



May 13, 2015

Mr. David Blake Ford  
Encana Oil & Gas (USA) Inc.  
3601 Stagecoach Road North  
Longmont, CO 80504

**RE: Well Installation, Remediation, and Groundwater Sampling Annual Report  
Scheidt State 3-16J  
API # 05-123-11541  
SEC.16 T1N R67W 6PM  
LAT./LONG.: 40.047641/-104.891013  
Weld County, Colorado**

Dear Mr. Ford,

Eagle Environmental Consulting, Inc. (EAGLE) is pleased to present this Well Installation, Remediation, and Groundwater Sampling Annual Report to Encana Oil & Gas (USA) Inc. (Encana) for the above referenced site. The data included within this report covers work completed at the site from May 2014 through March 2015.

## **1.0 SITE BACKGROUND**

In December 2009, petroleum hydrocarbon impacted soil was discovered near the produced water tank on the Scheidt State 3-16J tank battery. Upon discovery, Encana contractors completed limited excavation activities within the vicinity of the produced water tank to remove residual petroleum hydrocarbon impacted soil. Following source removal excavation activities at the site, three groundwater monitoring wells (B-01 through B-03) were installed to define dissolved phase petroleum hydrocarbon impacts beneath the site. A site location map is presented in Figure 1.

To further define dissolved phase petroleum hydrocarbon impacts beneath the site, three additional groundwater monitoring wells (MW-01 through MW-03) were installed on March 17, 2011.

Based on groundwater analytical results, dissolved phase benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations exceeded their respective Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 regulatory limits in monitoring wells B-01 through B-03, and MW-01 through MW-03.

Between March 6, 2012 and March 12, 2012, additional source removal excavation activities, the application of a groundwater amendment, and the installation of a groundwater extraction system were completed at the site. Martin Oilfield Services, Inc. completed source removal excavation activities within the vicinity of the former production water tank to remove residual soil impacts not addressed during limited excavation activities completed during December 2009. The extents of the excavation were approximately 45 feet by approximately 40 feet, with an average depth of 16 feet below ground surface (bgs). Petroleum hydrocarbon impacted soil excavated from the site was disposed of at the Erie Landfill, located in Erie, Colorado. Any groundwater encountered during excavation activities was removed via vacuum truck and disposed of offsite at an approved disposal facility.

Four confirmation soil samples (S-1 through S-4) collected from the sidewalls of the excavation were submitted for laboratory analysis to Origins Laboratory, Inc. (Origins), located in Denver, Colorado, for analysis of BTEX and total petroleum hydrocarbons-gasoline range organics (TPH-GRO) by Environmental Protection Agency (EPA) Method SW8260C. The four confirmation soil samples were also analyzed for TPH-diesel range organics (TPH-DRO) by EPA Method 8015C. Confirmation soil samples were not collected from the floor of the excavation, as observed petroleum hydrocarbon impacts extended into the saturated zone.

Based on laboratory analytical results, the soil samples collected from the south (S-3@10') and east (S-4@12.5') sidewalls of the excavation contained concentrations of benzene exceeding the COGCC Table 910-1 benzene regulatory limit of 0.17 milligrams per kilogram (mg/kg), with concentrations of 0.352 mg/kg and 0.214 mg/kg, respectively. The remaining soil samples collected from the north (S-2@12') and west (S-1@7') sidewalls of the excavation did not exceed the COGCC Table 910-1 regulatory limits for BTEX, TPH-GRO, or TPH-DRO.

Prior to the installation of the groundwater extraction system, 500 pounds of a granular activated carbon amendment (BOS-200) was mixed with 2.5 gallons of bacteria concentrate and applied to the excavation to address residual adsorbed and dissolved petroleum hydrocarbon impacts. Following the application of the groundwater amendment and bacteria concentrate, pea gravel was placed on the floor of the excavation in preparation for the installation of the groundwater extraction system.

The groundwater extraction system consisted of two, flexible, corrugated, 4-inch, slotted polyethylene horizontal legs, one leg approximately 30 feet in length and one leg approximately 40 feet in length. Both legs were covered within a pea gravel layer approximately 1 foot thick, and connected to a 6-inch poly vinyl chloride (PVC) riser that extended approximately 3.5 feet above the ground surface. Following the installation of the groundwater extraction system, the excavation was backfilled with clean structural fill to the surface.

On June 20, 2013, EAGLE surveyed the top of casing (TOC) elevations for each of the monitoring wells to determine an accurate groundwater elevation and flow direction for the site. Spatial location of each monitoring well was also recorded using a Trimble GeoXT 6000 series instrument to generate a site map utilizing the data collected from the Trimble instrument.

On December 17, 2013, EAGLE mobilized to the site to supervise monitoring/remediation well installation and replacement activities. ACI Services, Inc. (ACI) utilized a Central Mining Equipment (CME) 55 drill rig to complete drilling activities at the site.

Nine soil borings were advanced on and to the north, northeast, and east of the Scheidt State 3-16J tank battery and converted into 2-inch groundwater monitoring wells (MW-01R, MW-02R, MW-03R and MW-04 through MW-09). In addition, one soil vapor extraction (SVE-01) and two air sparge (AS-01 and AS-02) remedial wells were installed in the general vicinity of monitoring wells MW-01R and MW-04. Remedial wells AS-01, AS-02, and SVE-01 were completed as 2-inch wells to passively and actively address dissolved phase BTEX concentrations beneath the site.

The soil samples collected from monitoring wells MW-01R through MW-03R, MW-04 through MW-09, and remediation wells AS-01, AS-02, and SVE-01 were analyzed for BTEX and TPH-GRO following EPA Methods 8021/8015, and TPH-DRO following modified EPA Method 3546. The soil sample collected from monitoring well MW-07 was also analyzed for 13 polycyclic aromatic hydrocarbons (PAHs) following EPA Method 8270C-SIM, metals following EPA Methods 6010B and 3060A/7196A, as well as pH following EPA Method 9045D, specific conductance following EPA Method 9050A Mod.,

and sodium adsorption ratio (SAR). In addition, per Encana's request, the soil sample collected from monitoring well, MW-04, was analyzed for arsenic following EPA Method 6010B.

Based on laboratory analytical results, the soil samples collected from soil borings MW-01R through MW-03R, MW-04 through MW-09, AS-01, AS-02, and SVE-01 did not contain BTEX, TPH-GRO, or TPH-DRO concentrations exceeding their respective COGCC Table 910-1 regulatory limits or laboratory reporting limits. The soil sample collected from soil boring MW-07 did not contain PAHs, specific conductance, pH, or SAR concentrations/values exceeding their respective COGCC Table 910-1 reporting limits or laboratory reporting limits.

Arsenic concentrations were observed within soil borings MW-04 and MW-07 exceeding the COGCC Table 910-1 regulatory limit of 0.39 mg/kg, with concentrations of 5.9 mg/kg and 7.3 mg/kg, respectively. Arsenic is naturally occurring in some geologic environments within Colorado due to the weathering and erosion of bedrock and soil. The Colorado Department of Public Health and Environment (CDPHE) developed a Risk Management Guidance Document for Evaluating Arsenic Concentrations in Soil, which was revised in July 2014. During the study conducted by the EPA, the average concentration of arsenic observed in Colorado soils was 11 mg/kg. Based on the average concentration of arsenic listed in the guidance document provided by the CDPHE and the arsenic concentrations observed within the soil borings advanced on the site, arsenic is not a chemical of concern to the site at this time.

On December 23, 2013, EAGLE installed a whirlybird turbine vent on remedial well, SVE-01. The whirlybird turbine vent was used to passively remove volatile organic compounds (VOCs) from the subsurface beneath the site.

Remedial wells AS-01, AS-02, and SVE-01 were installed to provide a mechanical means for volatilizing and recovering dissolved and vapor phase petroleum hydrocarbons beneath the site. Mobile air sparge/soil vapor extraction (AS/SVE) pilot testing was completed at the site in April 2014. The results of the pilot testing indicated that air sparging the groundwater increased the volatilization of dissolved petroleum hydrocarbons beneath the site. Monthly AS events have been completed at the site from May 2014 through February 2015. Vapors generated during AS activities are removed passively via SVE-01. Air sparging events are not completed during the months when quarterly groundwater sampling is conducted.

## **2.0 SITE DESCRIPTION**

The Scheidt State 3-16J site is located within Section 16, Township 1 North, Range 67 West of the 6<sup>th</sup> Prime Meridian. The well and tank battery is located at latitude: 40.047641 and longitude -104.891013 in Weld County, Colorado.

### **2.1 Site Hydrogeology**

Based on field observations, the site lithology beneath the site is a lean clay from the surface to approximately 19 feet bgs. A clayey sand/sand lense was observed within MW-10 and MW-11 from approximately 12 feet bgs to 18 feet bgs. A sandstone confining layer was observed within the borehole of monitoring wells, MW-09, at approximately 11 feet bgs to 15 feet bgs and MW-11, at approximately 18 feet bgs to 20 feet bgs. During the groundwater sampling events completed at the site from June 2014 through March 2015, groundwater within monitoring wells MW-01R through MW-03R and MW-04 through MW-11 was observed between approximately 6-9 feet bgs. Historically the groundwater flow direction beneath the site is predominantly to the east.

### **3.0 MONITORING AND REMEDIATION WELL INSTALLATION ACTIVITIES**

#### **3.1 Field Work Preparation and Planning**

The Utility Notification Center of Colorado (UNCC) was called at least 48 hours in advance of drilling activities to confirm no unmarked utilities or other obstacles were present within the proposed drilling locations. Tier II facility owners were also contacted to confirm the necessary buried utility notifications were completed. Each boring location was also cleared to a depth of approximately 5-6 feet bgs, prior to the advancement of any proposed soil boring, with a pothole or “daylighting” rig, to ensure no unmarked utilities were present beneath the boring location. Prior to completing subsurface activities, a Ground Disturbance Form was completed by Encana and EAGLE.

#### **3.2 Monitoring/Remediation Well Installation Activities**

On September 10, 2014, EAGLE utilized a Geoprobe 7822DT direct-push drill rig to complete monitoring and remediation well installation activities. Two soil borings were advanced and completed into 2-inch groundwater monitoring wells (MW-10 through MW-11). Two additional soil borings were advanced and completed into one, 2-inch air sparge (AS-03) and one, 2-inch soil vapor extraction (SVE-02) remediation wells. Monitoring well MW-11 was completed with steel a protective riser casing. Monitoring/remediation wells MW-10, AS-03, and SVE-02 were completed with 8-inch steel, traffic rated, flush mounts.

Soil boring logs/monitoring well completion diagrams are included in Attachment A. Colorado Division of Water Resources (DWR) Well Permits are included in Attachment B.

#### **3.3 Soil Sampling Procedures**

During monitoring/remediation well installation activities, soil samples were collected continuously within 5-foot, plastic sample liners. The samples within the plastic liners were separated in 2.5 foot intervals for soil identification and analysis. A portion from each interval was placed in a sealable plastic bag for VOC headspace analysis utilizing a field calibrated portable photoionization detector (PID). Each bag was sealed, labeled, and allowed to volatilize for approximately five to ten minutes. The other portion of each sample from the same interval was placed in laboratory supplied, 4-ounce, glass jars and sealed for laboratory analysis. After volatilization, the bagged sample was perforated with the probe of the calibrated field portable PID, using a 10.6 electron volt (eV) lamp, to measure the organic vapor concentration within the headspace. Organic vapor concentrations were recorded in parts per million by volume (ppm-v) for each sample. Overall, the observed PID values ranged from 0.3 ppm-v (MW-10@5-7.5' bgs) to 2,011 ppm-v (MW-11@12.5-15' bgs).

Based on PID reading and sample location, the soil samples collected from MW-10@12.5-15' and MW-11@12.5-15' were submitted to ESC Lab Sciences (ESC) located in Mt. Juliet, Tennessee. Soil samples, MW-10@12.5-15' and MW-11@12.5-15' were submitted for analysis of BTEX and TPH-GRO following EPA Methods 8021/8015, and TPH-DRO following modified EPA Method 3546. Soil samples were not collected from remediation wells AS-03 and SVE-02.

Following monitoring/remediation well installation activities, spatial locations of AS-03, SVE-02, MW-10, and MW-11 were recorded using a Trimble GeoXT 6000 series instrument and their locations were updated on the current site map. A site map illustrating monitoring/remediation wells is presented as Figure 2.

A representative from ESC picked up the soil samples under proper chain-of custody procedures for shipment to the laboratory and the soil samples were received within quality assurance/quality control (QA/QC) parameters.

### **3.4 Soil Analytical Results**

Based on laboratory analytical results, the soil sample collected from monitoring well MW-11@12.5-15' contained a concentration of benzene and TPH exceeding their respective COGCC Table 910-1 regulatory limits of 0.17 mg/kg and 500 mg/kg with concentrations of 1.7 mg/kg and 630 mg/kg, respectively.

The soil sample collected from MW-10@12.5-15' did not contain concentrations of BTEX, TPH-GRO, or TPH-DRO exceeding their respective COGCC Table 910-1 regulatory limits.

Soil analytical results are summarized in Table 1. Soil analytical results are also presented in Figure 3. Soil laboratory analytical reports are included in Attachment C.

## **4.0 GROUNDWATER MONITORING ACTIVITIES**

### **4.1 Groundwater Sampling Procedures**

Following monitoring well installation activities, MW-10 and MW-11 were developed and purged a minimum of six well volumes using a Geo Pump Series 1 peristaltic pump. In addition, EAGLE surveyed the TOC elevation for each monitoring well location for accurate groundwater elevations and flow direction interpretation.

