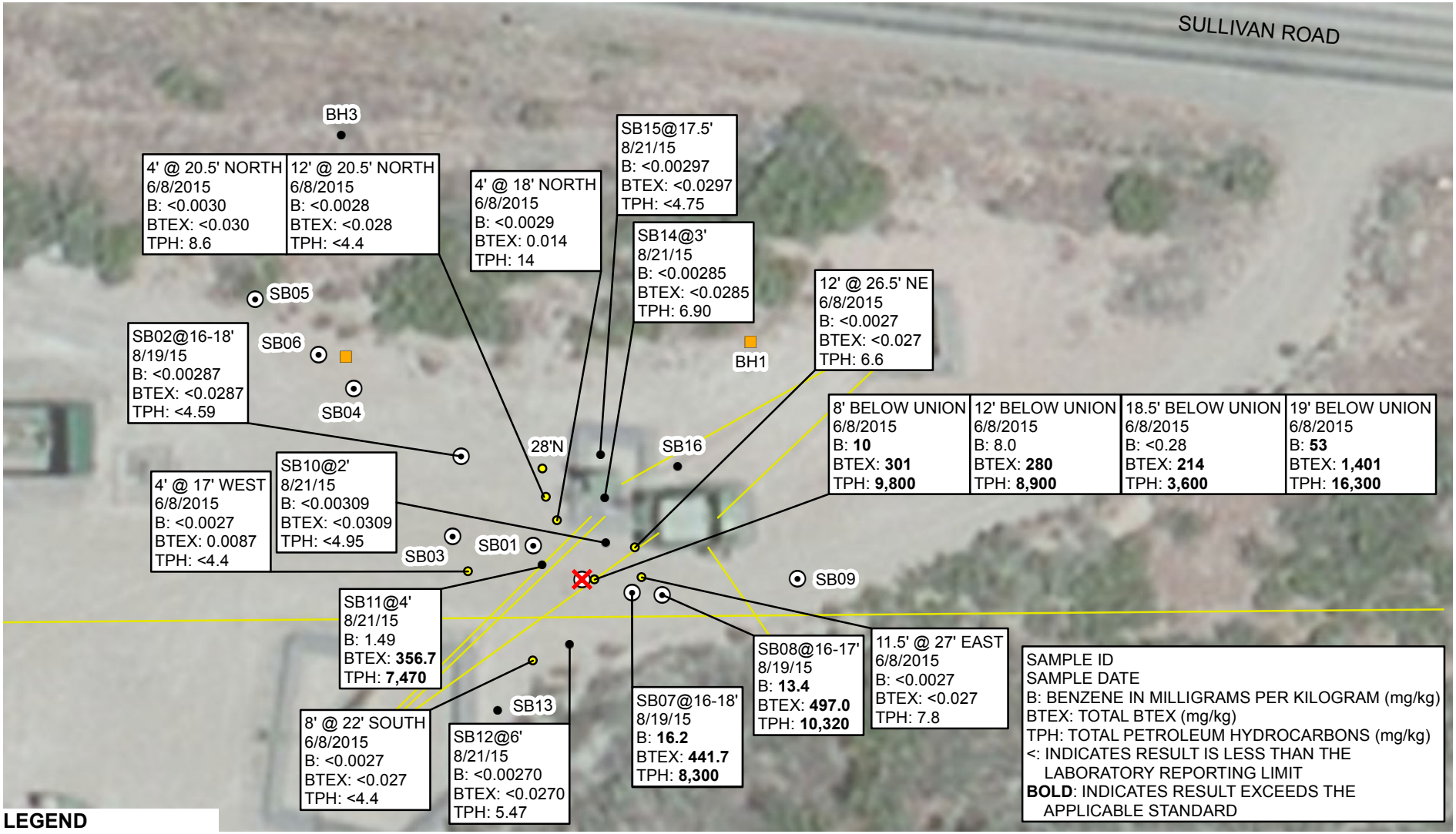


IMAGE COURTESY OF ESRI

LEGEND

- RELEASE ORIGIN
- SOIL BORING (PERFORMED BY LTE)
- POTHOLE (PERFORMED BY XTO)
- HAND AUGER BORING (PERFORMED BY XTO)
- HAND AUGER BORING (PERFORMED BY LTE)
- SUBSURFACE UTILITIES

0 40 80
Feet

N

FIGURE 3
SOIL ANALYTICAL RESULTS
SULLIVAN GC D #1E
SAN JUAN COUNTY, NEW MEXICO

XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012915025_SULLIVAN_GC_D_#1E\012915025_FIG03_SOIL_ANALY_USE.mxd

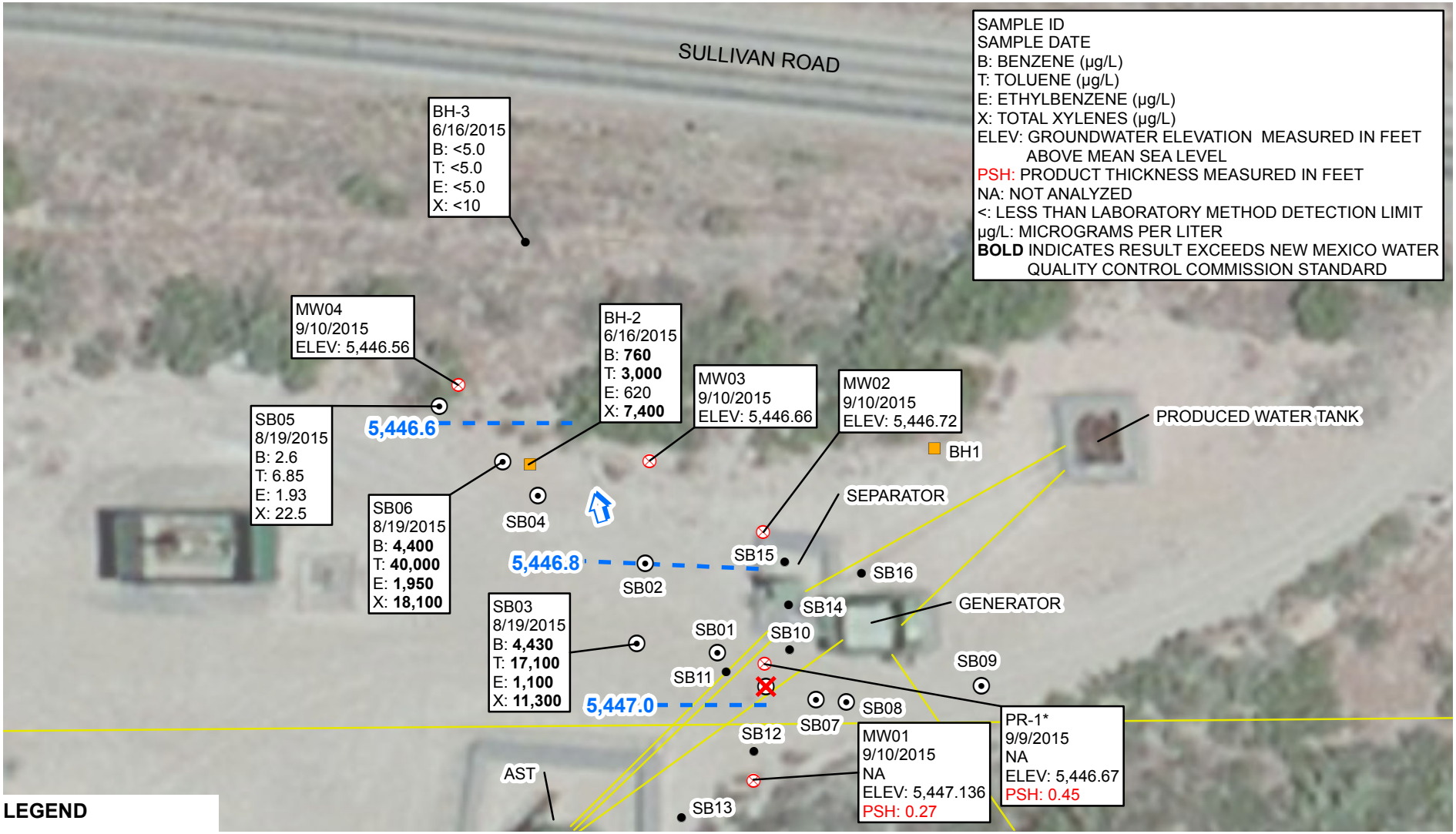


IMAGE COURTESY OF ESRI

LEGEND

- RELEASE ORIGIN
- MONITORING WELL
- SOIL BORING (PERFORMED BY LTE)
- POTHOLE (PERFORMED BY XTO)
- ESTIMATED GROUNDWATER FLOW DIRECTION
- HAND AUGER BORING (PERFORMED BY LTE)
- SUBSURFACE UTILITIES
- RELATIVE GROUNDWATER ELEVATION CONTOUR
  CONTOUR INTERVAL = 0.20 FEET

AST: ABOVEGROUND STORAGE TANK

*THE GROUNDWATER ELEVATION OBTAINED FROM PR-1 WAS NOT USED TO CONSTRUCT GROUNDWATER ELEVATION CONTOURS

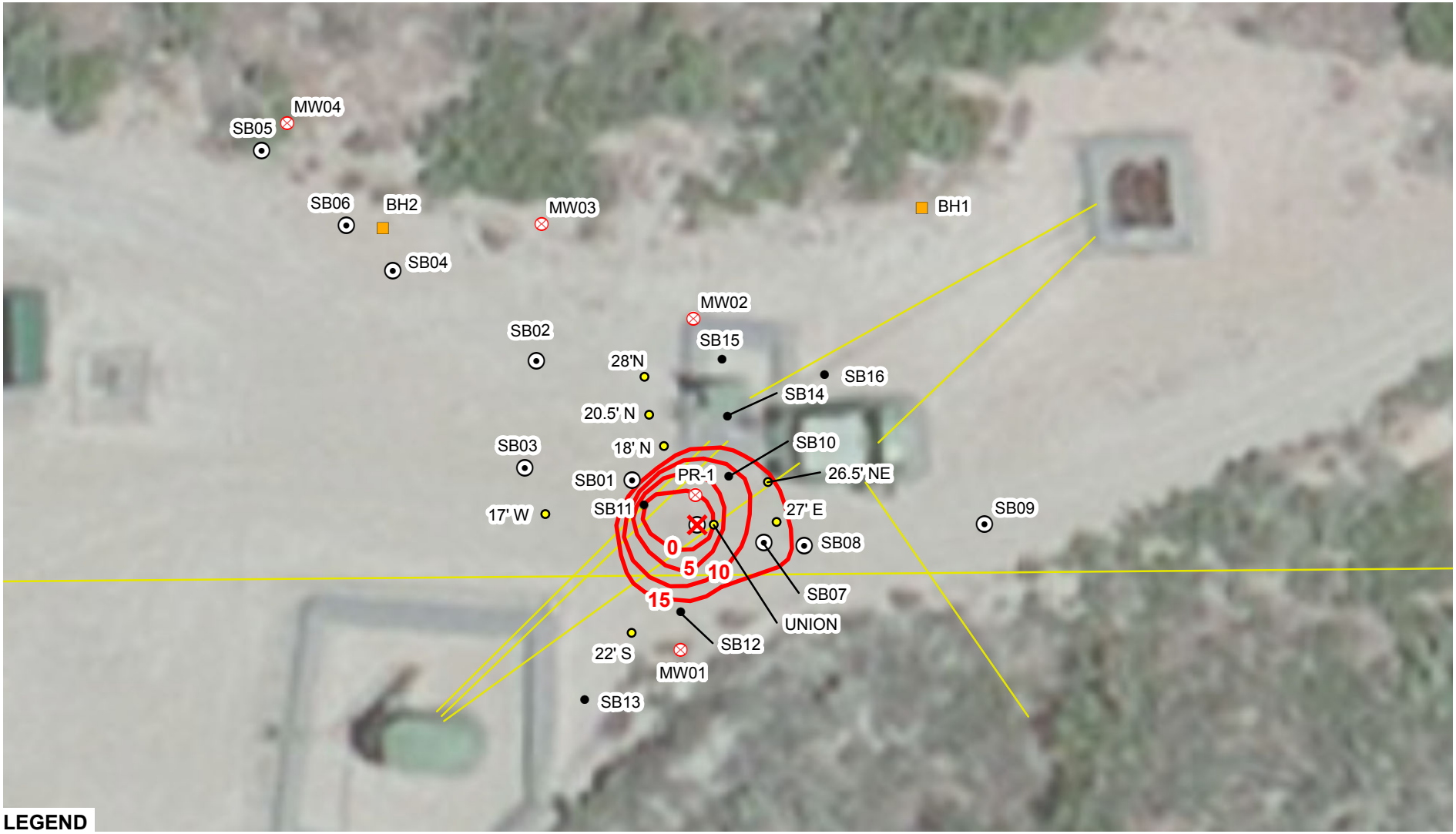
0 40 80
Feet

N

FIGURE 4
GROUNDWATER ELEVATION CONTOUR MAP
SULLIVAN GC D #1E
SAN JUAN COUNTY, NEW MEXICO

XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012915025_SULLIVAN_GC_D_#1E\012915025_FIG04_GWE.mxd