Prior to groundwater sample collection, MW-01R through MW-03R and MW-04 and MW-11 were purged with a peristaltic pump and flow cell at a rate of no more than 500 milliliters per min (mL/min). During purging activities, groundwater parameters were monitored for stabilization. Groundwater samples were collected in 40 milliliter (mL) amber vials once the parameters were observed stable, or following approximately 15 minutes of purging activities. Prior to groundwater sample collection, the following field parameters were recorded:

- initial depth to groundwater using an interface probe capable of measuring the depth to groundwater or product to an accuracy of 0.01 feet;
- dissolved oxygen (DO) concentrations, pH, temperature, specific conductance, and oxidation reduction potential (ORP) values using a YSI 556 Multimeter probe within a flow cell.

Following groundwater sample collection, the following field parameters were recorded:

- final depth to groundwater using an interface probe capable of measuring the depth to groundwater or product to an accuracy of 0.01 feet.

## 4.2 Groundwater Sampling Activities

Groundwater samples were submitted to ESC for analysis of BTEX following EPA Method 8260B. A representative from ESC picked up the groundwater samples under proper chain-of custody procedures for shipment to the laboratory, and the samples were received within QA/QC parameters.

The following describes quarterly groundwater sampling activities completed at the site from June 2014 through March 2015:

### **June 26, 2014:**

Groundwater samples were collected from MW-01R through MW-03R and MW-04 through MW-09 with relative groundwater elevations ranging from 86.69 feet in MW-06 to 89.94 feet in MW-09. Groundwater flow direction was predominantly to the east-northeast with a calculated hydraulic gradient of 0.0193 feet per foot (ft./ft.) across the site (measured from MW-04 to MW-06).

### ***Groundwater Analytical Results***

Groundwater samples collected from MW-01R, MW-02R, MW-04, and MW-08 contained concentrations of benzene exceeding the COGCC Table 910-1 regulatory limit of 5 micrograms per liter ( $\mu\text{g/L}$ ) with concentrations of 1,100  $\mu\text{g/L}$ , 96  $\mu\text{g/L}$ , 500  $\mu\text{g/L}$ , and 230  $\mu\text{g/L}$ , respectively. In addition, the groundwater samples collected from MW-01R and MW-08 also contained concentrations of total xylenes exceeding the COGCC Table 910-1 regulatory limit of 1,400  $\mu\text{g/L}$  with concentrations of 2,600  $\mu\text{g/L}$  and 2,000  $\mu\text{g/L}$ , respectively. The groundwater sample collected from MW-08 also contained a concentration of toluene exceeding the COGCC Table 910-1 regulatory limit of 560  $\mu\text{g/L}$  with a concentration of 1,500  $\mu\text{g/L}$ .

### **September 22, 2014:**

Groundwater samples were collected from MW-01R through MW-03R and MW-04 through MW-11 with relative groundwater elevations ranging from 84.76 feet in MW-11 to 90.38 feet in MW-09. Groundwater elevations increased approximately 0.45 feet compared to the June 26, 2014 groundwater sampling event. Groundwater flow direction was predominantly to the east-northeast with a calculated hydraulic gradient of 0.0185 ft./ft. across the site (measured from MW-04 to MW-06).

### ***Groundwater Analytical Results***

Groundwater samples collected from MW-01R, MW-02R, MW-04, MW-06 through MW-08, MW-10, and MW-11 contained concentrations of benzene exceeding the COGCC Table 910-1 regulatory limit with concentrations of 250  $\mu\text{g/L}$ , 6.3  $\mu\text{g/L}$ , 140  $\mu\text{g/L}$ , 6.8  $\mu\text{g/L}$ , 160  $\mu\text{g/L}$ , 110  $\mu\text{g/L}$ , 11  $\mu\text{g/L}$ , and 340  $\mu\text{g/L}$ , respectively.

### **December 24, 2014:**

Groundwater samples were collected from MW-01R through MW-03R and MW-04 through MW-11 with relative groundwater elevations ranging from 83.99 feet in MW-11 to 88.95 feet in MW-09. Groundwater elevations decreased approximately 0.95 feet compared to the September 22, 2014 groundwater sampling event. Groundwater flow direction was predominantly to the east with a calculated hydraulic gradient of 0.0143 ft./ft. across the site (measured from MW-08 to MW-05).

### ***Groundwater Analytical Results***

Groundwater samples collected from MW-04, MW-07, MW-08, and MW-10 contained concentrations of benzene exceeding the COGCC Table 910-1 regulatory limit with concentrations of 33 µg/L, 70 µg/L, 380 µg/L, and 13 µg/L, respectively.

#### **March 12, 2015:**

Groundwater samples were collected from MW-01R through MW-03R and MW-04 through MW-11 with relative groundwater elevations ranging from 83.92 feet in MW-11 to 88.68 feet in MW-09. Groundwater elevations decreased approximately 0.14 feet compared to the December 24, 2014 groundwater sampling event. Groundwater flow direction was predominantly to the east with a calculated hydraulic gradient of 0.0119 ft./ft. across the site (measured from MW-08 to MW-05).

### ***Groundwater Analytical Results***

Groundwater samples collected from MW-02R, MW-04, MW-07, and MW-10 contained concentrations of benzene exceeding the COGCC Table 910-1 regulatory limit with concentrations of 5.9 µg/L, 20 µg/L, 42 µg/L, and 10 µg/L, respectively.

A site map presenting the March 12, 2015 groundwater elevations and flow direction is included as Figure 4. A summary of groundwater elevation data is included as Table 2.

The March 12, 2015 groundwater analytical results are presented in Figure 5 and summarized in Table 3. Groundwater laboratory analytical reports are included in Attachment C. Hydrographs illustrating benzene concentrations vs. relative groundwater elevations for monitoring wells MW-01R, MW-02R, MW-04, MW-07, MW-08, MW-10, and MW-11 are included in Attachment D.

## **5.0 AIR SPARGE/SOIL VAPOR EXTRACTION REMEDIAL ACTIVITIES**

On April 22, 2014, EAGLE mobilized to site with a mobile AS/SVE unit to complete AS/SVE pilot testing activities. The mobile AS/SVE unit consists of a 15-horsepower (HP) positive displacement blower and a 10-HP Elmo Rietschle DLR-100 claw air compressor. Per Encana's request, EAGLE completed AS/SVE pilot testing activities on remedial wells AS-01, AS-02, and SVE-01.

Based on data collected during AS/SVE pilot testing activities, AS technology successfully increased the volatilization of dissolved petroleum hydrocarbons at an applied pressure of approximately 7 pounds per square inch (psi) and flow rate of 6-8 standard cubic feet per minute (scfm). In addition, SVE technology successfully recovered and removed low concentrations of VOCs at an applied vacuum of approximately 45-50 inches of water ("H<sub>2</sub>O). An effective radius of influence (ROI) of approximately 40 feet was observed during AS/SVE pilot testing activities at the site.

Based on the low concentrations of VOCs removed during SVE pilot testing activities completed on SVE-01, Encana requested that AS only events be completed while the whirlybird turbine, installed on SVE-01 on December 23, 2013, continues to passively remove VOCs from the subsurface.

EAGLE completed monthly AS events at the site on May 27, 2014, July 24, 2014, and August 26, 2014 utilizing the mobile AS unit. Each AS event consisted of a 4-hour event completed at AS-01 and AS-02. An approximate applied pressure of 7-19 psi with an approximate flow rate of 7-10 scfm was utilized to successfully increase the volatilization of dissolved petroleum hydrocarbons beneath the site.

Following the installation of remedial wells AS-03 and SVE-02, on October 16, 2014, EAGLE completed AS/SVE pilot testing activities on AS-01 through AS-03 and SVE-02 to determine the most effective applied pressure/vacuum to apply to the subsurface to maximize VOC volatilization/removal.

Based on the October 16, 2014 pilot test results, EAGLE completed monthly AS/SVE events on remediation wells AS-01 through AS-03 and SVE-02 on November 25, 2014, January 14, 2015, and February 5, 2015. An approximate applied vacuum of 45 "H<sub>2</sub>O and an applied pressure of 10-11 psi was utilized to successfully increase the volatilization of dissolved petroleum hydrocarbons and recover/remove VOCs from beneath the site.

The data collected during the AS events and AS/SVE events is presented in Attachment E.

## **6.0 SITE SUMMARY**

Following the December 2013 and September 2014 well installation activities, dissolved benzene concentrations exceeding the COGCC Table 910-1 regulatory limit have been observed within monitoring wells MW-01R, MW-02R, MW-04, MW-05, MW-06, MW-07, MW-08, MW-10, and MW-11.

Based on data collected during the March 12, 2015 groundwater sampling event, decreases in dissolved benzene concentrations were observed within MW-02R, MW-04, MW-07, and MW-10 but still exceeded the COGCC Table 910-1 regulatory limit. However, the groundwater samples collected MW-01R, MW-05, MW-06, MW-08, and MW-11 did not contain concentrations of BTEX exceeding their respective COGCC Table 910-1 regulatory limits. Historic low groundwater elevations were observed during the March 2015 groundwater sampling event. The decrease in elevations may account for the low dissolved petroleum hydrocarbon concentrations observed following the event.

Based on laboratory analytical results, no unsaturated adsorbed phase petroleum hydrocarbon impacts exceeding COGCC Table 910-1 regulatory limits exist beneath the site. Therefore, continuation of AS/SVE events or an in-situ remedial event will help decrease residual dissolved petroleum hydrocarbon concentrations beneath the site.

## **7.0 CONCLUSIONS**

Based on the information described above, EAGLE concludes the following:

- The soil sample collected from monitoring well MW-11@12.5-15' contained concentrations of benzene and TPH exceeding their respective COGCC Table 910-1 regulatory limits.
- The soil sample collected from MW-10@12.5-15' did not contain concentrations of BTEX, TPH-GRO, or TPH-DRO exceeding their respective COGCC Table 910-1 regulatory limits.
- Groundwater samples collected from MW-01R, MW-02R, MW-04, and MW-08 during the June 26, 2014 groundwater sampling event contained concentrations of benzene exceeding the COGCC Table 910-1 regulatory limit.
- The groundwater samples collected from MW-01R and MW-08 during the June 26, 2014 groundwater sampling event also contained concentrations of total xylenes exceeding the COGCC Table 910-1 regulatory limit.

- The groundwater sample collected from MW-08 during the June 26, 2014 groundwater sampling event contained a concentration of toluene exceeding the COGCC Table 910-1 regulatory limit.
- Groundwater samples collected from MW-01R, MW-02R, MW-04, MW-06 through MW-08, MW-10, and MW-11 during the September 22, 2014 groundwater sampling event contained concentrations of benzene exceeding the COGCC Table 910-1 regulatory limit.
- Groundwater samples collected from MW-04, MW-07, MW-08, and MW-10 during the December 24, 2014 groundwater sampling event contained concentrations of benzene exceeding the COGCC Table 910-1 regulatory limit.
- Groundwater elevations decreased approximately 0.14 feet during the March 12, 2015 groundwater sampling event compared to the December 24, 2014 groundwater sampling event.
- Groundwater flow direction beneath the site during the March 12, 2015 groundwater sampling event was predominantly to the east with a calculated hydraulic gradient of 0.0119 ft./ft. across the site (measured from MW-08 to MW-05).
- Groundwater samples collected from MW-02R, MW-04, MW-07, and MW-10 during the March 12, 2015 groundwater sampling event contained concentrations of benzene exceeding the COGCC Table 910-1 regulatory limit.
- The three AS events that were conducted on AS-01 and AS-02 from May 2014 through August 2014 appeared effective at volatilizing VOCs beneath the site.
- The four AS/SVE events that were conducted on AS-01 through AS-03 and SVE-02 from October 2014 through February 2015 appeared effective at moving air and removing vapors from the subsurface beneath the site.
- Historic low groundwater elevations were observed during the March 2015 groundwater sampling event. The decrease in elevations may account for the low dissolved petroleum hydrocarbon concentrations observed following the event.

## 8.0 RECOMMENDATIONS

- Continued groundwater sampling activities to evaluate the effectiveness of the AS/SVE events and natural attenuation processes occurring beneath the site.
- Continued AS/SVE remedial events at the site.
- Discuss additional remedial options to address dissolved phase petroleum hydrocarbon impacts remaining beneath the site.

EAGLE sincerely appreciates the opportunity to provide our services. If you have any questions or require further information, please contact us at (303) 433-0479.

Sincerely,

***EAGLE ENVIRONMENTAL CONSULTING, INC.***



Daniel Coloccia  
Project Scientist



Martin Eckert III  
Senior Project Manager

## **FIGURES**

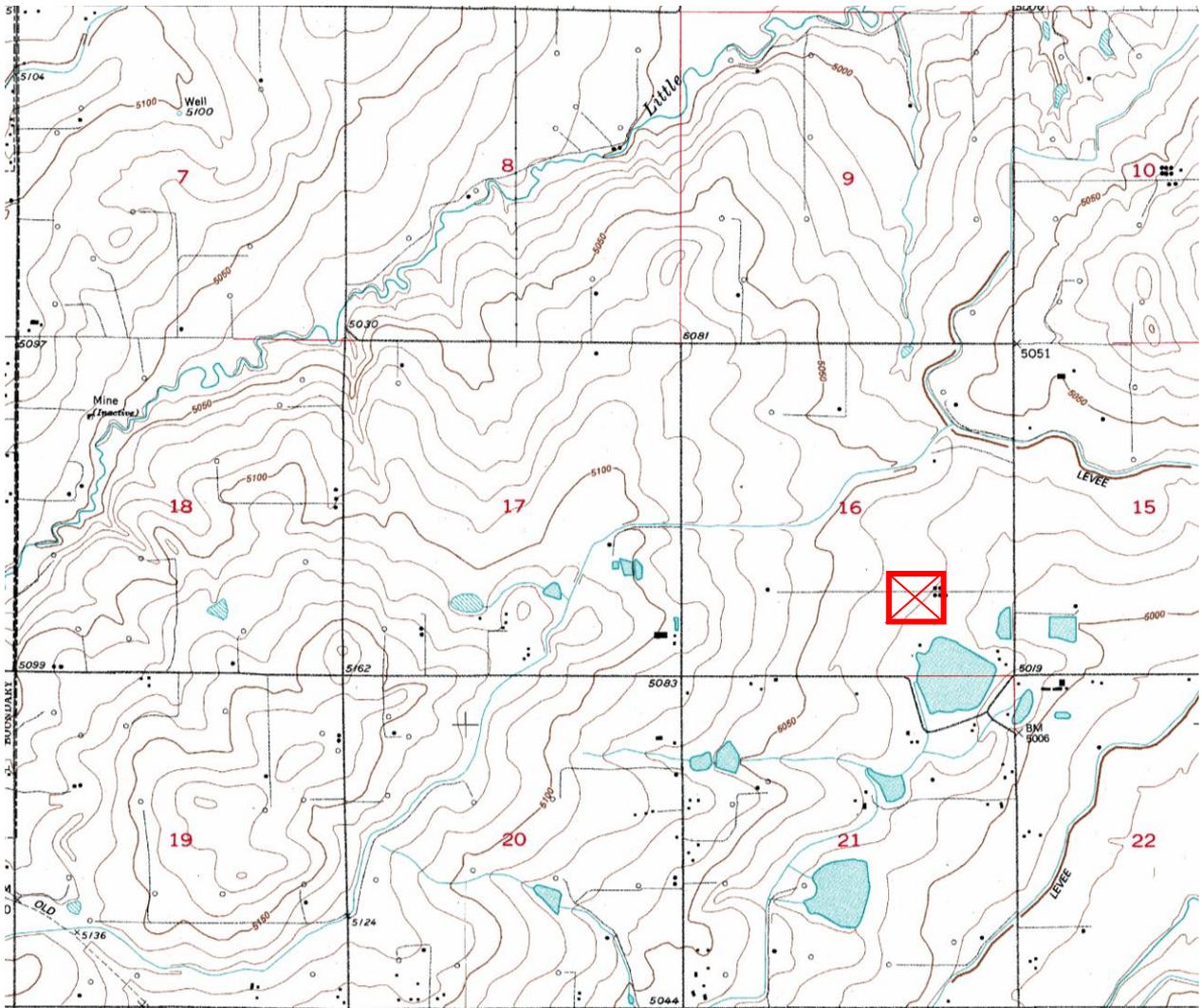
**Figure 1: Site Location Map**

**Figure 2: Site Map**

**Figure 3: Soil Sample Location Map**

**Figure 4: Groundwater Elevation Map (03/12/15)**

**Figure 5: Groundwater Sample Location Map (03/12/15)**



 APPROXIMATE LOCATION OF SCHEIDT STATE 3-16J

TOPOGRAPHIC MAP OBTAINED FROM LIBRE MAP PROJECT

FREDERICK , COLORADO QUADRANGLE UNITED STATES GEOLOGICAL SURVEY 7.5 MINUTE SERIES

**FIGURE 1**  
**SITE LOCATION MAP**  
**SCHEIDT STATE 3-16J**  
**API # 05-123-11541**  
**SEC.16 T1N R67W 6PM**  
**LAT./LONG.: 40.047641/-104.891013**  
**WELD COUNTY, COLORADO**

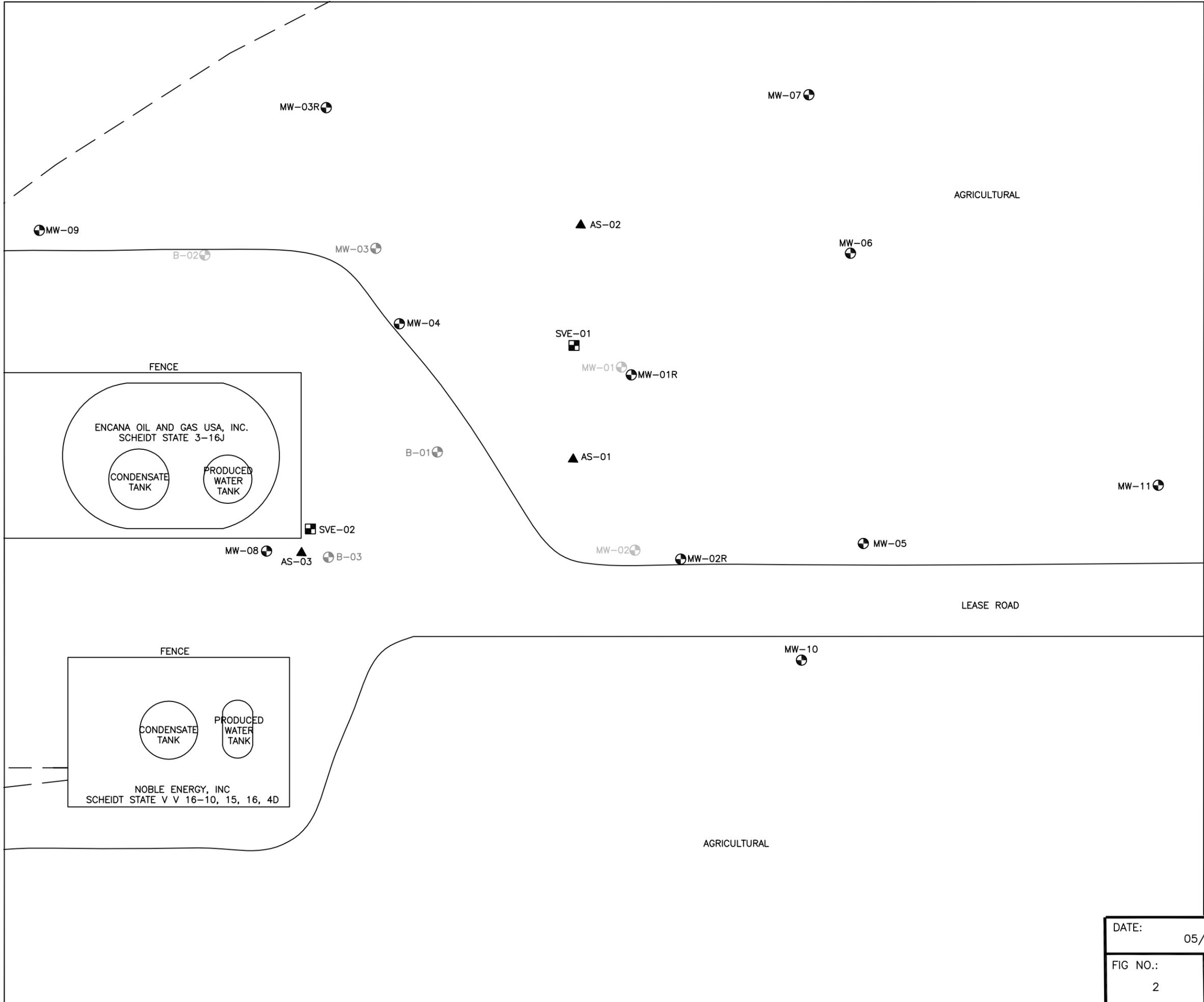


**EAGLE**  
**ENVIRONMENTAL**  
**CONSULTING, INC.**  
 4101 Inca Street, Denver, CO 80211  
 Phone: 303.433.0479 Fax: 303.325.5449

DRAWN BY: DC

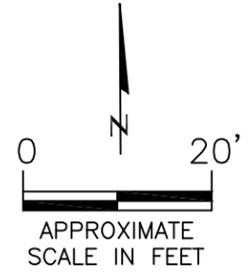
NOT TO SCALE

DATE: 1/16/14



**LEGEND**

-  APPROXIMATE MONITORING WELL LOCATION
-  APPROXIMATE DESTROYED MONITORING WELL LOCATION
-  APPROXIMATE FLOW LINE LOCATIONS
-  APPROXIMATE AIR SPARGE WELL LOCATION
-  APPROXIMATE SOIL VAPOR EXTRACTION WELL LOCATION

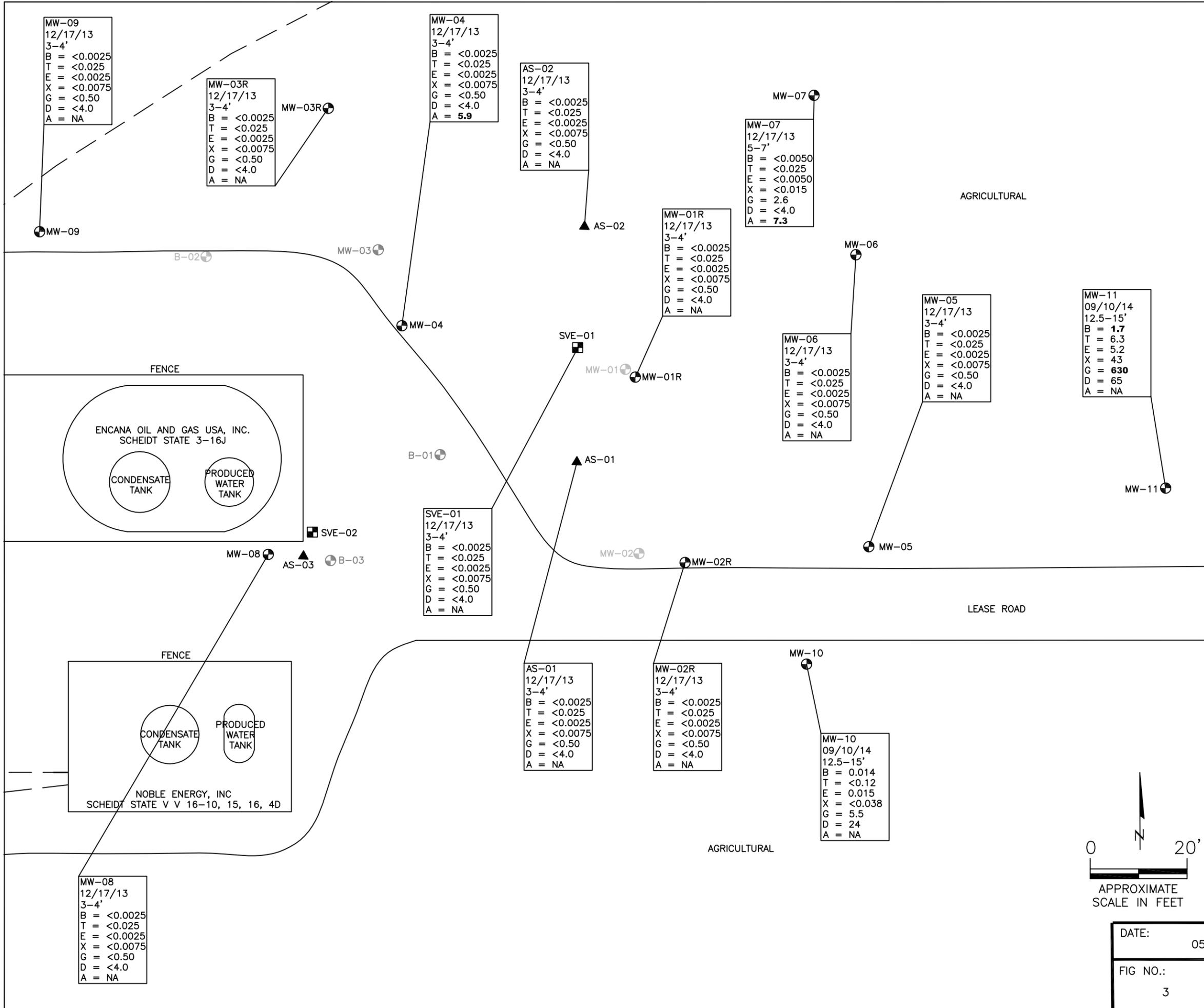


**SITE MAP**  
 SCHEIDT STATE 3-16J  
 API# 05-123-11541  
 SEC.16 T1N R67W 6PM  
 LAT/LONG: 40.047641/-104.891013  
 WELD COUNTY, COLORADO

DATE:	05/05/15
FIG NO.:	2
DRAWN BY:	dc



**EAGLE**  
 ENVIRONMENTAL  
 CONSULTING, INC.  
 4101 INCA STREET, DENVER, CO 80211  
 Ph: 303-433-0479 • F: 303-325-5449



- LEGEND**
- APPROXIMATE MONITORING WELL LOCATION
  - APPROXIMATE DESTROYED MONITORING WELL LOCATION
  - APPROXIMATE FLOW LINE LOCATIONS
  - APPROXIMATE AIR SPARGE WELL LOCATION
  - APPROXIMATE SOIL VAPOR EXTRACTION WELL LOCATION

**PARAMETERS**

**SAMPLE LOCATION**  
**DATE**  
**DEPTH (FEET)**  
 B = BENZENE (mg/kg)  
 T = TOLUENE (mg/kg)  
 E = ETHYLBENZENE (mg/kg)  
 X = TOTAL XYLENES (mg/kg)  
 G = GRO (mg/kg)  
 D = DRO (mg/kg)  
 A = ARSENIC (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM  
 GRO = GASOLINE RANGE ORGANICS  
 DRO = DIESEL RANGE ORGANICS  
 NA = NOT ANALYZED

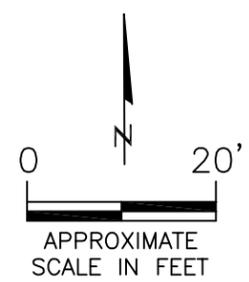
**NOTE:** VALUES PRESENTED IN **BOLD** TYPEFACE EXCEEDED THE COGCC CONCENTRATION LEVELS PRESENTED IN TABLE 910-1.

COGCC = COLORADO OIL AND GAS CONSERVATION COMMISSION.

VALUES PRESENTED WITH A LESS THAN SYMBOL (<) INDICATE CONCENTRATIONS WERE NOT OBSERVED AT THE LABORATORY REPORTING LIMIT.