LEGEND

- RELEASE ORIGIN
- MONITORING WELL
- SOIL BORING (PERFORMED BY LTE)
- POTHOLE (PERFORMED BY XTO)
- HAND AUGER BORING (PERFORMED BY XTO)
- HAND AUGER BORING (PERFORMED BY LTE)
- SUBSURFACE UTILITIES
- ESTIMATED DEPTH OF IMPACT ELEVATION CONTOUR
  CONTOUR INTERVAL = 5 FEET

IMAGE COURTESY OF ESRI

0 30 60
Feet

N

FIGURE 5
ESTIMATED DEPTH TO SOIL IMPACT
SULLIVAN GC D #1E
SAN JUAN COUNTY, NEW MEXICO

XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012915025_SULLIVAN_GC_D_#1E\012915025_FIG05_SOIL_IMPACT.mxd

IMAGE COURTESY OF ESRI

LEGEND

- RELEASE ORIGIN
- MONITORING WELL
- PRODUCT RECOVERY LOCATION
- SUBSURFACE UTILITIES

AST: ABOVEGROUND STORAGE TANK

0 40 80
Feet

N

FIGURE 6
ENHANCED FLUID RECOVERY PLAN
SULLIVAN GC D #1E
SAN JUAN COUNTY, NEW MEXICO

XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012915025_SULLIVAN_GC_D_#1E\012915025_FIG06_SITE.mxd

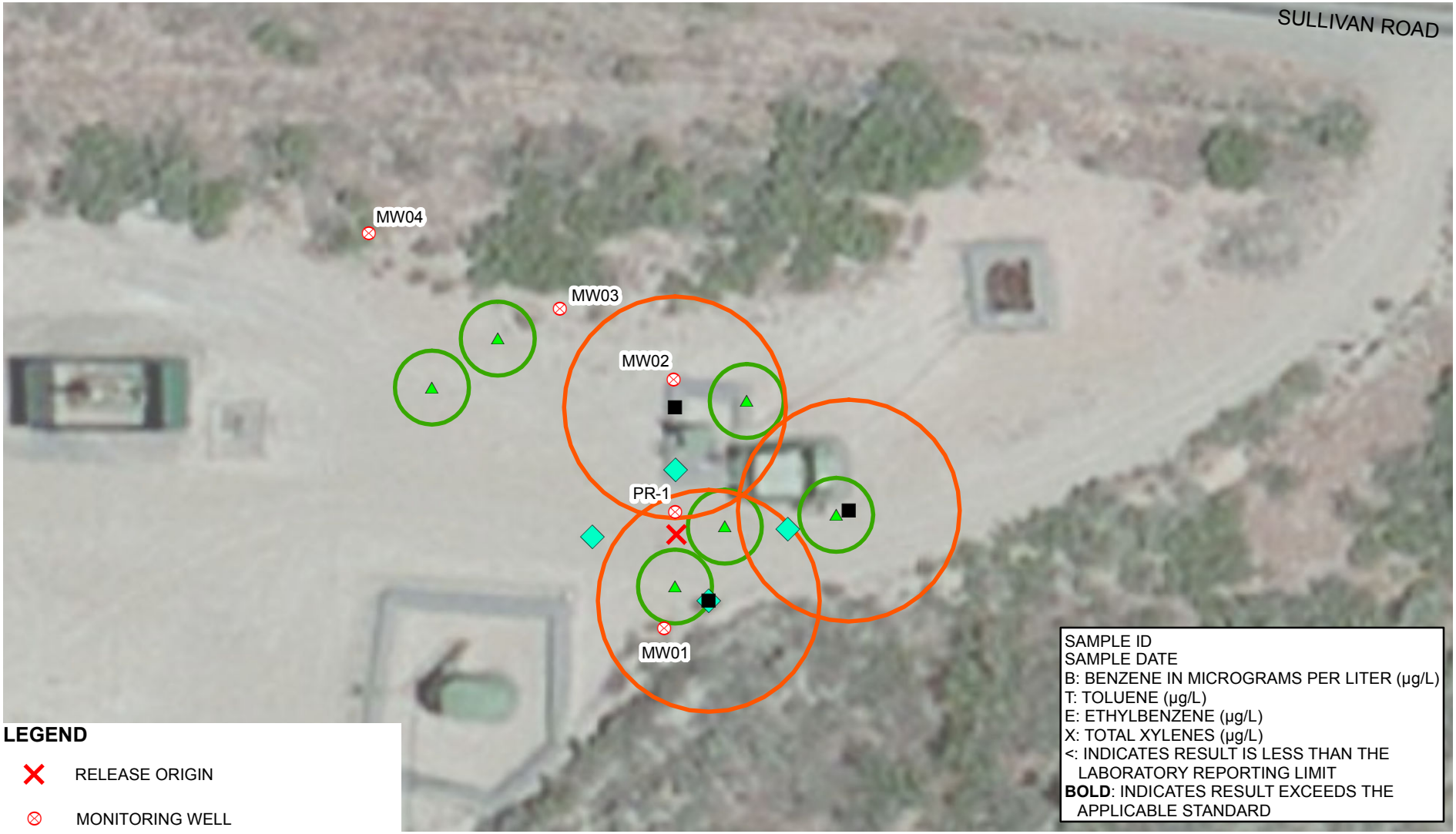


IMAGE COURTESY OF ESRI

LEGEND

- RELEASE ORIGIN
- MONITORING WELL

PROPOSED REMEDIATION SYSTEM

- PRODUCT RECOVERY LOCATION
- AIR SPARGING (AS) WELL
- SOIL VAPOR EXTRACTION (SVE) WELL
- ESTIMATED AS WELL INFLUENCE AREA
- ESTIMATED SVE WELL INFLUENCE AREA

0 40 80
Feet

N

FIGURE 7
REMEDIATION SYSTEM PLAN
SULLIVAN GC D #1E
SAN JUAN COUNTY, NEW MEXICO

XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012915025_SULLIVAN_GC_D_#1E\012915025_FIG7_REMEDIATION_PLAN.mxd

TABLES

TABLE 1

SOIL ANALYTICAL RESULTS
SULLIVAN GAS COM D #1E
XTO ENERGY, INC.

Sample ID	Sample Name	Sample Date	Field Headspace Reading (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	DRO (mg/kg)	GRO (mg/kg)	TPH (mg/kg)
FARRF-060815-1020	8' Below Union	6/8/2015	984	**10**	67	14	210	**301**	6,300	3,500	**9,800**
FARRF-060815-1038	12' Below Union	6/8/2015	1,581	8.0	58	14	200	**280**	5,400	3,500	**8,900**
FARRF-060815-1105	4' @ 17' West	6/8/2015	248	<0.0027	<0.027	<0.0027	0.0087	0.0087	<4.4	<0.55	<4.4
FARRF-060815-1210	4' @ 18' North	6/8/2015	364	<0.0029	<0.029	<0.0029	0.014	0.014	14	<0.58	14
FARRF-060815-0130	4' @ 20.5' North	6/8/2015	66.5	<0.0030	<0.030	<0.0030	<0.0089	<0.030	8.6	<0.59	8.6
FARRF-060815-0215	12' @ 20.5' North	6/8/2015	161	<0.0028	<0.028	<0.0028	<0.0083	<0.028	<4.4	<0.56	<4.4
FARRF-060815-0300	8' @ 22' South	6/8/2015	41	<0.0027	<0.027	<0.0027	<0.0082	<0.027	<4.4	<0.54	<4.4
FARRF-060815-0435	11.5' @ 27' East	6/8/2015	172	<0.0027	<0.027	<0.0027	<0.0080	<0.027	7.8	<0.53	7.8
FARRF-060815-0535	12' @ 26.5' NE	6/8/2015	130	<0.0027	<0.027	<0.0027	<0.0082	<0.027	6.6	<0.54	6.6
FARRF-060815-0930	18.5' Below Union	6/8/2015	1,278	<0.28	3	11	200	**214**	<4.5	3,600	**3,600**
FARRF-060815-0947	19' Below Union	6/8/2015	NM	**53**	420	68	860	**1,401**	3,300	13,000	**16,300**
FARMW-081915-0930	SB02@16-18'	8/19/15	82.1	<0.00287	<0.0287	<0.00287	<0.00861	<0.0287	<4.59	<0.574	<4.59
FARMW-081915-1500	SB07@16-18'	8/19/15	1,913	**16.2**	102	22.5	301	**441.7**	2,780	5,520	**8,300**
FARMW-081915-1540	SB08@16-17'	8/19/15	2,175	**13.4**	105	27.6	351	**497**	3,550	6,770	**10,320**
FARMW-082115-1035	SB10@2'	8/21/15	74.3	<0.00309	<0.0309	<0.00309	<0.00928	<0.0309	<4.95	<0.619	<4.95
FARMW-082115-1100	SB11@4'	8/21/15	2,754	1.49	53	24.2	278	**356.69**	2,720	4,750	**7,470**
FARMW-082115-1145	SB12@6'	8/21/15	91.2	<0.00270	<0.0270	<0.00270	0.0119	0.0119	5.47	<0.541	5.47
FARMW-082115-1425	SB14@3'	8/21/15	41.5	<0.00285	<0.0285	<0.00285	<0.00855	<0.0285	6.90	<0.570	6.90
FARMW-082115-1624	SB15@17.5'	8/21/15	209	<0.00297	<0.0297	<0.00297	0.0186	0.0186	<4.75	<0.593	<4.75
NMOCD Standard			**NE**	**10**	**NE**	**NE**	**NE**	**50**	**NE**	**NE**	**100**

Notes:
' - feet below ground surface
< indicates result is less than the stated laboratory method detection limit
Bold - indicates values exceeding NMOCD standards
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram
NE- not established
NM- not measured
NMOCD - New Mexico Oil Conservation Division
ppm - parts per million
TPH - total petroleum hydrocarbons (sum of DRO and GRO)

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
SULLIVAN GAS COM D #1E
XTO ENERGY, INC.

Sample ID	Date Sampled	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)
BH-2	6/16/2015	**760**	**3,000**	620	**7,400**
BH-3	6/16/2015	<5.0	<5.0	<5.0	<10
SB03	8/19/2015	**4,430**	**17,100**	**1,100**	**11,300**
SB05	8/19/2015	2.60	6.85	1.93	22.5
SB06	8/19/2015	**4,400**	**40,000**	**1,950**	**18,100**
NMWQCC Standard		**10**	**750**	**750**	**620**

Notes:
< indicates result is less than the stated laboratory method detection limit
NMWQCC - New Mexico Water Quality Control Commission
µg/l - micrograms per liter

TABLE 3

GROUNDWATER ELEVATIONS
SULLIVAN GAS COM D #1E
XTO ENERGY, INC.