**NOTE:** SEMI-VOLATILES, METALS, AND INORGANICS SOIL ANALYTICAL RESULTS FOR THE SOIL SAMPLE COLLECTED FROM MONIOTIRNG WELL MW-07 ARE PRESENTED IN TABLES 1A AND 1B.

SOIL SAMPLES WERE NOT COLLECTED FROM REMEDIAL WELLS AS-03 AND SVE-02.

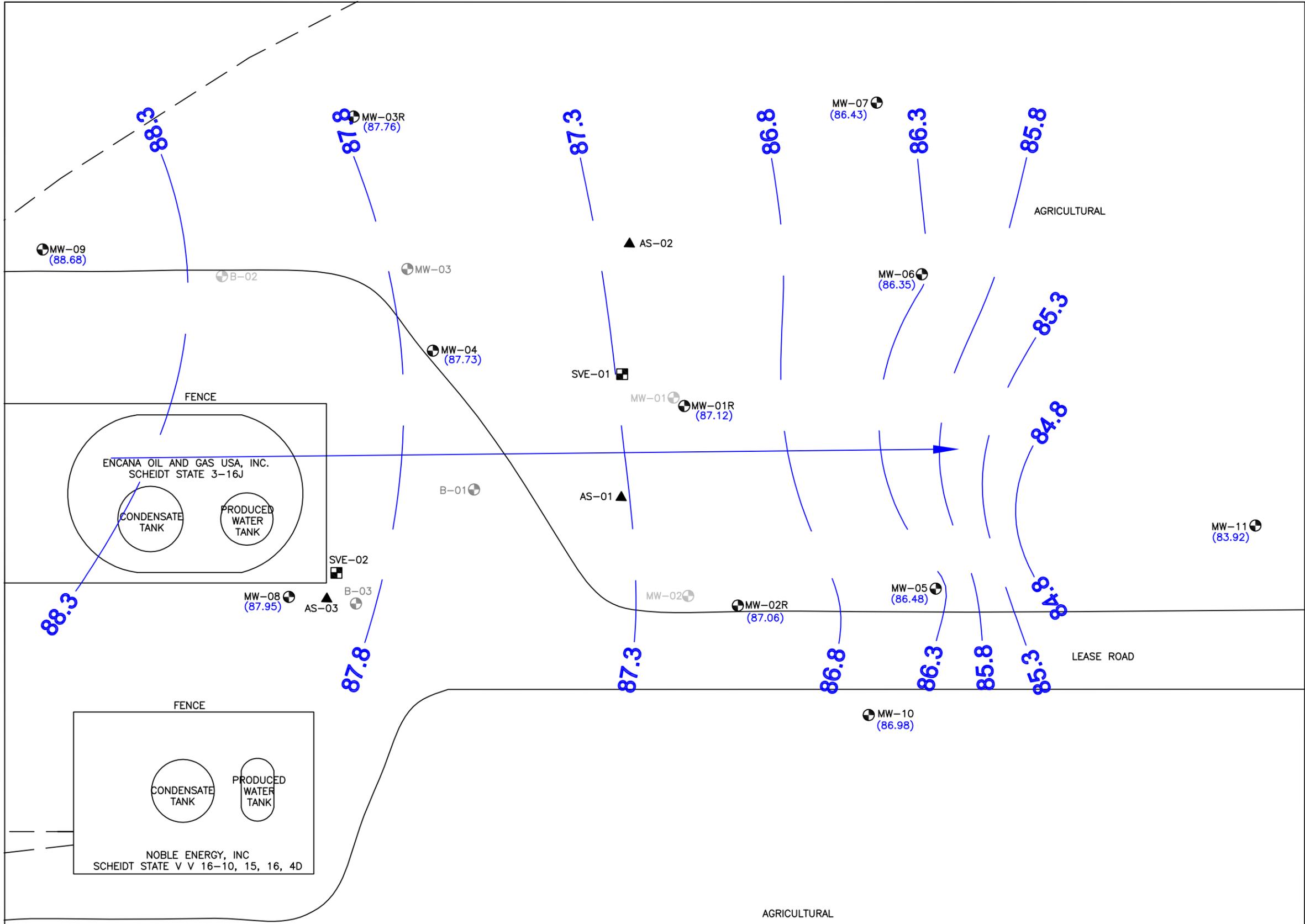


**SOIL SAMPLE LOCATION MAP**  
 SCHEIDT STATE 3-16J  
 API# 05-123-11541  
 SEC.16 T1N R67W 6PM  
 LAT/LONG: 40.047641/-104.891013  
 WELD COUNTY, COLORADO

DATE:	05/05/15
FIG NO.:	3
DRAWN BY:	dc

**EAGLE**  
 ENVIRONMENTAL  
 CONSULTING, INC.

4101 INCA STREET, DENVER, CO 80211  
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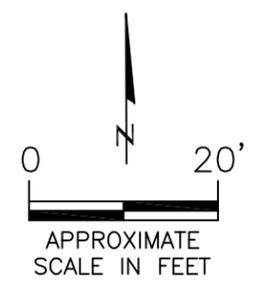


**LEGEND**

- APPROXIMATE MONITORING WELL LOCATION
- APPROXIMATE DESTROYED MONITORING WELL LOCATION
- APPROXIMATE FLOW LINE LOCATIONS
- APPROXIMATE AIR SPARGE WELL LOCATION
- APPROXIMATE SOIL VAPOR EXTRACTION WELL LOCATION
- (89.69) RELATIVE GROUNDWATER ELEVATION (FT.)
- INFERRED GROUNDWATER ELEVATION CONTOUR (FT.)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

FT. = FEET

NOTE: ELEVATION DATA FROM MONITORING WELL MW-10 WAS NOT UTILIZED WHEN CONSTRUCTING GROUNDWATER ELEVATION CONTOURS.

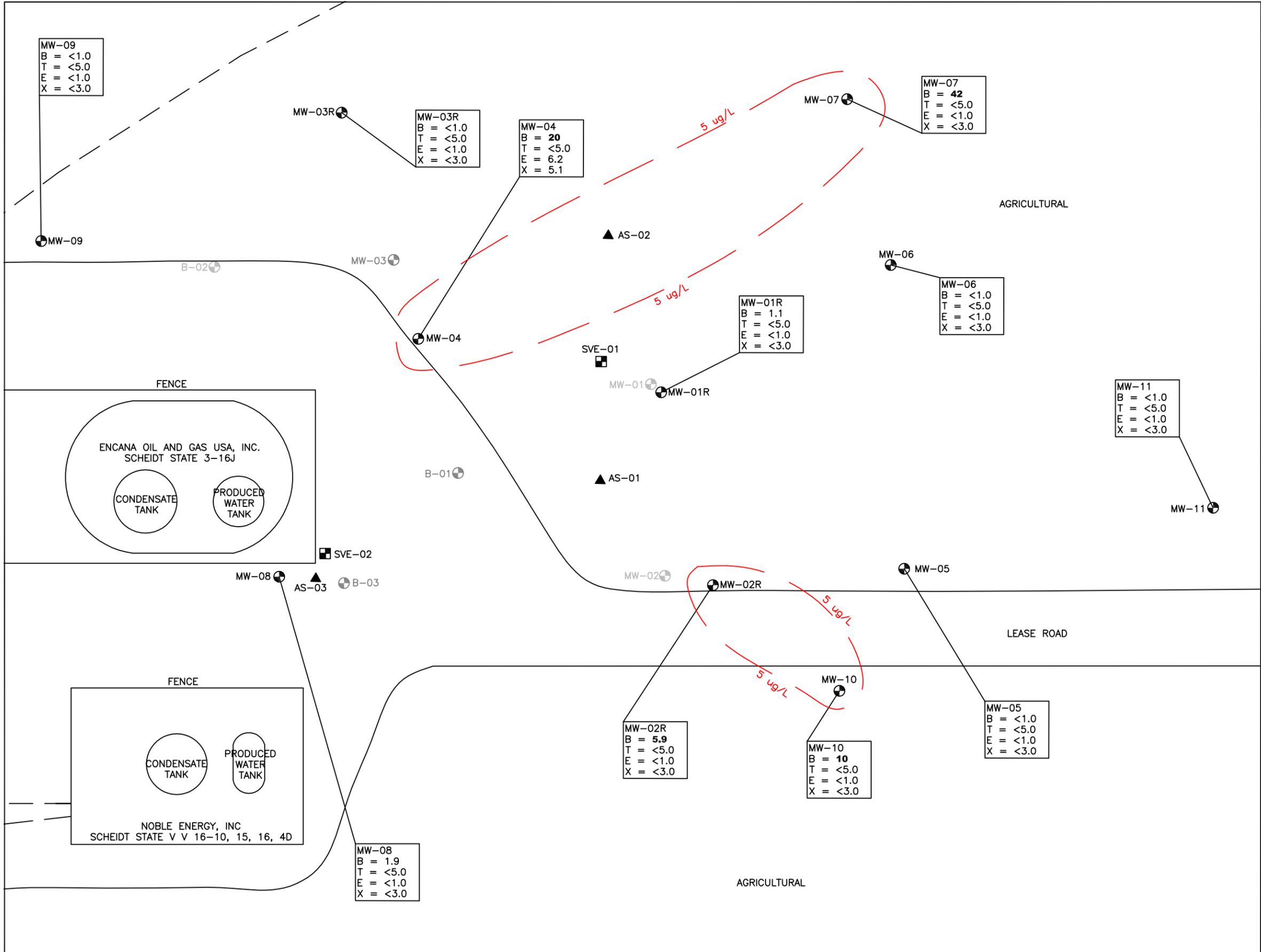


**GROUNDWATER ELEVATION MAP**  
 (03/12/15)  
 SCHEIDT STATE 3-16J  
 API# 05-123-11541  
 SEC.16 T1N R67W 6PM  
 LAT/LONG: 40.047641/-104.891013  
 WELD COUNTY, COLORADO

DATE:	05/05/15	
FIG NO.:	4	DRAWN BY: dc

**EAGLE**  
 ENVIRONMENTAL  
 CONSULTING, INC.

4101 INCA STREET, DENVER, CO 80211  
 Ph: 303-433-0479 • F: 303-325-5449



**LEGEND**

- APPROXIMATE MONITORING WELL LOCATION
- APPROXIMATE DESTROYED MONITORING WELL LOCATION
- APPROXIMATE FLOW LINE LOCATIONS
- APPROXIMATE AIR SPARGE WELL LOCATION
- APPROXIMATE SOIL VAPOR EXTRACTION WELL LOCATION

**PARAMETERS**

**SAMPLE LOCATION**  
 B = BENZENE (µg/L)  
 T = TOLUENE (µg/L)  
 E = ETHYLBENZENE (µg/L)  
 X = TOTAL XYLENES (µg/L)

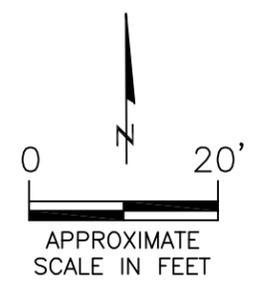
µg/L = MICROGRAMS PER LITER

NOTE: VALUES PRESENTED IN **BOLD** TYPEFACE EXCEED THE COGCC TABLE 910-1 REGULATORY LIMITS FOR THAT COMPOUND.

COGCC = COLORADO OIL AND GAS CONSERVATION COMMISSION

VALUES PRESENTED WITH A LESS THAN SYMBOL (<) INDICATE CONCENTRATIONS WERE NOT OBSERVED AT THE LABORATORY REPORTING LIMIT.

5 ug/L — INFERRED ISOCONCENTRATION CONTOUR FOR BENZENE



**GROUNDWATER SAMPLE LOCATION MAP**  
 (03/12/15)  
 SCHEIDT STATE 3-16J  
 API# 05-123-11541  
 SEC.16 T1N R67W 6PM  
 LAT/LONG: 40.047641/-104.891013  
 WELD COUNTY, COLORADO

DATE:	05/05/15	<p><b>EAGLE</b> ENVIRONMENTAL CONSULTING, INC.</p> <p>4101 INCA STREET, DENVER, CO 80211        Ph: 303-433-0479 • F: 303-325-5449</p>
FIG NO.:	5	
DRAWN BY:	dc	

## **TABLES**

**Table 1: Soil Analytical Results Summary**

**Table 1A: Soil Analytical Results Summary – Semi Volatile Organics**

**Table 1B: Soil Analytical Results Summary – Metals and Inorganics**

**Table 2: Groundwater Elevation and Parameter Summary**

**Table 3: Groundwater Analytical Results Summary**

**TABLE 1**  
**SOIL ANALYTICAL RESULTS SUMMARY**  
**SCHEIDT STATE 3-16J**  
**API# 05-123-11541**  
**SEC.16 T1N R67W 6PM**  
**LAT/LONG: 40.047641/-104.891013**  
**WELD COUNTY, COLORADO**

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
<b>COGCC Table 910-1 Regulatory Limit (mg/kg)</b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>500</b>	
S-1* (West Wall)	03/06/12	7.0	0.0071	<50	<50	0.0294	<50**	
S-2* (North Wall)	03/07/12	12.0	0.120	<50	0.749	5.02	228.2**	
S-3* (South Wall)	03/07/12	10.0	<b>0.352</b>	0.0276	0.161	1.9	20.7**	
S-4* (East Wall)	03/08/12	12.5	<b>0.214</b>	<50	0.724	3.39	197.9**	
MW-01R (40.047569272, -104.890313648)	12/17/13	3.0-4.0	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0
MW-02R (40.0474647372, -104.890272763)	12/17/13	3.0-4.0	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0
MW-03R (40.0477228562, -104.890532095)	12/17/13	3.0-4.0	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0
MW-04 (40.047601962, -104.890479611)	12/17/13	3.0-4.0	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0
MW-05 (40.0474680532, -104.890102978)	12/17/13	3.0-4.0	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0
MW-06 (40.0476332972, -104.890112246)	12/17/13	3.0-4.0	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0
MW-07 (40.0477241082, -104.890139103)	12/17/13	5.0-7.0	<0.0050	<0.025	<0.0050	<0.015	2.6	<4.0
MW-08 (40.0474685392, -104.890580394)	12/17/13	3.0-4.0	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0
MW-09 (40.0476552972, -104.890746751)	12/17/13	3.0-4.0	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0
MW-10 (40.047404538, -104.890185279)	09/10/14	12.5-15.0	0.014	<0.12	0.015	<0.038	5.5	24
MW-11 (40.047502197, -104.889919585)	09/10/14	12.5-15.0	<b>1.7</b>	6.3	5.2	43	<b>630</b>	65
SVE-01 (40.047567, -104.890366)	12/17/13	3.0-4.0	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0
AS-01 (40.047500, -104.890321)	12/17/13	3.0-4.0	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0
AS-02 (40.047636, -104.890322)	12/17/13	3.0-4.0	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0

COGCC = Colorado Oil and Gas Conservation Commission

mg/kg = milligrams per kilogram

TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics

TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics

< = indicates result is less than the stated laboratory reporting limit

Note: Values presented in bold typeface exceed their respective COGCC Table 910-1 Regulatory Limit.