Well ID	Date	Top of Casing Elevation (feet AMSL)	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
PR-1	9/9/2015	5466.00	19.24	19.69	0.45	5,446.67
MW01	9/10/2015	5468.74	21.55	21.82	0.27	5,447.14
MW02	9/10/2015	5465.57	NP	18.85	NP	5,446.72
MW03	9/10/2015	5466.11	NP	19.45	NP	5,446.66
MW04	9/10/2015	5465.50	NP	18.94	NP	5,446.56

Notes:

A product density factor of 0.8 is used to account for the presence of free product in PR-1 and MW01.
AMSL - Above Mean Sea Level
BTOC - Below Top of Casing
NP - No Product

ATTACHMENT A

SOIL BORING LOGS

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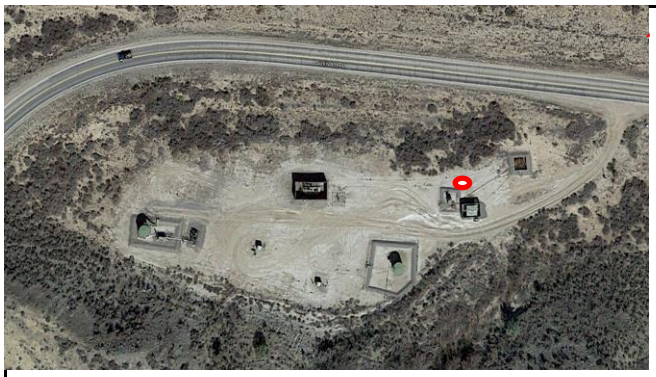
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-01		Project: Sullivan GC D#1E	
Date: 9/9/2015		Project Number: 012915025	
Logged By: David Stainback		Drilled By: Kyvek	
Elevation:	Detector: MiniRae 2000	Drilling Method: Hollow Stem Auger	Sampling Method: Split Spoon
Gravel Pack: 10/20 Silica Sand		Seal: Bentonite	Grout: NA
Casing Type: PVC		Diameter: 2" Length: 13'	Hole Diameter: 4.25" / Depth to Liquid: NA
Screen Type: PVC	Slot: 0.010	Diameter: 2" Length: 10'	Total Depth: 23' / Depth to Water: 21.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
	Dry	0.0	No		2				Cuttings not recorded until visual impact observed, attempt to sample at 16' bgs, but cobbles were encountered	
	Dry	0.0	No		4					
	Dry	0.0	No		6					
	Dry	0.0	No		8					
	Dry	0.0	No		10					
	Dry	0.0	No		12					
	Dry	0.0	No		14					
	Dry	0.0	No		16					
	Damp	1,815.0	Yes							
	Damp		Yes		18			SM	Grey 10 yr 5/1, staining, 60% medium grain, 40% fine grain sand, odor	
	Wet		Yes							
	Wet		Yes		20					
	Wet		Yes							
	Wet	1,620.0	Yes	MW-01 @23'	22			SM	Light grey to tan, 10 yr 8/2, silty sand, tight, dry, no odor, no stain	
	Dry		No							
	Dry	0.1			24					
					26					
					28					



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-02		Project: Sullivan GC D#1E	
Date: 9/9/2015		Project Number: 012915025	
Logged By: David Stainback		Drilled By: Kyvek	
Elevation:	Detector: MiniRae 2000	Drilling Method: Hollow Stem Auger	Sampling Method: Split Spoon
Gravel Pack: 10/20 Silica Sand		Seal: Bentonite	Grout: NA
Casing Type: PVC		Diameter: 2" Length: 13'	Hole Diameter: 4.25" / Depth to Liquid: NA
Screen Type: PVC	Slot: 0.010	Diameter: 2" Length: 10'	Total Depth: 23' / Depth to Water: 19'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
	Dry	0.0	No		2				Cuttings not recorded untilvisual impact observed at 16ft	
	Dry	0.0	No		4					
	Dry	0.0	No		6					
	Dry	0.0	No		8					
	Dry	0.0	No		10					
	Dry	0.0	No		12					
	Dry	0.0	No		14					
	Dry	0.0	No		16					
	Dry	0.0	No		18			SM	Grayish brown, 10 yr 5/6, silty fine-medium grain sand, dry, no stain/odor	
	Wet	1,434.0	Yes							
	Wet	1,434.0	Yes		20			SM	Very dark grey 10 yr 3/1, medium good red silty sand, wet, stain and odor and clay lense at 18-18.5 bgs (above water table)	
	Wet	1,139.0	Yes							
	Wet	1,139.0	Yes		22			SM	Very dark grey 10 yr 3/1, medium grain silty sand, wet, with stain and odor	
	Wet	1,139.0	Yes							
					24				**TD @ 23'**	
					26					
					28					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-03	Project: Sullivan GC D#1E
Date: 9/9/2015	Project Number: 012915025
Logged By: David Stainback	Drilled By: Kyvek
Elevation:	Detector: MiniRae 2000
Drilling Method: Hollow Stem Auger	Sampling Method: Split Spoon
Gravel Pack: 10/20 Silica Sand	Seal: Bentonite
Grout: NA	
Casing Type: PVC	Diameter: 2" Length: 13'
Hole Diameter: 4.25"	Depth to Liquid: NA
Screen Type: PVC Slot: 0.010	Diameter: 2" Length: 10'
Total Depth: 23'	Depth to Water: 19'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks
					0				
	Dry	0.0	No		2				Silty Sand- Dark brown 7.5YR 3/4, 85% silt, 15% fine grained sand, loose, non-plastic, non-cohesive.
	Dry	0.0	No		4				
	Dry	0.0	No		6				
	Dry	0.0	No		8				
	Dry	0.0	No		10				
	Dry	0.0	No		12				
	Dry	0.0	No		14				
	Dry	0.0	No		16				
	Dry	0.0	No		18			**ML**	Brown silt, with fine grained sand, 10 yr 4/4, dry, no stain or odor
	Moist	0.0	No						
	Wet	73.2	Yes		20			**ML-SM**	Brown silt, with fine grained sand, 10 yr 4/4, moist, no stair or odor, transition to medium grain silty sand, dark grey, wet with stains and odor
	Wet	96.4	No						
	Wet	12.3	No		22			**SM**	Dark grey silty sand, 2.5 yr 4/1, odor and stain, wet, stain and odor, transitions to light grey silty sand with no stain or odor.
	Wet	12.3	No						**TD @ 23'**
					24				
					26				
					28				

Well Completion

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-04		Project: Sullivan GC D#1E	
Date: 9/9/2015		Project Number: 012915025	
Logged By: David Stainback		Drilled By: Kyvek	
Elevation:	Detector: MiniRae 2000	Drilling Method: Hollow Stem Auger	Sampling Method: Split Spoon
Gravel Pack: 10/20 Silica Sand		Seal: Bentonite	Grout: NA
Casing Type: PVC		Diameter: 2" Length: 13'	Hole Diameter: 4.25" / Depth to Liquid: NA
Screen Type: PVC	Slot: 0.010	Diameter: 2" Length: 10'	Total Depth: 23' / Depth to Water: 17'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					
	Dry	0.0	No		2				Cuttings not recorded until visual impact observed, attempt to sample at 16' bgs, but cobbles were encountered	
	Dry	0.0	No		4					
	Dry	0.0	No		6					
	Dry	0.0	No		8					
	Dry	0.0	No		10					
	Dry	0.0	No		12					
	Dry	0.0	No		14					
	Dry	0.0	No		16					
	Moist	0.0	No							
	Dry	0.0	No		18			SM	Very silty sand, light brown 10 yr 5/3, moist, 60% fine grain sand, 40% S:H, no stain or odor	
	Wet	9.2	No							
	Wet	6.2	No		20			SM	Light brown silty sand 10 yr 5/3, wet, grading from fine to medium sand, no stain, slight odor	
	Wet		No							
	Wet		No		22			SM	Light brown silty sand 10 yr 5/2, wet, no stain/odor, medium grain sand	
	Wet		No							
					24				**TD @ 23'**	
					26					
					28					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: PR01		Project: Sullivan GC D#1E	
Date: 9/4/2015		Project Number: 012915025	
Logged By: Alex Crooks		Drilled By: LT Environmental	
Elevation: 5,470'	Detector: None	Drilling Method: Hand Auger	Sampling Method: No samples Taken
Gravel Pack: 10/20 Silica Sand		Seal: Bentonite	Grout: NA
Casing Type: PVC		Diameter: 2" Length: 10'	Hole Diameter: 2" / Depth to Liquid: NA
Screen Type: PVC	Slot: 0.01	Diameter: 2" Length: 10'	Total Depth: 20' / Depth to Water: ~17.0'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
	Dry		None		0				Silty Sand- Dark brown 7.5YR 3/4, 85% silt, 15% fine grained sand, loose, non-plastic, non-cohesive.	
					2					
	Dry		Yes		4				Gray 7.5YR 5/1 staining, slight odor	
	Moist		Yes		6				Very Dark Gray 10YR 3/1 staining, strong odor	
					8					
					10			**SM**		
					12					
	Moist		Yes		14				Gray 10YR 5/1 staining, odor	
					16					
	Wet				18					
					20				**TD @ 20'**	
					22					
					24					
					26					
					28					
					30					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB01		Project: Sullivan GC D#1E	
Date: 8/19/2015		Project Number: 012915025	
Logged By: Michael A. Wicker		Drilled By: Earth Works - Louis Trujillo	
Elevation: 5,470'	Detector: MiniRae 2000	Drilling Method: Direct-Push	Sampling Method: Continuous
Gravel Pack: NA		Seal: Bentonite	Grout: NA
Casing Type: NA		Diameter: NA / Length: NA	Hole Diameter: 3" / Depth to Liquid: NA
Screen Type: NA	Slot: NA	Diameter: NA / Length: NA	Total Depth: 20' / Depth to Water: ~18.0'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
					1				**Silty Sand** Dark brown 7.5YR 3/4, 85% silt, 15% fine grained sand, loose, very dry, non-plastic, non-cohesive, gray 7.5YR 6/1 to black 2.5/1 staining/ slight odor	
	Very Dry	82.7			2					
					3					
					4					
					5				Brown 7.5YR 5/4, no staining/odor	
	Very Dry	16.7			6					
					7					
					8			SM		
					9				Gray 7.5YR 5/1 staining, slight odor	
	Very Dry	100			10					
					11					
					12					
					13					
	Very Dry	57.3			14					
					15					

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Boring/Well #	SB01
Project:	Sullivan GC D#1E
Project #	012915025
Date	8/19/2015

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					15					
					16				*Soil sample unattainable due to insufficient soil recovery	
	Very Dry ▼	77.7			17					
					18			**SM**		
				SB01 @ 18-20' 0900	19				**Silty Sand** Gray 10YR 5/1 and black 10YR 2/1 staining, 70% medium grained sand, 20% fine grained sand, 10% fines, wet, non-plastic, cohesive, staining/odor	
	Wet	3,974			20					
					21				**TD @ 20'**	
					22					
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30					
					31					
					32					
					33					
					34					
					35					
					36					
					37					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB02		Project: Sullivan GC D#1E	
Date: 8/19/2015		Project Number: 012915025	
Logged By: Michael A. Wicker		Drilled By: Earth Works - Louis Trujillo	
Elevation: 5,470'	Detector: MiniRae 2000	Drilling Method: Direct-Push	Sampling Method: Continuous
Gravel Pack: NA		Seal: Bentonite	Grout: NA
Casing Type: NA		Diameter: NA / Length: NA	Hole Diameter: 3" / Depth to Liquid: NA
Screen Type: NA	Slot: NA	Diameter: NA / Length: NA	Total Depth: 24' / Depth to Water: ~18.0'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
	Very Dry	1.3			1–4			SM	**Silty Sand** Dark brown 7.5YR 3/4, 85% silt, 15% fine grained sand, loose, very dry, non-plastic, non-cohesive, gray 7.5YR 6/1 to black 2.5/1 staining/ slight odor	
	Very Dry	1.5			5–8			CH	**Fat Clay w/ Sand** Strong brown 7.5 4/6, soft, high plasticity, cohesive	
	Very Dry	0.9			9–11			SM	**Silty Sand** Brown 7.5YR 5/3, 80% silt, 20% fine grained sand, loose, very dry, non-plastic, non-cohesive, no staining/slight odor	
	Very Dry	1.2			12–15			SM		

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Boring/Well #	SB02
Project:	Sullivan GC D#1E
Project #	012915025
Date	8/19/2015

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					15					
					16					
				SB02 @ 16-18' 0930	17					
	Very Dry ▼	82.1			18			**SM**		
					19				**Silty Sand** Gray 10YR 5/1 and black 10YR 2/1 staining, 70% medium grained sand, 20% fine grained sand, 10% fines, wet, non-plastic, cohesive, staining/odor	
	Wet	2,122			20					
					21					
					22				**TD @ 20'**	
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30					
					31					
					32					
					33					
					34					
					35					
					36					
					37					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB03		Project: Sullivan GC D#1E	
Date: 8/19/2015		Project Number: 012915025	
Logged By: Michael A. Wicker		Drilled By: Earth Works - Louis Trujillo	
Elevation: 5,470'	Detector: MiniRae 2000	Drilling Method: Direct-Push	Sampling Method: Continuous
Gravel Pack: NA		Seal: Bentonite	Grout: NA
Casing Type: NA	Diameter: NA / Length: NA	Hole Diameter: 3"	Depth to Liquid: NA
Screen Type: NA / Slot: NA	Diameter: NA / Length: NA	Total Depth: 20'	Depth to Water: ~18.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
					1				**Silty Sand** White 7.5YR 8/1, 85% silt, 15% fine grained sand, medium dense, very dry, non-plastic, non-cohesive, no staining/ slight odor	
	Very Dry	31.2			2					
					3					
					4					
					5				Very dark gray 7.5YR 3/1, staining, no odor	
	Very Dry	12.7			6					
					7					
					8			SM		
					9				Brown 7.5YR 5/4, no staining/odor	
	Very Dry	13.7			10					
					11					
					12					
					13					
	Very Dry	11.7			14					
					15					

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Boring/Well #	SB03
Project:	Sullivan GC D#1E
Project #	012915025
Date	8/19/2015

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					15					
					16				*Soil sample unattainable due to insufficient soil recovery	
	Very Dry	14.1			17					
					18			**SM**		
				SB03 @ 18.5-20' 1030	19				**Silty Sand** Gray 10YR 5/1 and black 10YR 2/1 staining, 70% medium grained sand, 20% fine grained sand, 10% fines, wet, non-plastic, cohesive, staining/odor	
	Wet	3,587			20					
					21				**TD @ 20'**	
					22					
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30					
					31					
					32					
					33					
					34					
					35					
					36					
					37					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB04			Project: Sullivan GC D#1E
Date: 8/19/2015			Project Number: 012915025
Logged By: Michael A. Wicker			Drilled By: Earth Works - Louis Trujillo
Elevation: 5,470'	Detector: MiniRae 2000	Drilling Method: Direct-Push	Sampling Method: Continuous
Gravel Pack: NA		Seal: Bentonite	Grout: NA
Casing Type: NA		Diameter: NA / Length: NA	Hole Diameter: 3" / Depth to Liquid: NA
Screen Type: NA	Slot: NA	Diameter: NA / Length: NA	Total Depth: 24' / Depth to Water: ~18.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
					1				Cuttings observed until impact identified by visual screening	
					2					
					3					
					4					
					5					
					6					
					7					
					8					
					9					
					10					
					11					
					12					
					13					
					14					
					15					

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Boring/Well #	SB04
Project:	Sullivan GC D#1E
Project #	012915025
Date	8/19/2015

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					15					
	Very Dry	12.7			16					
					17				**Silty Sand** Brown 7.5YR 5/4, 85% silt, 15% fine grained sand, loose, non-plastic, non-cohesive, very dry, no staining/odor	
					18					
					19				**Silty Sand** Gray 10YR 5/1 and black 10YR 2/1 staining, 70% medium grained sand, 20% fine grained sand, 10% fines, wet, non-plastic, cohesive, staining/odor	
	Wet	2,247			20			**SM**		
					21					
	Wet	2,948			22					
					23					
					24					
					25				**TD @ 24'**	
					26					
					27					
					28					
					29					
					30					
					31					
					32					
					33					
					34					
					35					
					36					
					37					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB05			Project: Sullivan GC D#1E
Date: 8/19/2015			Project Number: 012915025
Logged By: Michael A. Wicker			Drilled By: Earth Works - Louis Trujillo
Elevation: 5,470'	Detector: MiniRae 2000	Drilling Method: Direct-Push	Sampling Method: Continuous
Gravel Pack: NA		Seal: Bentonite	Grout: NA
Casing Type: NA		Diameter: NA / Length: NA	Hole Diameter: 3" / Depth to Liquid: NA
Screen Type: NA	Slot: NA	Diameter: NA / Length: NA	Total Depth: 24' / Depth to Water: ~17.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
					1				Cuttings observed until impact identified by visual screening	
					2					
					3					
					4					
					5					
					6					
					7					
					8					
					9					
					10					
					12					
					13					
					14					
					15					

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Boring/Well #	SB06
Project:	Sullivan GC D#1E
Project #	012915025
Date	8/19/2015

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					15					
	Very Dry	32.7			16					
					17				**Silty Sand** Brown 7.5YR 4/3, 100% silt, loose, very dry, non-plastic, non-cohesive, no staining/odor	
					18				Gray 10YR 5/1 and black 10YR 2/1 staining, 70% medium grained sand, 20% fine grained sand, 10% fines, wet, non-plastic, cohesive, staining/odor	
	Wet	1,955			19					
					20			**SM**		
					21					
	Wet	2,934			22					
					23					
					24					
					25				**TD @ 24'**	
					26					
					27					
					28					
					29					
					30					
					31					
					32					
					33					
					34					
					35					
					36					
					37					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB06			Project: Sullivan GC D#1E
Date: 8/19/2015			Project Number: 012915025
Logged By: Michael A. Wicker			Drilled By: Earth Works - Louis Trujillo
Elevation: 5,470'	Detector: MiniRae 2000	Drilling Method: Direct-Push	Sampling Method: Continuous
Gravel Pack: NA		Seal: Bentonite	Grout: NA
Casing Type: NA		Diameter: NA / Length: NA	Hole Diameter: 3" / Depth to Liquid: NA
Screen Type: NA	Slot: NA	Diameter: NA / Length: NA	Total Depth: 24' / Depth to Water: ~17.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
					1				Cuttings observed until impact identified by visual screening	
					2					
					3					
					4					
					5					
					6					
					7					
					8					
					9					
					10					
					11					
					12					
					13					
					14					
					15					

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Boring/Well #	SB05
Project:	Sullivan GC D#1E
Project #	012915025
Date	8/19/2015

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					15					
					16					
	Very Dry	1.7			17				**Clayey Sand** Brown 7.5YR 4/4, 70% silt, 30% clay, soft, very dry, high plasticity, cohesive, no	
					18				50% fine grained sand, 50% clay, low plasticty	
	Wet	17.6			19					
					20			**SC**		
					21					
	Wet	32			22					
					23					
					24					
					25				**TD @ 24'**	
					26					
					27					
					28					
					29					
					30					
					31					
					32					
					33					
					34					
					35					
					36					
					37					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB07		Project: Sullivan GC D#1E	
Date: 8/19/2015		Project Number: 012915025	
Logged By: Michael A. Wicker		Drilled By: Earth Works - Louis Trujillo	
Elevation: 5,470'	Detector: MiniRae 2000	Drilling Method: Direct-Push	Sampling Method: Continuous
Gravel Pack: NA		Seal: Bentonite	Grout: NA
Casing Type: NA	Diameter: NA / Length: NA	Hole Diameter: 3"	Depth to Liquid: NA
Screen Type: NA / Slot: NA	Diameter: NA / Length: NA	Total Depth: 24'	Depth to Water: ~18.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
					1				**Silty Sand** Brown 7.5YR 4/3, 85% silt, 15% fine grained sand, loose, very dry, non-plastic, non-cohesive, no staining/odor	
	Very Dry	77.7			2					
					3					
					4					
					5					
	Very Dry	54.2			6					
					7					
					8			SM		
					9				Brown 7.5YR 4/3, loose, very dry, non-plastic, non-cohesive, no staining/odor	
	Very Dry	104			10					
					11					
					12					
					13				Dark gray 7.5YR 4/1 staining, no odor	
	Very Dry	56.0			14					
					15					

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Boring/Well #	SB07
Project:	Sullivan GC D#1E
Project #	012915025
Date	8/19/2015

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					15					
					16					
				SB07 @ 16-18' 1500	17				Gray 10YR 5/1 and black 10YR 2/1 staining	
	Very Dry	1,913			18					
					19				Gray 10YR 5/1 and black 10YR 2/1 staining, 70% medium grained sand, 20% fine grained sand, 10% fines, wet, non-plastic, cohesive, staining/odor	
	Wet	2,231			20			**SM**		
					21					
					22					
	Wet	2,589			23					
					24					
					25				**TD @ 24'**	
					26					
					27					
					28					
					29					
					30					
					31					
					32					
					33					
					34					
					35					
					36					
					37					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB08	Project: Sullivan GC D#1E
Date: 8/19/2015	Project Number: 012915025
Logged By: Michael A. Wicker	Drilled By: Earth Works - Louis Trujillo
Elevation: 5,470' / Detector: MiniRae 2000	Drilling Method: Direct-Push	Sampling Method: Continuous
Gravel Pack: NA	Seal: Bentonite	Grout: NA
Casing Type: NA	Diameter: NA / Length: NA	Hole Diameter: 3" / Depth to Liquid: NA
Screen Type: NA / Slot: NA	Diameter: NA / Length: NA	Total Depth: 24' / Depth to Water: ~18.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
					1				**Silt** Brown 7.5YR 4/3, 85% silt, 15% fine grained snad, loose, very dry, non-plastic, non-cohesive, no staining/odor	
	Very Dry	27.2			2					
					3					
					4					
					5				Very dark brown 7.5YR 2.5/3, no staining/odor	
	Very Dry	8.8			6					
					7					
					8			ML		
					9					
	Very Dry	19.7			10					
					11					
					12					
					13					
					14					
	Very Dry	22.8			15				Black 10 YR 2/1 staining, no odor	

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Boring/Well #	SB08
Project:	Sullivan GC D#1E
Project #	012915025
Date	8/19/2015

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					15					
				SB08 @ 16-17' 1540	16					
	Very Dry	2,175			17			**ML**	Gray 10YR 5/1 and black 10YR 2/1 staining, strong odor	
					18					
					19				**Silty Sand** Gray 10YR 5/1 and black 10YR 2/1 staining, 70% medium grained sand, 20% fine grained sand, 10% fines, wet, non-plastic, cohesive, staining/odor	
	Wet	1,937			20					
					21			**SM**		
					22					
	Wet	2,068			23					
					24					
					25				**TD @ 24'**	
					26					
					27					
					28					
					29					
					30					
					31					
					32					
					33					
					34					
					35					
					36					
					37					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB09		Project: Sullivan GC D#1E	
Date: 8/19/2015		Project Number: 012915025	
Logged By: Michael A. Wicker		Drilled By: Earth Works - Louis Trujillo	
Elevation: 5,470'	Detector: MiniRae 2000	Drilling Method: Direct-Push	Sampling Method: Continuous
Gravel Pack: NA		Seal: Bentonite	Grout: NA
Casing Type: NA		Diameter: NA / Length: NA	Hole Diameter: 3" / Depth to Liquid: NA
Screen Type: NA	Slot: NA	Diameter: NA / Length: NA	Total Depth: 24' / Depth to Water: ~18'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
					1				**Silty Sand w/ Gravel** White 7.5YR 8/1, 10% silt, 70% fine-coarse grained sand, 20% gravel, very dry, non-plastic, non-cohesive, no staining/odor	
	Very Dry	6.4			2					
					3					
					4					
					5				**Silty Sand** Light gray 7.5YR 7/1, 70% silt, 20% fine-coarse grained sand, 10% gravel, very dry, non-plastic, non-cohesive	
	Very Dry	11.7			6					
					7					
					8			**SM**		
					9					
	Very Dry	3.2			10					
					11					
					12				Light brown 7.5YR 6/3, 85% silt, 15% fine grained sand, loose, very dry, non-plastic, non-cohesive, no staining/odor	
					13					
	Very Dry	7.6			14					
					15					

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Boring/Well #	SB09
Project:	Sullivan GC D#1E
Project #	012915025
Date	8/19/2015

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					15					
					16					
		7.8			17				*Soil sample unattainable due to insufficient soil recovery	
	Very Dry ▼				18					
				SB09 @ 18-20' 1615	19				Gray 10YR 5/1 and black 10YR 2/1 staining, 70% medium grained sand, 20% fine grained sand, 10% fines, wet, non-plastic, cohesive, staining/odor	
	Wet	1,808			20			**SM**		
					21					
					22					
	Wet	2,102			23					
					24					
					25				**TD @ 24'**	
					26					
					27					
					28					
					29					
					30					
					31					
					32					
					33					
					34					
					35					
					36					
					37					

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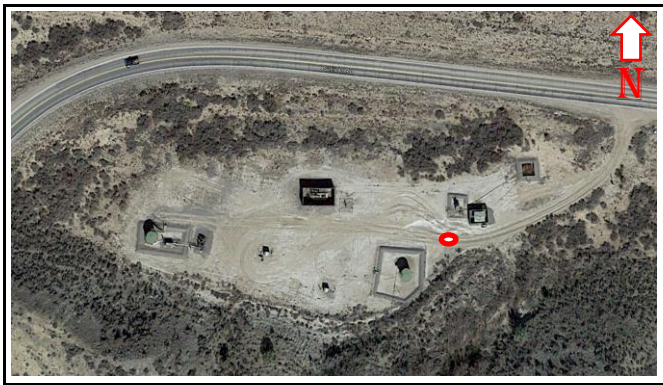
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB10		Project: Sullivan GC D#1E	
Date: 8/21/2015		Project Number: 012915025	
Logged By: Michael A. Wicker		Drilled By: Michael A. Wicker	
Elevation: 5,470'	Detector: MiniRae 2000	Drilling Method: Hand-Auger	Sampling Method: Continuous
Gravel Pack: NA		Seal: NA	Grout: NA
Casing Type: NA	Diameter: NA / Length: NA	Hole Diameter: 3.25"	Depth to Liquid: NA
Screen Type: NA / Slot: NA	Diameter: NA / Length: NA	Total Depth: 2.5'	Depth to Water: NA