\* = Soil samples collected from March 2012 excavation activities.

\*\* = TPH-DRO and TPH-GRO values were added together.

TABLE 1A  
 SOIL ANALYTICAL RESULTS SUMMARY - SEMI VOLATILE ORGANICS  
 SCHEIDT STATE 3-16J  
 API# 05-123-11541  
 SEC.16 T1N R67W 6PM  
 LAT/LONG: 40.047641/-104.891013  
 WELD COUNTY, COLORADO

Sample Location	Date	Approximate Depth (feet)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo(A) anthracene (mg/kg)	Benzo(B) fluoranthene (mg/kg)	Benzo(k) fluoranthene (mg/kg)	Benzo(A) pyrene (mg/kg)	Chrysene (mg/kg)	Dibenzo(A,H) anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3,C,D) pyrene (mg/kg)	Naphthalene (mg/kg)	Pyrene (mg/kg)
<b>COGCC Table 910-1 Regulatory Limit (mg/kg)</b>			<b>1,000</b>	<b>1,000</b>	<b>0.22</b>	<b>0.22</b>	<b>2.2</b>	<b>0.022</b>	<b>22</b>	<b>0.022</b>	<b>1,000</b>	<b>1,000</b>	<b>0.22</b>	<b>23</b>	<b>1,000</b>
MW-07	12/17/13	5.0-7.0	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.020	<0.0060

COGCC = Colorado Oil and Gas Conservation Commission

mg/kg = milligrams per kilogram

< = indicates result is less than the stated laboratory reporting limit

Note: Values presented in bold typeface exceed their respective COGCC Table 910-1 Regulatory Limit.

TABLE 1B  
 SOIL ANALYTICAL RESULTS SUMMARY - METALS AND INORGANICS  
 SCHEIDT STATE 3-16J  
 API NUMBER: 05-123-11541  
 SEC.16 T1N R67W 6PM  
 LAT/LONG: 40.047641/-104.891013  
 WELD COUNTY, COLORADO

Sample Location	Depth (feet)	Date	Metals											Inorganics			
			Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (III) (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)	Electrical Conductivity (EC)	Sodium Adsorption Ratio (SAR)	pH
<b>COGCC Table 910-1 Regulatory Limit (mg/kg) (May 2013)</b>			<b>0.39</b>	<b>15,000</b>	<b>70</b>	<b>120,000</b>	<b>23</b>	<b>3,100</b>	<b>400</b>	<b>23</b>	<b>1,600</b>	<b>390</b>	<b>390</b>	<b>23,000</b>	<b>&lt;4mmhos/cm</b>	<b>&lt;12^5</b>	<b>6-9</b>
MW-04	3.0-4.0	12/17/13	<b>5.9</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-07	5.0-7.0	12/17/13	<b>7.3</b>	50	0.46	16	<2.0	13	10	<0.020	12	2.4	<0.50	45	2.200	14	9.1

COGCC = Colorado Oil and Gas Conservation Commission

mg/kg = milligrams per kilogram

mmhos/cm = millimhos per centimeter

NA = Not analyzed

< = indicates result is less than the stated laboratory reporting limit

Note: Values presented in bold typeface exceed their respective COGCC Table 910-1 Regulatory Limit.

TABLE 2  
GROUNDWATER ELEVATION AND PARAMETER SUMMARY  
SCHEIDT STATE 3-16J  
API# 05-123-11541  
SEC.16 T1N R67W 6PM  
LAT/LONG: 40.047641/-104.891013  
WELD COUNTY, COLORADO

Sample Location	Date	Depth to Groundwater (feet)	TOC Elevation (feet)	Relative Groundwater Elevation (feet)	Dissolved Oxygen (mg/L)	Temperature (°C)	pH	Specific Conductance (µS/cm)	ORP (mV)
B-01	06/23/11	6.34	96.45	90.11	NM	NM	NM	NM	NM
	09/16/11	7.05		89.40	NM	NM	NM	NM	NM
	12/20/11	6.62		89.83	NM	NM	NM	NM	NM
	03/20/12	6.39		90.06	NM	NM	NM	NM	NM
	06/14/12	8.67		87.78	NM	NM	NM	NM	NM
	09/13/12	9.91		86.54	NM	NM	NM	NM	NM
	12/13/12	10.67		85.78	NM	NM	NM	NM	NM
	03/15/13	10.83		85.62	NM	NM	NM	NM	NM
	06/20/13	10.75		85.70	0.67	12.97	8.14	6,384	-351.4
	09/25/13	3.70		92.75	0.25	17.29	7.67	5,851	-355.3
	12/23/13								
	ABANDONED								
B-02	06/23/11	7.02	97.52	90.50	NM	NM	NM	NM	NM
	09/16/11	7.45		90.07	NM	NM	NM	NM	NM
	12/20/11	7.09		90.43	NM	NM	NM	NM	NM
	03/20/12	6.92		90.60	NM	NM	NM	NM	NM
	06/14/12	9.34		88.18	NM	NM	NM	NM	NM
	09/13/12	10.62		86.90	NM	NM	NM	NM	NM
	12/13/12	11.42		86.10	NM	NM	NM	NM	NM
	03/15/13	11.59		85.93	NM	NM	NM	NM	NM
	06/20/13	11.51		86.01	1.52	13.74	8.05	3,562	-184.5
	09/25/13	4.11		93.41	0.99	16.91	7.11	4,578	-11.9
	12/23/13								
	ABANDONED								
B-03	06/23/11	6.22	96.52	90.30	NM	NM	NM	NM	NM
	09/16/11	6.45		90.07	NM	NM	NM	NM	NM
	12/20/11	6.15		90.37	NM	NM	NM	NM	NM
	03/20/12	5.79		90.73	NM	NM	NM	NM	NM
	06/14/12	*8		88.52	NM	NM	NM	NM	NM
	09/13/12	9.50		87.02	NM	NM	NM	NM	NM
	12/13/12	10.28		86.24	NM	NM	NM	NM	NM
	03/15/13	10.42		86.10	NM	NM	NM	NM	NM
	06/20/13	10.31		86.21	0.37	14.48	7.80	4,899	-108.7
	09/25/13	3.05		93.47	0.39	17.87	6.88	7,390	62.7
	12/23/13								
	ABANDONED								
MW-01	06/23/11	4.97	95.75	90.78	NM	NM	NM	NM	NM
	09/16/11	7.27		88.48	NM	NM	NM	NM	NM
	12/20/11	6.77		88.98	NM	NM	NM	NM	NM
	03/20/12	6.28		89.47	NM	NM	NM	NM	NM
	06/14/12	8.65		87.10	NM	NM	NM	NM	NM
	09/13/12	9.88		85.87	NM	NM	NM	NM	NM
	12/13/12	10.46		85.29	NM	NM	NM	NM	NM
	03/15/13	10.60		85.15	NM	NM	NM	NM	NM
	06/20/13	10.63		85.12	1.46	15.22	8.13	4,925	-345.1
	09/25/13	3.59		92.16	0.61	18.13	7.07	5,952	-241.7
	12/23/13								
	ABANDONED								
MW-01R	12/23/13	8.18	95.76	87.58	0.66	10.4	6.93	6,210	144.8
	03/24/14	8.23		87.53	0.66	8.6	6.95	4,487	-57.0
	06/26/14	8.27		87.49	1.12	13.6	7.15	6,430	-123.0
	09/22/14	7.60		88.16	0.53	17.4	6.83	5,890	82.3
	12/24/14	8.56		87.20	0.63	11.6	6.94	6,312	1.5
	03/12/15	8.64		87.12	0.73	10.1	7.14	7,490	-78.1
MW-02	06/23/11	5.42	95.52	90.10	NM	NM	NM	NM	NM
	09/16/11	6.83		88.69	NM	NM	NM	NM	NM
	12/20/11	6.31		89.21	NM	NM	NM	NM	NM
	03/20/12	5.90		89.62	NM	NM	NM	NM	NM
	06/14/12	8.16		87.36	NM	NM	NM	NM	NM
	09/13/12	9.46		86.06	NM	NM	NM	NM	NM
	12/13/12	10.10		85.42	NM	NM	NM	NM	NM
	03/15/13	10.22		85.30	NM	NM	NM	NM	NM
	06/20/13								
	09/25/13								
DESTROYED									
MW-02R	12/23/13	8.10	95.59	87.49	1.56	10.2	7.02	7,136	141.1
	03/24/14	8.11		87.48	0.61	7.9	7.13	4,944	-72.3
	06/26/14	7.97		87.62	0.52	15.0	7.33	7,895	-118.0
	09/22/14	7.38		88.21	0.36	18.0	6.94	6,644	102.2
	12/24/14	8.46		87.13	0.95	11.0	7.1	6,739	-14.9
	03/12/15	8.53		87.06	0.52	10.0	7.33	7,606	-89.1

TABLE 2  
GROUNDWATER ELEVATION AND PARAMETER SUMMARY  
SCHEIDT STATE 3-16J  
API# 05-123-11541  
SEC.16 T1N R67W 6PM  
LAT/LONG: 40.047641/-104.891013  
WELD COUNTY, COLORADO

Sample Location	Date	Depth to Groundwater (feet)	TOC Elevation (feet)	Relative Groundwater Elevation (feet)	Dissolved Oxygen (mg/L)	Temperature (°C)	pH	Specific Conductance (µS/cm)	ORP (mV)
MW-03	06/23/11	7.98	*	NM	NM	NM	NM	NM	NM
	09/16/11	NM**		NM	NM	NM	NM	NM	NM
	12/20/11	7.26		NM	NM	NM	NM	NM	NM
	03/20/12	6.85		NM	NM	NM	NM	NM	NM
	06/14/12	9.56		NM	NM	NM	NM	NM	NM
	09/13/12	10.86		NM	NM	NM	NM	NM	NM
	12/13/12	11.24		NM	NM	NM	NM	NM	NM
	03/15/13	11.42		NM	NM	NM	NM	NM	NM
	06/20/13	NM***		NM	NM	NM	NM	NM	NM
	09/25/13	DESTROYED							
MW-03R	12/23/13	8.87	97.50	88.63	1.35	10.2	7.01	11,349	201.9
	03/24/14	9.01		88.49	0.75	7.2	7.04	6,524	-23.3
	06/26/14	9.02		88.48	0.72	13.4	7.16	10,807	6.1
	09/22/14	8.60		88.90	0.52	16.0	5.79	8,937	289.0
	12/24/14	9.47		88.03	1.77	10.9	7.02	9,298	10.3
	03/12/15	9.74		87.76	0.61	9.8	7.26	9,400	-13.3
MW-04	12/23/13	9.26	97.57	88.31	0.67	11.1	6.85	6,231	89.4
	03/24/14	9.39		88.18	0.66	8.3	6.99	3,992	-52.7
	06/26/14	9.05		88.52	1.01	15.2	7.37	5,651	-357.9
	09/22/14	8.60		88.97	0.37	18.1	6.98	4,740	138.1
	12/24/14	9.65		87.92	0.55	12.2	6.99	4,753	5.6
	03/12/15	9.84		87.73	0.51	11.0	7.17	5,800	-101.7
MW-05	12/23/13	7.36	94.33	86.97	0.68	9.4	7.01	8,724	139.8
	03/24/14	7.38		86.95	0.60	7.8	7.19	5,146	-63.7
	06/26/14	7.25		87.08	0.96	14.1	7.17	7,886	105.0
	09/22/14	6.78		87.55	0.37	17.6	6.98	7,323	98.3
	12/24/14	7.76		86.57	1.25	10.5	7.08	7,773	7.8
	03/12/15	7.85		86.48	0.83	9.6	7.27	9,861	9.5
MW-06	12/23/13	8.12	95.00	86.88	1.05	9.4	6.97	8,460	210.4
	03/24/14	8.12		86.88	0.87	7.3	7.02	5,092	79.2
	06/26/14	8.31		86.69	1.14	13.4	7.14	8,025	-8.6
	09/22/14	7.78		87.22	0.38	16.9	6.84	7,065	130.7
	12/24/14	8.57		86.43	0.76	10.8	6.99	7,654	11.8
	03/12/15	8.65		86.35	0.73	9.2	7.18	8,761	-29.8
MW-07	12/23/13	8.87	95.05	86.18	5.81	10.5	7.37	6,921	207.5
	03/24/14	8.06		86.99	1.52	7.3	7.29	4,517	82.5
	06/26/14	8.12		86.93	1.42	14.0	7.43	7,630	22.6
	09/22/14	7.69		87.36	0.69	16.4	6.99	5,928	100.6
	12/24/14	8.51		86.54	1.44	11.2	7.20	7,031	15.8
	03/12/15	8.62		86.43	0.50	9.4	7.32	8,758	-1.2
MW-08	12/23/13	6.29	93.89	87.60	0.42	12.2	7.57	4,249	-20.7
	03/24/14	5.37		88.52	0.55	9.6	7.80	2,203	-251.9
	06/26/14	4.02		89.87	1.19	15.7	7.80	3,137	-382.6
	09/22/14	3.98		89.91	0.29	19.0	7.41	3,655	-260.3
	12/24/14	5.55		88.34	0.40	12.6	8.03	3,358	-268.1
	03/12/15	5.94		87.95	0.55	11.4	7.44	5,632	-111.6
MW-09	12/23/13	9.06	98.60	89.54	1.27	10.4	6.88	10,299	240.0
	03/24/14	9.29		89.31	0.76	8.2	6.92	5,505	-48.3
	06/26/14	8.66		89.94	1.15	14.9	7.19	5,357	-227.9
	09/22/14	8.22		90.38	0.47	17.2	6.92	5,247	198.9
	12/24/14	9.65		88.95	0.46	11.8	7.05	5,909	-11.4
	03/12/15	9.92		88.68	0.57	10.6	7.33	5,667	-97.8
MW-10	09/22/14	4.10	92.23	88.13	0.53	16.4	7.89	6,019	17.3
	12/24/14	5.21		87.02	0.50	12.2	8.01	6,045	-41.6
	03/12/15	5.25		86.98	0.50	10.5	8.18	6,848	-144.3
MW-11	09/22/14	7.25	92.01	84.76	0.33	16.3	7.26	6,050	74.0
	12/24/14	8.02		83.99	0.51	11.4	7.15	8,994	8.3
	03/12/15	8.09		83.92	0.58	10.1	7.28	10,426	-88.5