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
	Dry	24.7			1			SM	**Silty Sand** Black 7.5YR 2.5/1 to light gray 7/1, dry, non-plastic, non-cohesive,staining/odor @ 5" to deph	
	Dry	74.3		SB10 @ 2' 1035	2					
					3				**Refusal @ 2.5' due to cobble**	
					4					
					5					
					6					
					7					
					8					
					9					
					10					
					11					
					12					
					13					
					14					
					15					



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB11		Project: Sullivan GC D#1E	
Date: 8/21/2015		Project Number: 012915025	
Logged By: Devin Hencmann		Drilled By: Devin Hencmann	
Elevation: 5,470'	Detector: MiniRae 2000	Drilling Method: Hand-Auger	Sampling Method: Continuous
Gravel Pack: NA		Seal: NA	Grout: NA
Casing Type: NA	Diameter: NA / Length: NA	Hole Diameter: 3.25"	Depth to Liquid: NA
Screen Type: NA / Slot: NA	Diameter: NA / Length: NA	Total Depth: 19.5'	Depth to Water: 17.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
	Dry	60.0	None		1			SM	**Silt** Dark brown 7.5YR 3/4, loose, dry, non-plastic, non-cohesive, no staining/odor	
	Dry	1,121	Black		2					
	Dry	2,553	Gray		3				**Silt** Black 7.5YR 2.5/1 to light gray 7/1, loose, dry, non-plastic, non-cohesive, staining/strong odor	
	Dry	2,754	Gray	SB11 @ 4' 1100	4					
	Dry	2,567	Gray		5					
	Dry	1,934	Black		6					
	Dry	1,922	Black		7					
	Dry	2,497	Gray		8					
	Dry	1,522	Gray		9				**9-10'** Brown 7.5 YR 5/4 to Gray 5/1 staining, strong odor	
	Dry	1,608	Gray		10					
	Dry	1,308			11					
	Dry	1,606	Mixed Gray		12					
	Dry	1,904			13					
	Dry	1,685	Gray Brown		14					
	Dry	1,284			15					

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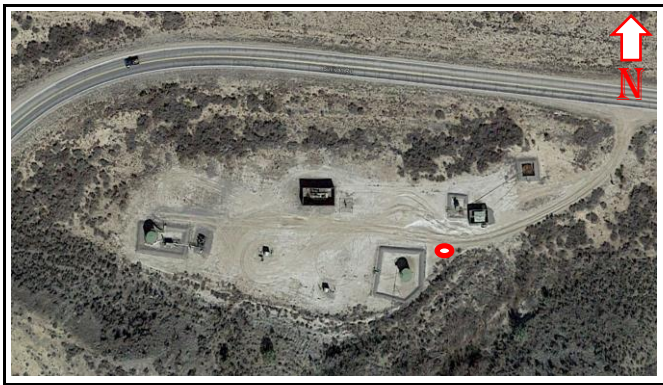
Boring/Well #	SB11
Project:	Sullivan GC D#1E
Project #	012915025
Date	8/21/2015

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					15					
	Dry	1,634	Black		16					
	Dry	1,258	Black		17					
		1,295	Black		18			**SM**	50% Sand. 50% Silt	
	Wet		Gray		19					
			Black		20					
					21				**TD @ 19.5**	
					22					
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30					
					31					
					32					
					33					
					34					
					35					
					36					
					37					



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB12		Project: Sullivan GC D#1E	
Date: 8/21/2015		Project Number: 012915025	
Logged By: Michael A. Wicker		Drilled By: Michael A. Wicker	
Elevation: 5,470'	Detector: MiniRae 2000	Drilling Method: Hand-Auger	Sampling Method: Continuous
Gravel Pack: NA		Seal: NA	Grout: NA
Casing Type: NA	Diameter: NA / Length: NA	Hole Diameter: 3.25"	Depth to Liquid: NA
Screen Type: NA / Slot: NA	Diameter: NA / Length: NA	Total Depth: 2.5'	Depth to Water: NA

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
	Dry	0.0			1				**Silty Sand** Light brown 7.5YR 6/4, dry, non-plastic, non-cohesive,staining/odor @ 1.5' to deph	
	Dry	12.3			2				Dark Gray 7.5YR 4/1 staining	
	Dry	5.4			3					
	Dry	67.8			4			**SM**		
	Dry	72.3			5					
	Dry	91.2		SB12 @ 6' 1145	6					
	Dry	35.4			7					
					8				**Refusal @ 7.5' due to cobble**	
					9					
					10					
					11					
					12					
					13					
					14					
					15					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB13	Project: Sullivan GC D#1E
Date: 8/21/2015	Project Number: 012915025
Logged By: Devin Hencmann	Drilled By: Devin Hencmann
Elevation: 5,470'	Detector: MiniRae 2000
Drilling Method: Hand-Auger	Sampling Method: Continuous
Gravel Pack: NA	Seal: NA
Grout: NA	
Casing Type: NA	Diameter: NA Length: NA
Hole Diameter: 3.25"	Depth to Liquid: NA
Screen Type: NA	Slot: NA
Diameter: NA Length: NA	Total Depth: 12.5'
Depth to Water: NA	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
	Dry	0.0			1			SM	**Silty Sand** Light brown 7.5YR 6/4, 30% silt, 40% fine grained sand, 30% medium grained sand, minor cobbles, dry, non-plastic, non-cohesive	
	Dry	0.0			2					
	Dry	0.0			3					
	Dry	0.0			4					
	Dry	0.0			5					
	Dry	0.0			6					
	Dry	0.0			7					
	Dry	0.0			8					
	Dry	0.0			9					
	Dry	0.0			10					
	Dry	0.0			11					
	Dry	0.0			12					
					13				**Refusal @ 12.5' due to cobble**	
					14					
					15					

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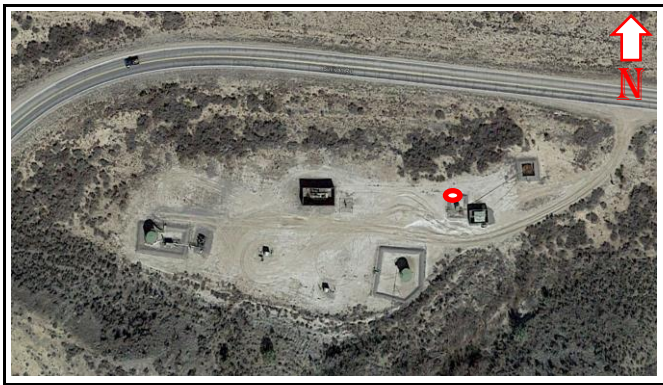
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB14	Project: Sullivan GC D#1E
Date: 8/21/2015	Project Number: 012915025
Logged By: Michael A. Wicker	Drilled By: Michael A. Wicker
Elevation: 5,470'	Detector: MiniRae 2000
Drilling Method: Hand-Auger	Sampling Method: Continuous
Gravel Pack: NA	Seal: NA
Grout: NA	
Casing Type: NA	Diameter: NA Length: NA
Hole Diameter: 3.25"	Depth to Liquid: NA
Screen Type: NA	Slot: NA
Diameter: NA Length: NA	Total Depth: 3'
Depth to Water: NA	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
	Dry	11.1			1			SM	**Silty Sand** White 7.5YR 8/1, dry, non-plastic, non-cohesive, Gray 7.5YR 5/1 staining/odor @ 10" to deph	
	Dry	37.4			2					
	Dry	41.50		SB14 @ 3' 1425	3					
					4				**Refusal @ 3' due to cobble**	
					5					
					6					
					7					
					8					
					9					
					10					
					11					
					12					
					13					
					14					
					15					



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB15	Project: Sullivan GC D#1E
Date: 8/21/2015	Project Number: 012915025
Logged By: Michael A. Wicker	Drilled By: Michael A. Wicker
Elevation: 5,470'	Detector: MiniRae 2000
Drilling Method: Hand-Auger	Sampling Method: Continuous
Gravel Pack: NA	Seal: NA
Grout: NA	
Casing Type: NA	Diameter: NA Length: NA
Hole Diameter: 3.25"	Depth to Liquid: NA
Screen Type: NA	Slot: NA
Diameter: NA Length: NA	Total Depth: 2.5'
Depth to Water: NA	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
	Dry	0.0			1				**Silty Sand** Gray 6/1, dry, loose, non-plastic, cohesive, no staining/odor	
	Dry	3.1			2					
	Dry	2.3			3					
	Dry	1.1			4					
	Dry	3.6			5					
	Dry	4.3			6					
	Dry	5.1			7					
	Dry	5.0			8			**SM**	Reddish brown 7.5YR 5/3	
	Dry	3.1			9					
	Dry	2.6			10					
	Dry	1.2			11					
	Dry	1.9			12					
	Dry	0.7			13					
	Dry	0.3			14					
	Dry	0.8			15					

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Boring/Well #	SB15
Project:	Sullivan GC D#1E
Project #	012915025
Date	8/21/2015

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					15					
	Dry	1.6			16					
				SB15 @ 17.5' 1624	17					
	▼	209			18					
					19				**TD @ 17.5'**	
					20					
					21					
					22					
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30					
					31					
					32					
					33					
					34					
					35					
					36					
					37					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB16		Project: Sullivan GC D#1E	
Date: 8/21/2015		Project Number: 012915025	
Logged By: Devin Hecmann		Drilled By: Devin Hencmann	
Elevation: 5,470'	Detector: MiniRae 2000	Drilling Method: Hand-Auger	Sampling Method: Continuous
Gravel Pack: NA		Seal: NA	Grout: NA
Casing Type: NA		Diameter: NA / Length: NA	Hole Diameter: 3.25" / Depth to Liquid: NA
Screen Type: NA	Slot: NA	Diameter: NA / Length: NA	Total Depth: 9' / Depth to Water: NA

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
					0					NA
	Dry	0.0			1				**Silty Sand** Light brown 6/4, dry, loose, non-plastic, non-cohesive, no staining/odor	
	Dry	0.0			2					
	Dry	0.0			3				**Silty Sand** Light brown 6/4, dry, soft,medium plasticity, cohesive, no staining/odor	
	Dry	0.0			4					
	Dry	0.0			5			**SM**	**Silty Sand** Light brown 6/4, dry, loose, non-plastic, non-cohesive, no staining/odor	
	Dry	0.0			6					
	Dry	0.0			7					
	Dry	0.0			8					
	Dry	0.0			9					
					10				**TD @ 9'**	
					11					
					12					
					13					
					14					
					15					

ATTACHMENT B

LABORATORY ANALYTICAL REPORTS

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

Tax I.D. 62-0814289

Est. 1970

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

Report Summary

Sunday June 21, 2015

Report Number: L770289
Samples Received: 06/10/15
Client Project:

Description:

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

Entire Report Reviewed By: Daphne R Richards

Daphne Richards , ESC Representative

Laboratory Certification Numbers

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

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

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 County Road 3100
Aztec, NM 87410

June 21,2015

ESC Sample # : L770289-01

Date Received : June 10, 2015
Description :

Site ID : SULLIVAN G.C.D #1E

Sample ID : FARRF-060815-1020

Project # :

Collected By : Rex Farnsworth
Collection Date : 06/08/15 10:20

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	91.9		%	2540 G-2011	06/12/15	1
Benzene	10.	1.1	mg/kg	8021	06/15/15	2000
Toluene	67.	11.	mg/kg	8021	06/15/15	2000
Ethylbenzene	14.	1.1	mg/kg	8021	06/15/15	2000
Total Xylene	210	3.3	mg/kg	8021	06/15/15	2000
TPH (GC/FID) Low Fraction	3500	220	mg/kg	8015	06/15/15	2000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.5		% Rec.	8015	06/15/15	1
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021	06/15/15	1
TPH (GC/FID) High Fraction	6300	440	mg/kg	3546/DRO	06/13/15	100
Surrogate recovery(%)						
o-Terphenyl	88.2		% Rec.	3546/DRO	06/13/15	100

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:

The reported analytical results relate only to the sample submitted
Reported: 06/21/15 19:40 Printed: 06/21/15 19:40

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

June 21,2015

ESC Sample # : L770289-02

Site ID : SULLIVAN G.C.D #1E

Project # :

Date Received : June 10, 2015
Description :