TOC = Top of Casing  
mg/L = milligrams per liter  
°C = degrees Celsius  
µS/cm = microSiemens per centimeter  
mV = millivolts  
ORP = oxygen reduction potential  
NM = Not Measured

Note:  
Groundwater sample data collected prior to 6/20/13 was obtained by former consultants and provided to EAGLE.  
\* = Not surveyed. Generally due to restricted access by the tenant farmer.  
\*\* = Not measured due to tenant access restrictions related to planted crops.  
\*\*\* = Not measured due to soil being observed within monitoring well MW-03 to approximately 4 feet below ground surface.

**TABLE 3**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY**  
**SCHIEDT STATE 3-16J**  
**API# 05-123-11541**  
**SEC.16 T1N R67W 6PM**  
**LAT/LONG: 40.047641/-104.891013**  
**WELD COUNTY, COLORADO**

Sample Location (Latitude/Longitude)	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate mg/L)	Total Dissolved Solids (mg/L)
<b>COGCC Table 910-1 Regulatory Limits (µg/L)</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	<b>*</b>		<b>*</b>	<b>*</b>
B-01 (40.047520951/-104.890452343)	12/31/09	1,140	2,540	472	8,270	NA	NA	NA	NA
	03/16/10	278	280	126	1,011	NA	NA	NA	NA
	06/16/10	932	853	190	1,201	NA	NA	NA	NA
	09/14/10	834	482	156	794	NA	NA	NA	NA
	12/22/10	1,460	619	252	1,370	NA	NA	NA	NA
	03/23/11	857	441	211	866	NA	NA	NA	NA
	06/23/11	594	663	178	900	NA	NA	NA	NA
	09/16/11	982	848	264	1,440	NA	NA	NA	NA
	12/20/11	928	990	249	1,210	NA	NA	NA	NA
	03/20/12	432	707	193	965	NA	NA	NA	NA
	06/14/12	539	876	198	868	NA	NA	NA	NA
	09/13/12	851	926	241	1,250	NA	NA	NA	NA
	12/13/12	526	705	199	1,090	NA	NA	NA	NA
	03/15/13	72.5	171	48.0	209	251	1.1	5,770	3,010
	06/20/13	230	<500	120	440	NA	NA	NA	NA
	09/25/13	2,100	640	260	880	NA	NA	NA	NA
	12/23/13					ABANDONED			
B-02 (40.047633374/-104.890623958)	12/31/09	2,600	118	156	992	NA	NA	NA	NA
	03/16/10	241	4.03	82.8	210.82	NA	NA	NA	NA
	06/16/10	1,160	45	63.1	515.3	NA	NA	NA	NA
	09/14/10	3,050	39.3	235	1,120.6	NA	NA	NA	NA
	12/22/10	263	8.67	21.7	40.6	NA	NA	NA	NA
	03/23/11	431	50.2	35.5	307	NA	NA	NA	NA
	06/23/11	2,620	ND	101	556	NA	NA	NA	NA
	09/16/11	1,580	ND	96.2	276	NA	NA	NA	NA
	12/20/11	600	ND	21.1	47.8	NA	NA	NA	NA
	03/20/12	419	ND	11.1	30.0	NA	NA	NA	NA
	06/14/12	1,970	ND	69.6	518	NA	NA	NA	NA
	09/13/12	741	ND	28.1	108	NA	NA	NA	NA
	12/13/12	1,030	6.5	43	341	NA	NA	NA	NA
	03/15/13	282	6.0	5.6	11.3	155	0.11	2,300	675
	06/20/13	28	<5.0	<0.50	<1.5	NA	NA	NA	NA
	09/25/13	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	12/23/13					ABANDONED			
B-03 (40.047461568/-104.890534354)	12/31/09	573	2,530	480	6,300	NA	NA	NA	NA
	03/16/10	97.4	145	135	1,899	NA	NA	NA	NA
	06/16/10	96.9	166	67.1	659.5	NA	NA	NA	NA
	09/14/10	63.5	87.9	43.4	277.7	NA	NA	NA	NA
	12/22/10	74.1	170	38.1	299	NA	NA	NA	NA
	03/23/11	43.9	54.2	18.5	162	NA	NA	NA	NA
	06/23/11	77.4	165	37.0	286	NA	NA	NA	NA
	09/16/11	32.1	39.6	13.9	83.1	NA	NA	NA	NA
	12/20/11	25.7	15.2	9.4	89.4	NA	NA	NA	NA
	03/20/12	41.1	50.3	15.9	104	NA	NA	NA	NA
	06/14/12	18.9	6.0	8.1	40.6	NA	NA	NA	NA
	09/13/12	68.3	36.7	28.4	156	NA	NA	NA	NA
	12/13/12	125	126	48.0	322	NA	NA	NA	NA
	03/15/13	6.2	3.2	4.1	13.8	76.0	0.95	868	1,050
	06/20/13	23	<5.0	5.4	20	NA	NA	NA	NA
	09/25/13	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	12/23/13					ABANDONED			
MW-01 (40.047568565/-104.890316024)	03/23/11	434	81.1	404	4,770	NA	NA	NA	NA
	06/23/11	81.7	ND	58.3	592	NA	NA	NA	NA
	09/16/11	741	33.9	203	1,610	NA	NA	NA	NA
	12/20/11	997	41.1	238	2,310	NA	NA	NA	NA
	03/20/12	1,020	31.0	249	1,830	NA	NA	NA	NA
	06/14/12	2,330	101	594	4,670	NA	NA	NA	NA
	09/13/12	4,210	323	997	8,060	NA	NA	NA	NA
	12/13/12	3,720	193	878	7,450	NA	NA	NA	NA
	03/15/13	3,460	100	652	4,610	328	<0.05	3,820	39.7
	06/20/13	2,900	<500	610	3,800	NA	NA	NA	NA
	09/25/13	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
12/23/13					ABANDONED				
MW-01R (40.047569272, -104.890313648)	12/23/13	110	<5.0	120	2,900	500	<0.100	2,900	4,500
	03/24/14	82.0	<25.0	110	1,900	NA	NA	NA	NA
	06/26/14	1,100	<50	350	2,600	NA	NA	NA	NA
	09/22/14	250	<5.0	71	220	NA	NA	NA	NA
	12/24/14	1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
03/12/15	1.1	<5.0	<1.0	<3.0	NA	NA	NA	NA	
MW-02	03/23/11	990	1,810	981	4,000	NA	NA	NA	NA
	06/23/11	710	1,670	673	3,340	NA	NA	NA	NA
	09/16/11	878	3,170	1,070	5,850	NA	NA	NA	NA
	12/20/11	711	2,600	943	4,540	NA	NA	NA	NA
	03/20/12	1,080	2,990	994	4,990	NA	NA	NA	NA
	06/14/12	994	3,040	878	3,920	NA	NA	NA	NA
	09/13/12	157	847	1,260	4,040	NA	NA	NA	NA
	12/13/12	408	2,410	1,080	4,820	NA	NA	NA	NA
	03/15/13	723	1,880	1,050	3,690	369	<0.10	4,810	812
	06/20/13					DESTROYED			
	09/25/13					DESTROYED			

**TABLE 3**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY**  
**SCHIEDT STATE 3-16J**  
**API# 05-123-11541**  
**SEC.16 T1N R67W 6PM**  
**LAT/LONG: 40.047641/-104.891013**  
**WELD COUNTY, COLORADO**

Sample Location (Latitude/Longitude)	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
<b>COGCC Table 910-1 Regulatory Limits (µg/L)</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	<b>*</b>		<b>*</b>	<b>*</b>
MW-02R (40.0474647372, -104.890272763)	12/23/13	290	23	72	1,100	400	<0.100	3,000	7,500
	03/24/14	120	<5.0	<1.0	330	NA	NA	NA	NA
	06/26/14	96	<5.0	59	16	NA	NA	NA	NA
	09/22/14	6.3	<5.0	<1.0	<3.0	NA	NA	NA	NA
	12/24/14	1.3	<5.0	<1.0	<3.0	NA	NA	NA	NA
	03/12/15	5.9	<5.0	<1.0	<3.0	NA	NA	NA	NA
MW-03 (40.047636056/-104.890498365)	03/23/11	594	834	396	3,960	NA	NA	NA	NA
	06/23/11	1,370	87.1	174	1,760	NA	NA	NA	NA
	09/16/11								
	12/20/11	33.9	ND	11.9	31.6	NA	NA	NA	NA
	03/20/12	22.7	ND	7.4	19.7	NA	NA	NA	NA
	06/14/12	356	ND	49.0	195	NA	NA	NA	NA
	09/13/12	366	ND	58.2	114	NA	NA	NA	NA
	12/13/12	322	ND	74.7	84.6	NA	NA	NA	NA
	03/15/13	260	ND	44.7	13.1	176	<0.05	3,770	1,300
	06/20/13**	NS	NS	NS	NS	NS	NS	NS	NS
	9/25/13**								
MW-03R (40.0477228562, -104.890532095)	12/23/13	1.4	<5.0	1.8	19	500	0.140	6,700	11,000
	03/24/14	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	06/26/14	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	09/22/14	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	12/24/14	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	03/12/15	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
MW-04 (40.047601962, -104.890479611)	12/23/13	400	<5.0	170	1,900	350	<0.100	3,000	5,200
	03/24/14	41.0	<5.0	<1.0	54.0	NA	NA	NA	NA
	06/26/14	500	<25.0	390	780	NA	NA	NA	NA
	09/22/14	140	<5.0	54	11	NA	NA	NA	NA
	12/24/14	33	<5.0	11	19	NA	NA	NA	NA
	03/12/15	20	<5.0	6.2	5.1	NA	NA	NA	NA
MW-05 (40.0474680532, -104.890102978)	12/23/13	83	5.5	100	1,100	640	<0.100	4,400	7,200
	03/24/14	88.0	<25.0	140	500	NA	NA	NA	NA
	06/26/14	1.8	<5.0	27	48	NA	NA	NA	NA
	09/22/14	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	12/24/14	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	03/12/15	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
MW-06 (40.0476332972, -104.890112246)	12/23/13	<1.0	<5.0	<1.0	<3.0	370	<0.100	4,400	6,400
	03/24/14	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	06/26/14	4.2	<5.0	<1.0	<3.0	NA	NA	NA	NA
	09/22/14	6.8	<5.0	<1.0	<3.0	NA	NA	NA	NA
	12/24/14	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	03/12/15	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
MW-07 (40.0477241082, -104.890139103)	12/23/13	<1.0	<5.0	<1.0	<3.0	250	1,400	3,700	6,400
	03/24/14	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	06/26/14	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	09/22/14	160	<5.0	<1.0	<3.0	NA	NA	NA	NA
	12/24/14	70	<5.0	<1.0	<3.0	NA	NA	NA	NA
	03/12/15	42	<5.0	<1.0	<3.0	NA	NA	NA	NA
MW-08 (40.0474685392, -104.890580394)	12/23/13	250	2,900	380	7,200	210	1,200	1,500	3,200
	03/24/14	210	280	630	3,300	NA	NA	NA	NA
	06/26/14	230	1,500	550	2,000	NA	NA	NA	NA
	09/22/14	110	<25	310	<15	NA	NA	NA	NA
	12/24/14	380	360	340	620	NA	NA	NA	NA
	03/12/15	1.9	<5.0	<1.0	<3.0	NA	NA	NA	NA
MW-09 (40.0476552972, -104.890746751)	12/23/13	<1.0	<5.0	<1.0	24	530	<0.100	6,000	9,300
	03/24/14	1.1	<5.0	<1.0	<3.0	NA	NA	NA	NA
	06/26/14	1.2	<5.0	<1.0	<3.0	NA	NA	NA	NA
	09/22/14	3.6	<5.0	<1.0	<3.0	NA	NA	NA	NA
	12/24/14	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
	03/12/15	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA
MW-10 (40.047404538, -104.890185279)	09/22/14	11	<5.0	21	110	NA	NA	NA	NA
	12/24/14	13	<5.0	11	<3.0	NA	NA	NA	NA
	03/12/15	10	<5.0	<1.0	<3.0	NA	NA	NA	NA
MW-11 (40.047502197, -104.889919585)	09/22/14	340	<25	80	510	NA	NA	NA	NA
	12/24/14	2.5	<5.0	1.4	<3.0	NA	NA	NA	NA
	03/12/15	<1.0	<5.0	<1.0	<3.0	NA	NA	NA	NA

COGCC = Colorado Oil and Gas Conservation Commission  
µg/L = micrograms per liter  
mg/L = milligrams per liter  
< = indicates result is less than the stated laboratory reporting limit

NA = Not Analyzed  
ND = Not reported above the laboratory detection limit.  
NS = Not Sampled

Note:

Values presented in bold typeface exceed their respective COGCC Table 910-1 Regulatory Limit.