Sample ID : FARRF-060815-1038

Collected By : Rex Farnsworth
Collection Date : 06/08/15 10:38

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	90.8		%	2540 G-2011	06/12/15	1
Benzene	8.0	2.8	mg/kg	8021	06/15/15	5000
Toluene	58.	28.	mg/kg	8021	06/15/15	5000
Ethylbenzene	14.	2.8	mg/kg	8021	06/15/15	5000
Total Xylene	200	8.2	mg/kg	8021	06/15/15	5000
TPH (GC/FID) Low Fraction	3500	550	mg/kg	8015	06/15/15	5000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.4		% Rec.	8015	06/15/15	1
a,a,a-Trifluorotoluene(PID)	105.		% Rec.	8021	06/15/15	1
TPH (GC/FID) High Fraction	5400	440	mg/kg	3546/DRO	06/13/15	100
Surrogate recovery(%)						
o-Terphenyl	79.5		% Rec.	3546/DRO	06/13/15	100

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:

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Aztec, NM 87410

June 21,2015

ESC Sample # : L770289-03

Date Received : June 10, 2015
Description :

Site ID : SULLIVAN G.C.D #1E

Sample ID : FARRF-060815-1105

Project # :

Collected By : Rex Farnsworth
Collection Date : 06/08/15 11:05

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	91.2		%	2540 G-2011	06/12/15	1
Benzene	BDL	0.0027	mg/kg	8021	06/15/15	5
Toluene	BDL	0.027	mg/kg	8021	06/15/15	5
Ethylbenzene	BDL	0.0027	mg/kg	8021	06/15/15	5
Total Xylene	0.0087	0.0082	mg/kg	8021	06/15/15	5
TPH (GC/FID) Low Fraction	BDL	0.55	mg/kg	8015	06/15/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.9		% Rec.	8015	06/15/15	1
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021	06/15/15	1
TPH (GC/FID) High Fraction	BDL	4.4	mg/kg	3546/DRO	06/13/15	1
Surrogate recovery(%)						
o-Terphenyl	60.2		% Rec.	3546/DRO	06/13/15	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Aztec, NM 87410

June 21,2015

ESC Sample # : L770289-04

Site ID : SULLIVAN G.C.D #1E

Project # :

Date Received : June 10, 2015
Description :

Sample ID : FARRF-060815-1210

Collected By : Rex Farnsworth
Collection Date : 06/08/15 12:10

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	86.7		%	2540 G-2011	06/12/15	1
Benzene	BDL	0.0029	mg/kg	8021	06/15/15	5
Toluene	BDL	0.029	mg/kg	8021	06/15/15	5
Ethylbenzene	BDL	0.0029	mg/kg	8021	06/15/15	5
Total Xylene	0.014	0.0086	mg/kg	8021	06/15/15	5
TPH (GC/FID) Low Fraction	BDL	0.58	mg/kg	8015	06/15/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.7		% Rec.	8015	06/15/15	1
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021	06/15/15	1
TPH (GC/FID) High Fraction	14.	4.6	mg/kg	3546/DRO	06/13/15	1
Surrogate recovery(%)						
o-Terphenyl	71.3		% Rec.	3546/DRO	06/13/15	1

Results listed are dry weight basis.
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Aztec, NM 87410

June 21,2015

ESC Sample # : L770289-05

Date Received : June 10, 2015
Description :

Site ID : SULLIVAN G.C.D #1E

Sample ID : FARRF-060815-130

Project # :

Collected By : Rex Farnsworth
Collection Date : 06/08/15 13:30

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	84.1		%	2540 G-2011	06/12/15	1
Benzene	BDL	0.0030	mg/kg	8021	06/16/15	5
Toluene	BDL	0.030	mg/kg	8021	06/16/15	5
Ethylbenzene	BDL	0.0030	mg/kg	8021	06/16/15	5
Total Xylene	BDL	0.0089	mg/kg	8021	06/16/15	5
TPH (GC/FID) Low Fraction	BDL	0.59	mg/kg	8015	06/16/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.9		% Rec.	8015	06/16/15	1
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	06/16/15	1
TPH (GC/FID) High Fraction	8.6	4.8	mg/kg	3546/DRO	06/13/15	1
Surrogate recovery(%)						
o-Terphenyl	63.2		% Rec.	3546/DRO	06/13/15	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:

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Aztec, NM 87410

June 21,2015

ESC Sample # : L770289-06

Date Received : June 10, 2015
Description :

Site ID : SULLIVAN G.C.D #1E

Sample ID : FARRF-060815-215

Project # :

Collected By : Rex Farnsworth
Collection Date : 06/08/15 14:15

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	89.9		%	2540 G-2011	06/12/15	1
Benzene	BDL	0.0028	mg/kg	8021	06/16/15	5
Toluene	BDL	0.028	mg/kg	8021	06/16/15	5
Ethylbenzene	BDL	0.0028	mg/kg	8021	06/16/15	5
Total Xylene	BDL	0.0083	mg/kg	8021	06/16/15	5
TPH (GC/FID) Low Fraction	BDL	0.56	mg/kg	8015	06/16/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.6		% Rec.	8015	06/16/15	1
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	06/16/15	1
TPH (GC/FID) High Fraction	BDL	4.4	mg/kg	3546/DRO	06/13/15	1
Surrogate recovery(%)						
o-Terphenyl	78.5		% Rec.	3546/DRO	06/13/15	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:

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XTO Energy - San Juan Division
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Aztec, NM 87410

June 21,2015

ESC Sample # : L770289-07

Site ID : SULLIVAN G.C.D #1E

Project # :

Date Received : June 10, 2015
Description :

Sample ID : FARRF-060815-300

Collected By : Rex Farnsworth
Collection Date : 06/08/15 15:00

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	91.7		%	2540 G-2011	06/12/15	1
Benzene	BDL	0.0027	mg/kg	8021	06/16/15	5
Toluene	BDL	0.027	mg/kg	8021	06/16/15	5
Ethylbenzene	BDL	0.0027	mg/kg	8021	06/16/15	5
Total Xylene	BDL	0.0082	mg/kg	8021	06/16/15	5
TPH (GC/FID) Low Fraction	BDL	0.54	mg/kg	8015	06/16/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.7		% Rec.	8015	06/16/15	1
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	06/16/15	1
TPH (GC/FID) High Fraction	BDL	4.4	mg/kg	3546/DRO	06/13/15	1
Surrogate recovery(%)						
o-Terphenyl	79.7		% Rec.	3546/DRO	06/13/15	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:

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Reported: 06/21/15 19:40 Printed: 06/21/15 19:40

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REPORT OF ANALYSIS

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

June 21,2015

ESC Sample # : L770289-08

Date Received : June 10, 2015
Description :

Site ID : SULLIVAN G.C.D #1E

Sample ID : FARRF-060815-435

Project # :

Collected By : Rex Farnsworth
Collection Date : 06/08/15 16:35

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	93.7		%	2540 G-2011	06/12/15	1
Benzene	BDL	0.0027	mg/kg	8021	06/16/15	5
Toluene	BDL	0.027	mg/kg	8021	06/16/15	5
Ethylbenzene	BDL	0.0027	mg/kg	8021	06/16/15	5
Total Xylene	BDL	0.0080	mg/kg	8021	06/16/15	5
TPH (GC/FID) Low Fraction	BDL	0.53	mg/kg	8015	06/16/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.7		% Rec.	8015	06/16/15	1
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	06/16/15	1
TPH (GC/FID) High Fraction	7.8	4.3	mg/kg	3546/DRO	06/13/15	1
Surrogate recovery(%)						
o-Terphenyl	94.8		% Rec.	3546/DRO	06/13/15	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:

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Reported: 06/21/15 19:40 Printed: 06/21/15 19:40

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REPORT OF ANALYSIS

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

June 21,2015

ESC Sample # : L770289-09

Date Received : June 10, 2015
Description :

Site ID : SULLIVAN G.C.D #1E

Sample ID : FARRF-060815-535

Project # :

Collected By : Rex Farnsworth
Collection Date : 06/08/15 17:35

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	91.6		%	2540 G-2011	06/12/15	1
Benzene	BDL	0.0027	mg/kg	8021	06/16/15	5
Toluene	BDL	0.027	mg/kg	8021	06/16/15	5
Ethylbenzene	BDL	0.0027	mg/kg	8021	06/16/15	5
Total Xylene	BDL	0.0082	mg/kg	8021	06/16/15	5
TPH (GC/FID) Low Fraction	BDL	0.54	mg/kg	8015	06/16/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.7		% Rec.	8015	06/16/15	1
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	06/16/15	1
TPH (GC/FID) High Fraction	6.6	4.4	mg/kg	3546/DRO	06/13/15	1
Surrogate recovery(%)						
o-Terphenyl	97.3		% Rec.	3546/DRO	06/13/15	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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James McDaniel
XTO Energy - San Juan Division
382 County Road 3100
Aztec, NM 87410

June 21,2015

ESC Sample # : L770289-10

Date Received : June 10, 2015
Description :

Site ID : SULLIVAN G.C.D #1E

Sample ID : FARRF-060815-930

Project # :

Collected By : Rex Farnsworth
Collection Date : 06/08/15 09:30

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	88.4		%	2540 G-2011	06/12/15	1
Benzene	BDL	0.28	mg/kg	8021	06/16/15	500
Toluene	3.0	2.8	mg/kg	8021	06/16/15	500
Ethylbenzene	11.	0.28	mg/kg	8021	06/16/15	500
Total Xylene	200	0.85	mg/kg	8021	06/16/15	500
TPH (GC/FID) Low Fraction	3600	56.	mg/kg	8015	06/16/15	500
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.7		% Rec.	8015	06/16/15	1
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	06/16/15	1
TPH (GC/FID) High Fraction	BDL	4.5	mg/kg	3546/DRO	06/13/15	1
Surrogate recovery(%)						
o-Terphenyl	75.1		% Rec.	3546/DRO	06/13/15	1

Results listed are dry weight basis.
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Aztec, NM 87410

June 21,2015

ESC Sample # : L770289-11

Site ID : SULLIVAN G.C.D #1E

Project # :

Date Received : June 10, 2015
Description :

Sample ID : FARRF-060815-947

Collected By : Rex Farnsworth
Collection Date : 06/09/15 09:47

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	86.7		%	2540 G-2011	06/12/15	1
Benzene	53.	2.9	mg/kg	8021	06/19/15	5000
Toluene	420	29.	mg/kg	8021	06/19/15	5000
Ethylbenzene	68.	2.9	mg/kg	8021	06/19/15	5000
Total Xylene	860	8.6	mg/kg	8021	06/19/15	5000
TPH (GC/FID) Low Fraction	13000	580	mg/kg	8015	06/19/15	5000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.2		% Rec.	8015	06/19/15	1
a,a,a-Trifluorotoluene(PID)	92.4		% Rec.	8021	06/19/15	1
TPH (GC/FID) High Fraction	3300	92.	mg/kg	3546/DRO	06/11/15	20
Surrogate recovery(%)						
o-Terphenyl	78.4		% Rec.	3546/DRO	06/11/15	20

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L770289-01	WG794936	SAMP	o-Terphenyl	R3043222	J7
L770289-02	WG794936	SAMP	o-Terphenyl	R3043222	J7
L770289-11	WG794934	SAMP	o-Terphenyl	R3042967	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

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James McDaniel
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Aztec, NM 87410

Quality Assurance Report
Level II

L770289

June 21, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Total Solids	< .1	%			WG794915	06/12/15 07:02
Total Solids	< .1	%			WG794917	06/12/15 07:15
TPH (GC/FID) High Fraction	< 4	mg/kg			WG794934	06/11/15 18:18
o-Terphenyl		% Rec.	100.0	50-150	WG794934	06/11/15 18:18
TPH (GC/FID) High Fraction	< 4	mg/kg			WG794936	06/12/15 14:57
o-Terphenyl		% Rec.	100.0	50-150	WG794936	06/12/15 14:57
Benzene	< .0005	mg/kg			WG795391	06/14/15 12:56
Ethylbenzene	< .0005	mg/kg			WG795391	06/14/15 12:56
Toluene	< .005	mg/kg			WG795391	06/14/15 12:56
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG795391	06/14/15 12:56
Total Xylene	< .0015	mg/kg			WG795391	06/14/15 12:56
a,a,a-Trifluorotoluene(FID)		% Rec.	96.30	59-128	WG795391	06/14/15 12:56
a,a,a-Trifluorotoluene(PID)		% Rec.	104.0	54-144	WG795391	06/14/15 12:56
Benzene	< .0005	mg/kg			WG795956	06/16/15 11:49
Ethylbenzene	< .0005	mg/kg			WG795956	06/16/15 11:49
Toluene	< .005	mg/kg			WG795956	06/16/15 11:49
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG795956	06/16/15 11:49
Total Xylene	< .0015	mg/kg			WG795956	06/16/15 11:49
a,a,a-Trifluorotoluene(FID)		% Rec.	91.40	59-128	WG795956	06/16/15 11:49
a,a,a-Trifluorotoluene(PID)		% Rec.	102.0	54-144	WG795956	06/16/15 11:49
Benzene	< .0005	mg/kg			WG796950	06/19/15 17:31
Ethylbenzene	< .0005	mg/kg			WG796950	06/19/15 17:31
Toluene	< .005	mg/kg			WG796950	06/19/15 17:31
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG796950	06/19/15 17:31
Total Xylene	< .0015	mg/kg			WG796950	06/19/15 17:31
a,a,a-Trifluorotoluene(FID)		% Rec.	98.80	59-128	WG796950	06/19/15 17:31
a,a,a-Trifluorotoluene(PID)		% Rec.	92.30	54-144	WG796950	06/19/15 17:31

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Total Solids	%	82.0	82.1	0.0334	5	L770280-02	WG794915
Total Solids	%	78.5	78.3	0.254	5	L770294-01	WG794917

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Total Solids	%	50	50.0	100.	85-115	WG794915
Total Solids	%	50	50.0	100.	85-115	WG794917
TPH (GC/FID) High Fraction	mg/kg	60	52.1	86.8	50-150	WG794934
o-Terphenyl				99.20	50-150	WG794934

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382 County Road 3100

Aztec, NM 87410

Quality Assurance Report
Level II

L770289

June 21, 2015

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
TPH (GC/FID) High Fraction	mg/kg	60	50.9	84.8	50-150	WG794936
o-Terphenyl				99.30	50-150	WG794936
Benzene	mg/kg	.05	0.0452	90.5	70-130	WG795391
Ethylbenzene	mg/kg	.05	0.0460	92.0	70-130	WG795391
Toluene	mg/kg	.05	0.0448	89.6	70-130	WG795391
Total Xylene	mg/kg	.15	0.139	92.4	70-130	WG795391
a,a,a-Trifluorotoluene(FID)				95.70	59-128	WG795391
a,a,a-Trifluorotoluene(PID)				102.0	54-144	WG795391
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.97	109.	63.5-137	WG795391
a,a,a-Trifluorotoluene(FID)				105.0	59-128	WG795391
a,a,a-Trifluorotoluene(PID)				110.0	54-144	WG795391
Benzene	mg/kg	.05	0.0407	81.4	70-130	WG795956
Ethylbenzene	mg/kg	.05	0.0456	91.3	70-130	WG795956
Toluene	mg/kg	.05	0.0435	87.1	70-130	WG795956
Total Xylene	mg/kg	.15	0.135	90.3	70-130	WG795956
a,a,a-Trifluorotoluene(FID)				90.90	59-128	WG795956
a,a,a-Trifluorotoluene(PID)				101.0	54-144	WG795956
TPH (GC/FID) Low Fraction	mg/kg	5.5	4.89	88.9	63.5-137	WG795956
a,a,a-Trifluorotoluene(FID)				98.30	59-128	WG795956
a,a,a-Trifluorotoluene(PID)				112.0	54-144	WG795956
Benzene	mg/kg	.05	0.0425	84.9	70-130	WG796950
Ethylbenzene	mg/kg	.05	0.0432	86.3	70-130	WG796950
Toluene	mg/kg	.05	0.0431	86.2	70-130	WG796950
Total Xylene	mg/kg	.15	0.129	86.2	70-130	WG796950
a,a,a-Trifluorotoluene(PID)				102.0	54-144	WG796950
TPH (GC/FID) Low Fraction	mg/kg	5.5	3.99	72.6	63.5-137	WG796950
a,a,a-Trifluorotoluene(FID)				99.80	59-128	WG796950

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
TPH (GC/FID) High Fraction	mg/kg	52.3	52.1	87.0	50-150	0.370	20	WG794934
o-Terphenyl				98.00	50-150			WG794934
TPH (GC/FID) High Fraction	mg/kg	50.0	50.9	83.0	50-150	1.71	20	WG794936
o-Terphenyl				93.80	50-150			WG794936
Benzene	mg/kg	0.0445	0.0452	89.0	70-130	1.74	20	WG795391
Ethylbenzene	mg/kg	0.0452	0.0460	90.0	70-130	1.64	20	WG795391
Toluene	mg/kg	0.0438	0.0448	88.0	70-130	2.28	20	WG795391
Total Xylene	mg/kg	0.136	0.139	91.0	70-130	1.93	20	WG795391
a,a,a-Trifluorotoluene(FID)				96.80	59-128			WG795391
a,a,a-Trifluorotoluene(PID)				103.0	54-144			WG795391
TPH (GC/FID) Low Fraction	mg/kg	6.39	5.97	116.	63.5-137	6.84	20	WG795391
a,a,a-Trifluorotoluene(FID)				104.0	59-128			WG795391
a,a,a-Trifluorotoluene(PID)				110.0	54-144			WG795391
Benzene	mg/kg	0.0403	0.0407	80.0	70-130	1.05	20	WG795956
Ethylbenzene	mg/kg	0.0454	0.0456	91.0	70-130	0.490	20	WG795956
Toluene	mg/kg	0.0427	0.0435	85.0	70-130	1.82	20	WG795956

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Level II

L770289

June 21, 2015

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
Total Xylene	mg/kg	0.135	0.135	90.0	70-130	0.260	20	WG795956
a,a,a-Trifluorotoluene(FID)				91.00	59-128			WG795956
a,a,a-Trifluorotoluene(PID)				102.0	54-144			WG795956
TPH (GC/FID) Low Fraction	mg/kg	4.86	4.89	88.0	63.5-137	0.670	20	WG795956
a,a,a-Trifluorotoluene(FID)				98.10	59-128			WG795956
a,a,a-Trifluorotoluene(PID)				112.0	54-144			WG795956
Benzene	mg/kg	0.0456	0.0425	91.0	70-130	7.03	20	WG796950
Ethylbenzene	mg/kg	0.0465	0.0432	93.0	70-130	7.52	20	WG796950
Toluene	mg/kg	0.0461	0.0431	92.0	70-130	6.63	20	WG796950
Total Xylene	mg/kg	0.138	0.129	92.0	70-130	6.60	20	WG796950
a,a,a-Trifluorotoluene(PID)				101.0	54-144			WG796950
TPH (GC/FID) Low Fraction	mg/kg	4.15	3.99	76.0	63.5-137	3.95	20	WG796950
a,a,a-Trifluorotoluene(FID)				101.0	59-128			WG796950

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzene	mg/kg	0.171	0.0	.05	68.0	49.7-127	L769595-01	WG795391
Ethylbenzene	mg/kg	0.182	0.0	.05	73.0	40.8-141	L769595-01	WG795391
Toluene	mg/kg	0.172	0.0	.05	69.0	49.8-132	L769595-01	WG795391
Total Xylene	mg/kg	0.545	0.00138	.15	72.0	41.2-140	L769595-01	WG795391
a,a,a-Trifluorotoluene(FID)					95.30	59-128		WG795391
a,a,a-Trifluorotoluene(PID)					102.0	54-144		WG795391
TPH (GC/FID) Low Fraction	mg/kg	19.9	0.0557	5.5	72.0	28.5-138	L769595-01	WG795391
a,a,a-Trifluorotoluene(FID)					101.0	59-128		WG795391
a,a,a-Trifluorotoluene(PID)					106.0	54-144		WG795391
Benzene	mg/kg	0.175	0.000413	.05	70.0	49.7-127	L770289-05	WG795956
Ethylbenzene	mg/kg	0.179	0.000390	.05	71.0	40.8-141	L770289-05	WG795956
Toluene	mg/kg	0.181	0.00429	.05	71.0	49.8-132	L770289-05	WG795956
Total Xylene	mg/kg	0.531	0.00348	.15	70.0	41.2-140	L770289-05	WG795956
a,a,a-Trifluorotoluene(FID)					90.60	59-128		WG795956
a,a,a-Trifluorotoluene(PID)					101.0	54-144		WG795956
TPH (GC/FID) Low Fraction	mg/kg	15.0	0.0	5.5	54.0	28.5-138	L770289-05	WG795956
a,a,a-Trifluorotoluene(FID)					95.10	59-128		WG795956
a,a,a-Trifluorotoluene(PID)					107.0	54-144		WG795956
Benzene	mg/kg	0.195	0.0	.05	78.0	49.7-127	L771109-01	WG796950
Ethylbenzene	mg/kg	0.188	0.0	.05	75.0	40.8-141	L771109-01	WG796950
Toluene	mg/kg	0.190	0.0	.05	76.0	49.8-132	L771109-01	WG796950
Total Xylene	mg/kg	0.578	0.000561	.15	77.0	41.2-140	L771109-01	WG796950
a,a,a-Trifluorotoluene(PID)					96.20	54-144		WG796950
TPH (GC/FID) Low Fraction	mg/kg	14.0	0.0	5.5	51.0	28.5-138	L771109-01	WG796950
a,a,a-Trifluorotoluene(FID)					97.50	59-128		WG796950

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/kg	0.170	0.171	68.0	49.7-127	0.510	23.5	L769595-01	WG795391
Ethylbenzene	mg/kg	0.182	0.182	72.9	40.8-141	0.260	23.8	L769595-01	WG795391
Toluene	mg/kg	0.171	0.172	68.4	49.8-132	0.840	23.5	L769595-01	WG795391
Total Xylene	mg/kg	0.541	0.545	72.0	41.2-140	0.760	23.7	L769595-01	WG795391
a,a,a-Trifluorotoluene(FID)				95.50	59-128				WG795391
a,a,a-Trifluorotoluene(PID)				102.0	54-144				WG795391
TPH (GC/FID) Low Fraction	mg/kg	20.5	19.9	74.2	28.5-138	2.56	23.6	L769595-01	WG795391

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Quality Assurance Report
Level II

L770289

June 21, 2015

Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
a,a,a-Trifluorotoluene(FID)				101.0	59-128				
a,a,a-Trifluorotoluene(PID)				107.0	54-144				
Benzene	mg/kg	0.181	0.175	72.3	49.7-127	3.32	23.5	L770289-05	WG795956
Ethylbenzene	mg/kg	0.182	0.179	72.5	40.8-141	1.69	23.8	L770289-05	WG795956
Toluene	mg/kg	0.185	0.181	72.2	49.8-132	2.21	23.5	L770289-05	WG795956
Total Xylene	mg/kg	0.536	0.531	71.0	41.2-140	0.820	23.7	L770289-05	WG795956
a,a,a-Trifluorotoluene(FID)				90.80	59-128				WG795956
a,a,a-Trifluorotoluene(PID)				101.0	54-144				WG795956
TPH (GC/FID) Low Fraction	mg/kg	17.0	15.0	61.8	28.5-138	12.6	23.6	L770289-05	WG795956
a,a,a-Trifluorotoluene(FID)				95.80	59-128				WG795956
a,a,a-Trifluorotoluene(PID)				108.0	54-144				WG795956
Benzene	mg/kg	0.187	0.195	74.9	49.7-127	3.84	23.5	L771109-01	WG796950
Ethylbenzene	mg/kg	0.177	0.188	71.0	40.8-141	5.71	23.8	L771109-01	WG796950
Toluene	mg/kg	0.180	0.190	72.1	49.8-132	5.22	23.5	L771109-01	WG796950
Total Xylene	mg/kg	0.541	0.578	72.1	41.2-140	6.56	23.7	L771109-01	WG796950
a,a,a-Trifluorotoluene(PID)				98.90	54-144				WG796950
TPH (GC/FID) Low Fraction	mg/kg	14.7	14.0	53.4	28.5-138	4.53	23.6	L771109-01	WG796950
a,a,a-Trifluorotoluene(FID)				97.20	59-128				WG796950

Batch number /Run number / Sample number cross reference

WG794915: R3042943: L770289-01 02 03 04 05 06 07 08
WG794917: R3042949: L770289-09 10 11
WG794934: R3042967: L770289-11
WG794936: R3043222: L770289-01 02 03 04 05 06 07 08 09 10
WG795391: R3043799: L770289-01 02 03 04
WG795956: R3044022: L770289-05 06 07 08 09 10
WG796950: R3044762: L770289-11

* * Calculations are performed prior to rounding of reported values.
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L770289

June 21, 2015

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

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

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

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

ANALYTICAL REPORT

August 26, 2015

XTO Energy - San Juan Division

Sample Delivery Group:	L784324
Samples Received:	08/21/2015
Project Number:	
Description:	LT Environmental