\* = <1.25 x background

Groundwater sample data collected prior to 6/20/13 was obtained by former consultants and provided to EAGLE.

\*\* Monitoring well MW-03 was located, but was observed to be filled with soil to approximately 4 feet below ground surface.

# **ATTACHMENT A**

## **Soil Boring Logs/Well Completion Diagrams**

# Boring Log/Well Completion Diagram: MW-01R

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0								Riser Stick Up/ Steel Casing		
0-2'								Bentonite Chips	0-2' potholed	
2-3'								2" Dia. Sch. 40 PVC Riser	2-3' hand dug	
3-4'									3-4' hand auger	
4-5'	CLAY - brown, soft, mod. plasticity, moist, N/O, N/S	CL	HA	1	-	1.8	--			
5-10'	CLAY - brown, soft, mod. plasticity, wet, N/O, N/S	CL	SS	1	50	6.3	1,1,1,1			
10-12'	CLAY - grayish brown, soft, mod. plasticity wet, slight HC odor, slight HC staining	CL	SS	2	40	15.9	2,3,3,1	10/20 Silica Sand Pack		
12'	BoB @ 12FT							2" Dia. Sch. 40 Slotted PVC (0.020")		
15'								2" End Cap		
20'										
25'										
30'										

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 12/17/13	SAND PACK INTERVAL (FT): 1-12
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-1
LOGGED BY: A. NEWBERRY	WELL SCREEN INTERVAL (FT): 2-12
DRILLING COMPANY/EQUIPMENT: ACI/CME 55	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 12	WELL DEPTH (FT): 12
PID INSTRUMENT: MINI RAE 2000	
TIME STARTED/COMPLETED: 1310/1345	
SAMPLE COLLECTION DEPTH/TIME: 3-4'/1340	



**EAGLE**  
 ENVIRONMENTAL  
 CONSULTING, INC.  
 4101 INCA STREET, DENVER, CO 80211  
 Ph: 303-433-0479 - F: 303-325-5449

# Boring Log/Well Completion Diagram: MW-02R

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0								<p>Riser Stick Up/ Steel Casing</p> <p>Bentonite Chips</p> <p>2" Dia. Sch. 40 PVC Riser</p> <p>10/20 Silica Sand Pack</p> <p>2" Dia. Sch. 40 Slotted PVC (0.020")</p> <p>2" End Cap</p>	0-2' potholed 2-3' hand dug 3-4' hand auger	
0-5	CLAY - brown, soft, mod. plasticity, moist, N/O, N/S	CL	HA	1	-	2.4	--			
5-10	CLAY - brown, soft, mod. plasticity, wet, N/O, N/S	CL	SS	1	60	5.6	1,2,2,3			
10-12	CLAY - brown, soft, mod. plasticity wet, slight HC odor, N/S	CL	SS	2	60	20.7	0,0,1,2			
12	BoB @ 12FT									

ft = feet  
BoB = Bottom of Boring  
N/O = No Odor  
N/S = No Staining  
bgs = Below ground surface

START/COMPLETION DATE: 12/17/13	SAND PACK INTERVAL (FT): 1-12
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-1
LOGGED BY: A. NEWBERRY	WELL SCREEN INTERVAL (FT): 2-12
DRILLING COMPANY/EQUIPMENT: ACI/CME 55	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 12	WELL DEPTH (FT): 12
PID INSTRUMENT: MINI RAE 2000	
TIME STARTED/COMPLETED: 1140/1220	
SAMPLE COLLECTION DEPTH/TIME: 3-4'/1225	



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ENVIRONMENTAL  
CONSULTING, INC.  
4101 INCA STREET, DENVER, CO 80211  
Ph: 303-433-0479 - F: 303-325-5449

# Boring Log/Well Completion Diagram: MW-03R

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0										
0-2'								Riser Stick Up/ Steel Casing	0-2' potholed	
2-3'								Bentonite Chips	2-3' hand dug	
3-4'									3-4' hand auger	
4-5'	CLAY - brown, soft, mod. plasticity, moist, N/O, N/S	CL	HA	1	--	2.4	--			
5-10'	CLAY - brown, soft, mod. plasticity, wet, N/O, N/S	CL	SS	1	35	1.3	0,0,0,1	2" Dia. Sch. 40 PVC Riser		
10-15'	CLAY - brown, soft, mod. plasticity, wet, N/O, N/S	CL	SS	2	50	3.9	0,0,1,1	10/20 Silica Sand Pack		
15-15'	No Recovery		SS	3	--	--	0,0,0,1	2" Dia. Sch. 40 Slotted PVC (0.020")		
15'	BoB @ 15FT							2" End Cap		
20'										
25'										
30'										

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 12/17/13	SAND PACK INTERVAL (FT): 3-15
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-3
LOGGED BY: A. NEWBERRY	WELL SCREEN INTERVAL (FT): 5-15
DRILLING COMPANY/EQUIPMENT: ACI/CME 55	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 15	WELL DEPTH (FT): 15
PID INSTRUMENT: MINI RAE 2000	
TIME STARTED/COMPLETED: 1450/1530	
SAMPLE COLLECTION DEPTH/TIME: 3-4'/1515	



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 ENVIRONMENTAL  
 CONSULTING, INC.  
 4101 INCA STREET, DENVER, CO 80211  
 Ph: 303-433-0479 - F: 303-325-5449

# Boring Log/Well Completion Diagram: MW-04

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0										
0-2'								Riser Stick Up/ Steel Casing	0-2' potholed	
2-3'								Bentonite Chips	2-3' hand dug	
3-4'								2" Dia. Sch. 40 PVC Riser	3-4' hand auger	
4-5'	CLAY - brown, soft, mod. plasticity, moist, N/O, N/S	CL	HA	1	-	6.4	--			
5-10'	CLAY - brown, soft, mod. plasticity, wet, N/O, N/S	CL	SS	1	20	9.2	2,2,3,3			
10-12'	CLAY - grayish brown, soft, mod. plasticity, wet, strong HC odor, weathred HC staining	CL	SS	2	30	53.3	0,1,1,3			
12'	BoB @ 12FT							10/20 Silica Sand Pack		
12-15'								2" Dia. Sch. 40 Slotted PVC (0.020")		
15-30'								2" End Cap		

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 12/17/13	SAND PACK INTERVAL (FT): 1-12
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-1
LOGGED BY: A. NEWBERRY	WELL SCREEN INTERVAL (FT): 2-12
DRILLING COMPANY/EQUIPMENT: ACI/CME 55	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 12	WELL DEPTH (FT): 12
PID INSTRUMENT: MINI RAE 2000	
TIME STARTED/COMPLETED: 1415/1445	
SAMPLE COLLECTION DEPTH/TIME: 3-4'/1440	



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# Boring Log/Well Completion Diagram: MW-05

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0										
0-2'								Riser Stick Up/ Steel Casing	0-2' potholed	
2-3'								Bentonite Chips	2-3' hand dug	
3-4'								2" Dia. Sch. 40 PVC Riser	3-4' hand auger	
4-5'	CLAY - brown, soft, mod. plasticity, moist, N/O, N/S	CL	HA	1	-	6.4	--			
5-10'	CLAY - brown, soft, mod. plasticity, wet, N/O, N/S	CL	SS	1	70	9.4	1,1,1,1			
10-12'	CLAY - brown, soft, mod. plasticity, wet, N/O, N/S	CL	SS	2	50	5.2	1,3,2,1	10/20 Silica Sand Pack		
12'	BoB @ 12FT							2" Dia. Sch. 40 Slotted PVC (0.020")		
15'								2" End Cap		
20'										
25'										
30'										

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 12/17/13	SAND PACK INTERVAL (FT): 1-12
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-1
LOGGED BY: A. NEWBERRY	WELL SCREEN INTERVAL (FT): 2-12
DRILLING COMPANY/EQUIPMENT: ACI/CME 55	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 12	WELL DEPTH (FT): 12
PID INSTRUMENT: MINI RAE 2000	
TIME STARTED/COMPLETED: 1050/1135	
SAMPLE COLLECTION DEPTH/TIME: 3-4'/1130	



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# Boring Log/Well Completion Diagram: MW-06

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0								Riser Stick Up/ Steel Casing		
0-5	CLAY - brown, soft, mod. plasticity, moist, N/O, N/S	CL	HA	1	--	5.1	-	Bentonite Chips	0-5' potholed 3-4' hand auger	
5	CLAY - brown, soft, moderate-high plasticity, moist to wet, slight HC odor, N/S	SS		1	100	44.1	2,4,4,5	2" Dia. Sch. 40 PVC Riser		
		CH								
10	CLAY - brown, soft, high plasticity, wet, N/O, N/S	SS		2	100	4.8	0,0,0,1	10/20 Silica Sand Pack		
								2" Dia. Sch. 40 Slotted PVC (0.020")		
12	BoB @ 12FT							2" End Cap		
15										
20										
25										
30										

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

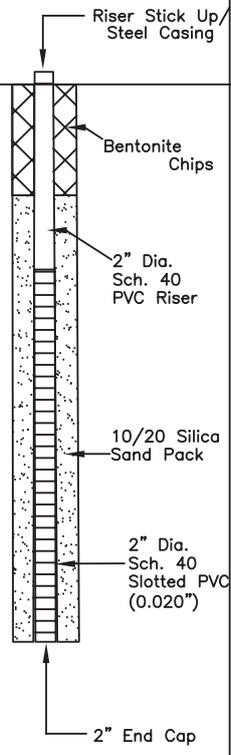
START/COMPLETION DATE: 12/17/13	SAND PACK INTERVAL (FT): 1-12
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-1
LOGGED BY: A. NEWBERRY	WELL SCREEN INTERVAL (FT): 2-12
DRILLING COMPANY/EQUIPMENT: ACI/CME 55	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 12	WELL DEPTH (FT): 12
PID INSTRUMENT: MINI RAE 2000	
TIME STARTED/COMPLETED: 1005/1040	
SAMPLE COLLECTION DEPTH/TIME: 3-4'/1015	



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# Boring Log/Well Completion Diagram: MW-07

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0										
0-5	sandy CLAY - light brown, soft, moderate plasticity, well-sorted with ~5-15% fine grained sand, moist, N/O, N/S		SS	1	60	59.9	3,2,4,5			0-5' potholed
5-10	No Recovery - sample only in tip CLAY - brown, wet, N/O, N/S	CL	SS	2	5	0.6	2,2,4,3			
10-15	No Recovery - water in split spoon		SS	3	0	-	2,1,1,2			
15	BoB @ 15FT									
15-30										



ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 12/17/13	SAND PACK INTERVAL (FT): 3-15
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-3
LOGGED BY: A. NEWBERRY	WELL SCREEN INTERVAL (FT): 5-15
DRILLING COMPANY/EQUIPMENT: ACI/CME 55	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 15	WELL DEPTH (FT): 15
PID INSTRUMENT: MINI RAE 2000	 <p><b>EAGLE</b>                  ENVIRONMENTAL                  CONSULTING, INC.                  4101 INCA STREET, DENVER, CO 80211                  Ph: 303-433-0479 - F: 303-325-5449</p>
TIME STARTED/COMPLETED: 0910/0958	
SAMPLE COLLECTION DEPTH/TIME: 3-4'/0921	

# Boring Log/Well Completion Diagram: MW-08

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0								Flush Mount Cover		
0-2'								Concrete/Steel Casing	0-2' potholed	
2-3'								Bentonite Chips	2-3' hand dug	
3-4'									3-4' hand auger	
4-5'	CLAY - brown, soft, mod. plasticity, moist, N/O, N/S	HA	1	-	2.4	--		2" Dia. Sch. 40 PVC Riser		
5-10'	CLAY - brown, soft, mod. plasticity, wet, N/O, N/S	SS	1	40	0.9	1,1,1,1				
10-15'	CLAY - grayish brown, soft, mod. plasticity, wet, very strong HC odor, black HC staining	SS	2	50	91.5	2,1,1,4		10/20 Silica Sand Pack		
15-20'	CLAY - gray and black, mod. stiff, mod. plasticity, wet, very strong HC odor, black HC staining	SS	3	30	116.3	1,1,1,1		2" Dia. Sch. 40 Slotted PVC (0.020")		
20-21'	No Recovery - black water in split spoon	SS	4	--	--	0,0,0,1				
20	BoB @ 19FT							2" End Cap		

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

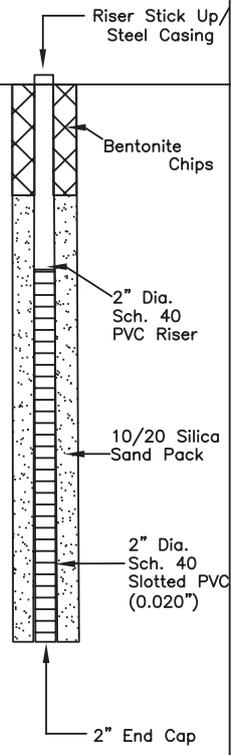
START/COMPLETION DATE: 12/17/13	SAND PACK INTERVAL (FT): 2-19
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 1-2
LOGGED BY: A. NEWBERRY	WELL SCREEN INTERVAL (FT): 4-19
DRILLING COMPANY/EQUIPMENT: ACI/CME 55	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 19	WELL DEPTH (FT): 19
PID INSTRUMENT: MINI RAE 2000	
TIME STARTED/COMPLETED: 1615/1715	
SAMPLE COLLECTION DEPTH/TIME: 3-4'/1505	