Report To: James McDaniel
382 County Road 3100
Aztec, NM 87410

Entire Report Reviewed By:

Daphne R Richards

Daphne Richards
Technical Service Representative

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FARMW-081915-1100 L784324-04 GW

Collected by: MIchael A Wicker
Collected date/time: 08/19/15 11:00
Received date/time: 08/21/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC) by Method 8021B	WG810927	20	08/23/15 09:01	08/23/15 09:01	MCB
Volatile Organic Compounds (GC) by Method 8021B	WG810932	250	08/24/15 14:36	08/24/15 14:36	MCB

FARMW-081915-1230 L784324-05 GW

Collected by: MIchael A Wicker
Collected date/time: 08/19/15 12:30
Received date/time: 08/21/15 09:00

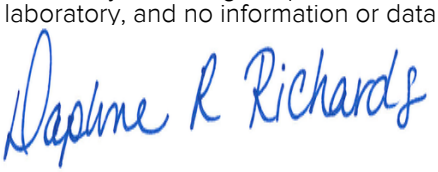
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC) by Method 8021B	WG810927	1	08/23/15 09:24	08/23/15 09:24	MCB

FARMW-081915-1330 L784324-06 GW

Collected by: MIchael A Wicker
Collected date/time: 08/19/15 13:30
Received date/time: 08/21/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC) by Method 8021B	WG810927	20	08/23/15 09:45	08/23/15 09:45	MCB
Volatile Organic Compounds (GC) by Method 8021B	WG810932	250	08/24/15 14:58	08/24/15 14:58	MCB
Volatile Organic Compounds (GC) by Method 8021B	WG811603	2000	08/26/15 13:47	08/26/15 13:47	MCB

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the laboratory, and no information or data have been knowingly withheld that would affect the quality of the



Daphne Richards
Technical Service Representative

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	4.43		0.0100	20	08/23/2015 09:01	WG810927
Toluene	17.1		1.25	250	08/24/2015 14:36	WG810932
Ethylbenzene	1.10		0.0100	20	08/23/2015 09:01	WG810927
Total Xylene	11.3		0.0300	20	08/23/2015 09:01	WG810927
(S) a,a,a-Trifluorotoluene(PID)	*103*		*55.0-122*		*08/23/2015 09:01*	WG810927

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	0.00260		0.000500	1	08/23/2015 09:24	WG810927
Toluene	0.00685		0.00500	1	08/23/2015 09:24	WG810927
Ethylbenzene	0.00193		0.000500	1	08/23/2015 09:24	WG810927
Total Xylene	0.0225		0.00150	1	08/23/2015 09:24	WG810927
(S) a,a,a-Trifluorotoluene(PID)	*104*		*55.0-122*		*08/23/2015 09:24*	WG810927

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	4.40		0.0100	20	08/23/2015 09:45	WG810927
Toluene	40.0		1.25	250	08/24/2015 14:58	WG810932
Ethylbenzene	1.95		0.0100	20	08/23/2015 09:45	WG810927
Total Xylene	18.1		3.00	2000	08/26/2015 13:47	WG811603
(S) a,a,a-Trifluorotoluene(PID)	*100*		*55.0-122*		*08/23/2015 09:45*	WG810927

Method Blank (MB)

(MB) 08/23/15 06:27

Analyte	MB Result	MB Qualifier	MB RDL
	mg/l		mg/l
Benzene	ND		0.000500
Toluene	ND		0.00500
Ethylbenzene	ND		0.000500
Total Xylene	ND		0.00150
(S) a,a,a-Trifluorotoluene(PID)	*105*		*55.0-122*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 08/23/15 05:21 • (LCSD) 08/23/15 05:43

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Benzene	0.0500	0.0384	0.0434	76.9	86.8	70.0-130			12.1	20
Toluene	0.0500	0.0405	0.0442	81.0	88.3	70.0-130			8.62	20
Ethylbenzene	0.0500	0.0409	0.0453	81.9	90.5	70.0-130			9.98	20
Total Xylene	0.150	0.126	0.138	84.0	92.1	70.0-130			9.19	20
(S) a,a,a-Trifluorotoluene(PID)				*104*	*104*	*55.0-122*				

L783444-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 08/23/15 07:55 • (MS) 08/23/15 06:49 • (MSD) 08/23/15 07:11

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Benzene	0.0500	0.00727	0.0507	0.0497	86.8	84.9	1	57.2-131			1.89	20
Toluene	0.0500	ND	0.0533	0.0527	107	105	1	63.7-134			1.28	20
Ethylbenzene	0.0500	0.00407	0.0489	0.0482	89.7	88.3	1	67.5-135			1.42	20
Total Xylene	0.150	0.00388	0.143	0.141	92.6	91.5	1	65.9-138			1.23	20
(S) a,a,a-Trifluorotoluene(PID)					*104*	*104*		*55.0-122*				

Method Blank (MB)

(MB) 08/24/15 11:39

Analyte	MB Result	MB Qualifier	MB RDL
	mg/l		mg/l
Toluene	ND		0.00500

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 08/24/15 09:02 • (LCSD) 08/24/15 09:24

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Toluene	0.0500	0.0448	0.0461	89.6	92.1	70.0-130			2.83	20

L784743-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 08/24/15 14:14 • (MS) 08/24/15 12:23 • (MSD) 08/24/15 12:45

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Toluene	0.0500	0.000365	0.0471	0.0486	93.4	96.5	1	63.7-134			3.17	20

Method Blank (MB)

(MB) 08/26/15 12:56

Analyte	MB Result	MB Qualifier	MB RDL
	mg/l		mg/l
Total Xylene	ND		0.00150

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 08/26/15 10:50 • (LCSD) 08/26/15 11:15

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Total Xylene	0.150	0.140	0.132	93.1	87.9	70.0-130			5.80	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

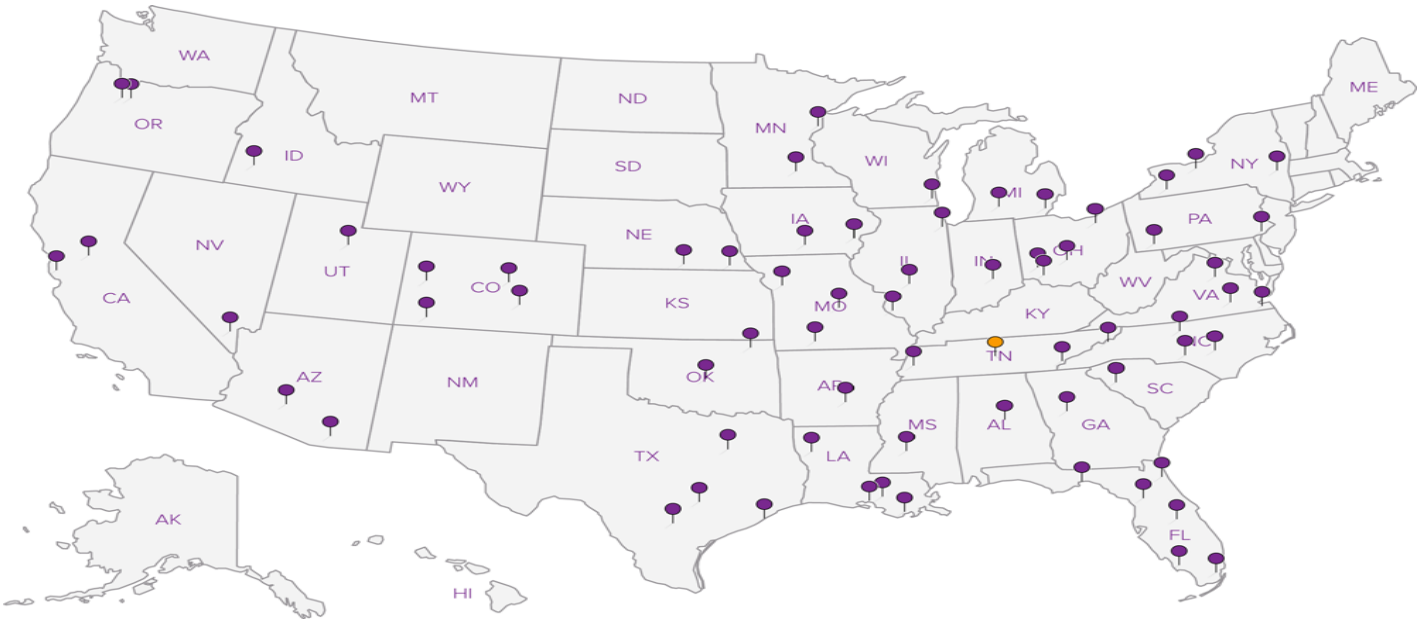
[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



XTO ENERGY
Western Division

Quote Number	Page 1 of 1	
XTO Contact: James McDaniels	XTO Contact Phone #: (505) 333-3701	
Email Results to: AAger@LTEnv.com / DHencmann@LTEnv.com		
Well Site/Location: Sullivan GC D#1E	API Number	Test Reason: Release
Collected By: Michael A Wicker	Samples on Ice: (Y) / N	Turnaround: ___ Standard ___ Next Day ___ Two Day ✓ Three Day ___ Std. 5 Bus. Days (by contract) Date Needed ___
Company: LT Environmental	QA/QC Requested: Standard	
Signature	Gray Areas for Lab Use Only!	

Analysis: BTEX (8021) | TPH-GRO/DRO

Lab Information

Office Abbreviations
Farmington = FAR
Durango = DUR
Bakken = BAK
Raton = RAT
Piceance = PC
Roosevelt = RSV
La Barge = LB
Orangeville = OV
C157

Sample ID	Sample Name	Media	Date	Time	Preservative	No. of Conts.	Sample Number
FARMW-081915-0930	SB02@16-18'	S	8-19-15	0930	Cool	1	L784324-01
FARMW-081915-1500	SB07@16-18'	S	8-19-15	1500	Cool	2	02
FARMW-081915-1540	SB08@16-17'	S	8-19-15	1540	Cool	2	03
FARMW-081915-1100	SB03	GW	8-19-15	1100	Cool	3	04
FARMW-081915-1230	SB05	GW	8-19-15	1230	Cool	3	05
FARMW-081915-1330	SB06	GW	8-19-15	1330	Cool	3	06

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

Relinquished By: (Signature)	Date: 8-20-15	Time: 1330	Received By: (Signature)	Number of Bottles	Sample Condition
Relinquished By: (Signature)	Date:	Time:	Received By: (Signature)	Temperature: 21°	Other Information
Relinquished By: (Signature)	Date:	Time:	Received for Lab by: (Signature)	Date: 8/21/15 Time: 0900	

Comments

TDL

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

0174

XTO ENERGY
Western Division

Quote Number	**Page _1_ of _1_**	
XTO Contact: Jame McDaniels	**XTO Contact Phone #:** (505) 333-3701	
Email Results to: AAger@ltenv.com; DHencmann@ltenv.com		
Well Site/Location Sullivan GC D#1E	**API Number**	**Test Reason** Release
Collected By Michael A Wicker	**Samples on Ice (Yes)**	**Turnaround**
Company LT Environmental, Inc.	**QA/QC Requested**	___ 24-Hour ___ Next Day ___ Two Day _X_ Three Day ___ Std.5 Bus. Days(by contract)
Signature	**Standard**	**Date Needed** _____
	Gray Areas for Lab Use Only!	

Analysis

Sample ID	Sample Name	Media	Date	Time	Preservative	No. of Conts.	TPH-GRO/DRO	BTEX (8021)	SAR	EC	CHLORIDE		Sample Number
FARMW-082115-1035	SB10@2'	S	8/21/2015	1035	Cool	1	X	X					78487-01
FARMW-082115-1100	SB11@4'	S	8/21/2015	1100	Cool	1	X	X					02
FARMW-082115-1145	SB12@6'	S	8/21/2015	1145	Cool	1	X	X					03
FARMW-082115-1425	SB14@3'	S	8/21/2015	1425	Cool	1	X	X					04
FARMW-082115-1624	SB15@17.5'	S	8/21/2015	1624	Cool	1	X	X					05

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

Lab Information A137

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

Relinquished By: (Signature)	**Date:** 8-24-15	**Time:** 1345	**Received By: (Signature)**	**Number of Bottles** 5	**Sample Condition**
Relinquished By: (Signature)	**Date:**	**Time:**	**Received By: (Signature)**	**Temperature:** 2.4°	**Other Information**
Relinquished By: (Signature)	**Date:**	**Time:**	**Received for Lab by: (Signature)**	**Date:** 8/25/15 **Time:** 0900	

Comments 2. TDI

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