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# Boring Log/Well Completion Diagram: MW-09

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0										
0-2'	CLAY - brown, soft, mod. plasticity, moist, N/O, N/S	CL	HA	1	-	3.6	--			0-2' potholed
2-3'										2-3' hand dug
3-4'										3-4' hand auger
4-6'										6' completed pothole
5	clayey SAND - brown, slightly dense, fine-medium grained, well-sorted with ~40% clay, wet, N/O, N/S	SC	SS	1	40	2.9	1,3,5,9			
10	Sand (Stone?) - tannish brown, wet, poor consolidation, N/O, N/S	SS	SS	2	25	0.6	11,20,28,30			
15	SANDSTONE - brown, wet, N/O, N/S, (tip only)	SS	SS	3	5	0.4	26,25,19,22			
15	BoB @ 15FT									
20										
25										
30										



ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 12/17/13	SAND PACK INTERVAL (FT): 3-15
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-3
LOGGED BY: A. NEWBERRY	WELL SCREEN INTERVAL (FT): 5-15
DRILLING COMPANY/EQUIPMENT: ACI/CME 55	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 15	WELL DEPTH (FT): 15
PID INSTRUMENT: MINI RAE 2000	
TIME STARTED/COMPLETED: 1535/1610	
SAMPLE COLLECTION DEPTH/TIME: 3-4'/1540	



# Boring Log/Well Completion Diagram: SVE-01

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0									0-7' potholed 3-4' hand auger	
0-7	CLAY - brown, soft, moderate plasticity, moist, N/O, N/S,		HA	1	-	2.8	--			
7	BoB @ 7FT									
30										

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 12/17/13	SAND PACK INTERVAL (FT): 1-7
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-1
LOGGED BY: A. NEWBERRY	WELL SCREEN INTERVAL (FT): 2-7
DRILLING COMPANY/EQUIPMENT: ACI/CME 55	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 7	WELL DEPTH (FT): 7
PID INSTRUMENT: MINI RAE 2000	<p><b>EAGLE</b>                  ENVIRONMENTAL                  CONSULTING, INC.                  4101 INCA STREET, DENVER, CO 80211                  Ph: 303-433-0479 - F: 303-325-5449</p>
TIME STARTED/COMPLETED: 1210/1240	
SAMPLE COLLECTION DEPTH/TIME: 3-4'/1230	

# Boring Log/Well Completion Diagram: AS-01

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0								<p>Riser Stick Up/ Steel Casing</p> <p>Bentonite Chips</p> <p>2" Dia. Sch. 40 PVC Riser</p> <p>10/20 Silica Sand Pack</p> <p>2" Dia. Sch. 40 Slotted PVC (0.020")</p> <p>2" End Cap</p>	0-2' potholed 2-3' hand dug 3-4' hand auger	
0-5	CLAY - brown, soft, mod. plasticity, moist, N/O, N/S	CL	HA	1	-	6.4	--			
5-10	CLAY - brown, soft, mod. plasticity, wet, N/O, N/S	CL	SS	1	100	6.7	0,1,2,5			
10-12	CLAY - black and gray, soft, mod. plasticity, wet, strong HC odor, HC staining	CL	SS	2	100	59.6	1,3,3,1			
12	BoB @ 12FT									

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 12/17/13	SAND PACK INTERVAL (FT): 8-12
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-8
LOGGED BY: A. NEWBERRY	WELL SCREEN INTERVAL (FT): 10-12
DRILLING COMPANY/EQUIPMENT: ACI/CME 55	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 12	WELL DEPTH (FT): 12
PID INSTRUMENT: MINI RAE 2000	<p><b>EAGLE</b>                  ENVIRONMENTAL                  CONSULTING, INC.</p> <p>4101 INCA STREET, DENVER, CO 80211                  Ph: 303-433-0479 - F: 303-325-5449</p>
TIME STARTED/COMPLETED: 1230/1300	
SAMPLE COLLECTION DEPTH/TIME: 3-4'/1322	

# Boring Log/Well Completion Diagram: AS-02

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0									0-2' potholed 2-3' hand dug 3-4' hand auger	
0-5	CLAY - brown, soft, mod. plasticity, moist, N/O, N/S	HA	1	-	2.9	--				
5-10	CLAY - brown, soft, mod. plasticity, wet, N/O, N/S	CL	SS	1	30	8.7	1,1,1,1			
10-12	CLAY - black with gray spots, soft, mod. plasticity, wet, strong HC odor, slight HC staining	SS	2	50	1476	0,1,1,2				
12	BoB @ 12FT									

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 12/17/13	SAND PACK INTERVAL (FT): 8-12
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-8
LOGGED BY: A. NEWBERRY	WELL SCREEN INTERVAL (FT): 10-12
DRILLING COMPANY/EQUIPMENT: ACI/CME 55	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 12	WELL DEPTH (FT): 12
PID INSTRUMENT: MINI RAE 2000	
TIME STARTED/COMPLETED: 1350/1410	
SAMPLE COLLECTION DEPTH/TIME: 3-4'/1410	
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# Boring Log/Well Completion Diagram: MW-10

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0-5	Pothole.									
5-12.5	sandy CLAY - light brown, soft, high plasticity, well sorted with 15-20% sand, moist to wet, black/grey HC staining and strong odor @ 12-17.	DP	1	20	0.3	N/A				
		DP	2	100	1.0	N/A				
		DP	3	80	1.7	N/A				
12.5-14.5	clayey SAND - black/grey, fine to coarse grained, poorly sorted, loose to medium dense.	DP	4	100	796	N/A				
14.5-18	SAND - grey to light brown, very fine to fine grained, medium dense, well sorted, mod moist, N/O and N/S @ 17-18.	DP	5	100	3.8	N/A				
		DP	6	100	8.9	N/A				
18-30	BoB @ 18FT									

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 09/10/14	SAND PACK INTERVAL (FT): 2-14
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-2
LOGGED BY: E. VONDE	WELL SCREEN INTERVAL (FT): 4-14
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE 7822 DT	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 18	WELL DEPTH (FT): 14
PID INSTRUMENT: MINI RAE 2000	
TIME STARTED/COMPLETED: 1150/1330	
SAMPLE COLLECTION DEPTH/TIME: 12.5-15/1220	



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# Boring Log/Well Completion Diagram: MW-11

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0-4	Pothole.									
4-12	sandy CLAY - light brown, soft, high plasticity, well sorted with 30% fine grained sand, moist, black/grey HC staining @10.5-16, strong odor.	SC	DP	1	40	1.2	N/A			
			DP	2	40	1.2	N/A			
			DP	3	40	1141	N/A			
			DP	4	40	2011	N/A			
		SP	DP	5	100	490	N/A			
			DP	6	100	34.1	N/A			
12-16.5	clayey SAND - black/grey, medium to coarse grained, loose, poorly sorted with 10% clay, moist.									
16.5-18	Light brown, clay content increase and sand become fine grained.									
18-20	SANDSTONE BEDROCK - light brown/grey.									
20	BoB @ 20FT									

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 09/10/14	SAND PACK INTERVAL (FT): 2-14
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-2
LOGGED BY: E. VONDE	WELL SCREEN INTERVAL (FT): 4-14
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE 7822 DT	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 20	WELL DEPTH (FT): 14
PID INSTRUMENT: MINI RAE 2000	
TIME STARTED/COMPLETED: 0940/1100	
SAMPLE COLLECTION DEPTH/TIME: 12.5-15/1040	



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# Boring Log/Well Completion Diagram: AS-03

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0-5	Pothole.									
5-12	No sample collected.									
		DP	1	--	27.9	N/A				
		DP	2	--	3.3	N/A				
	BoB @ 12FT									

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 09/10/14	SAND PACK INTERVAL (FT): 8-12
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-8
LOGGED BY: E. VONDE	WELL SCREEN INTERVAL (FT): 10-12
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE 7822 DT	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 12	WELL DEPTH (FT): 12
PID INSTRUMENT: MINI RAE 2000	
TIME STARTED/COMPLETED: 1355/1445	
SAMPLE COLLECTION DEPTH/TIME: N/A	



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# Boring Log/Well Completion Diagram: SVE-02

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	0-7 - Pothole.									
5	No sample collected.									
7	BoB @ 7FT									

ft = feet  
 BoB = Bottom of Boring  
 N/O = No Odor  
 N/S = No Staining  
 bgs = Below ground surface

START/COMPLETION DATE: 09/10/14	SAND PACK INTERVAL (FT): 1-7
PROJECT: SCHEIDT STATE 3-16J	BENTONITE/GROUT INTERVAL (FT): 0-1
LOGGED BY: E. VONDE	WELL SCREEN INTERVAL (FT): 2-7
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE 7822 DT	WELL DIAMETER (IN): 2
BORING DEPTH (FT): 7	WELL DEPTH (FT): 7
PID INSTRUMENT: N/A	
TIME STARTED/COMPLETED: 1500/1600	
SAMPLE COLLECTION DEPTH/TIME: N/A	



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## **ATTACHMENT B**

### **Colorado Division of Water Resources Well Permits**

Form No. GWS-25

OFFICE OF THE STATE ENGINEER  
COLORADO DIVISION OF WATER RESOURCES  
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203  
(303) 866-3581

AS-1

EXST

WELL PERMIT NUMBER <u>294716</u> - -			
DIV. 1	WD 2	DES. BASIN	MD

APPLICANT

ENCANA OIL & GAS INC  
C/O EAGLE ENVIRONMENTAL  
4101 INCA ST  
DENVER, CO 80211-

(303) 433-0479

APPROVED WELL LOCATION

WELD COUNTY  
NE 1/4 SE 1/4 Section 16  
Township 1 N Range 67 W Sixth P.M.

DISTANCES FROM SECTION LINES

1423 Ft. from South Section Line  
1195 Ft. from East Section Line

UTM COORDINATES (Meters, Zone: 13, NAD83)

Easting: Northing:

PERMIT TO USE AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

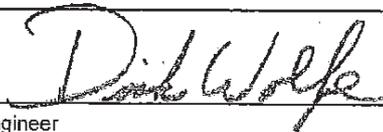
- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-92-602(3)(b)(l) for uses as described in CRS 37-92-602(1)(f). Use of this well is limited to monitoring water levels and/or water quality sampling.
- 4) Approved for the use of an existing well acknowledged for construction under monitoring hole notice MH-052133, and known as AS-01.
- 5) This well must be equipped with a locking cap or seal to prevent well contamination or possible hazards as an open well. The well must be kept capped and locked at all times except during sampling or measuring.
- 6) Records of water level measurements and water quality analyses shall be maintained by the well owner and submitted to the Division of Water Resources upon request.
- 7) Upon conclusion of the monitoring program the well owner shall plug this well in accordance with Rule 16 of the Water Well Construction Rules. A Well Abandonment Report must be completed and submitted to the Division of Water Resources within 60 days of plugging.
- 8) The owner shall mark the well in a conspicuous place with the well permit number and name of aquifer as appropriate, and shall take necessary means and precautions to preserve these markings.
- 9) This well must have been constructed by or under the supervision of a licensed well driller or other authorized individual according to the Water Well Construction Rules.
- 10) This well must be located not more than 200 feet from the location specified on this permit.

NOTE: Issuance of this permit does not guarantee that this well can be converted to a production well under a future permit. Additionally, pursuant to Rule 14.2 of the Water Well Construction Rules (2 CCR 402-2), monitoring holes constructed pursuant to a monitoring hole notice shall not be converted to a production well. (Upon obtaining a permit from the State Engineer, a monitoring hole may be converted to a monitoring well, recovery well for remediation of the aquifer, or a dewatering system for dewatering the aquifer.)

NOTICE: This permit has been approved subject to the following change: The UTM coordinate values provided with the permit application were not used and the well location was determined from the PLSS coordinates provided. You are hereby notified that you have the right to appeal the issuance of this permit, by filing a written request with this office within sixty (60) days of the date of issuance, pursuant to the State Administrative Procedures Act. (See Section 24-4-104 through 100, C.R.S.)

APPROVED  
SVJ

State Engineer



DATE ISSUED 06-20-2014



By

EXPIRATION DATE N/A

Receipt No. 3665227

Form No.  
GWS-25

**OFFICE OF THE STATE ENGINEER**  
**COLORADO DIVISION OF WATER RESOURCES**  
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203  
(303) 866-3581

AS-2

EXST

WELL PERMIT NUMBER 294732  
DIV. 1      WD 2      DES. BASIN      MD

APPLICANT

ENCANA OIL & GAS INC  
C/O EAGLE ENVIRONMENTAL  
4101 INCA ST  
DENVER, CO 80211-

(303) 433-0479

APPROVED WELL LOCATION

WELD COUNTY  
NE 1/4 SE 1/4 Section 16  
Township 1 N Range 67 W Sixth P.M.

DISTANCES FROM SECTION LINES

1392 Ft. from South Section Line  
1271 Ft. from East Section Line

UTM COORDINATES (Meters, Zone:13,NAD83)

Easting:                      Northing:

PERMIT TO USE AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

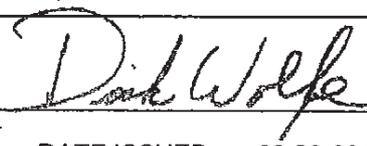
CONDITIONS OF APPROVAL

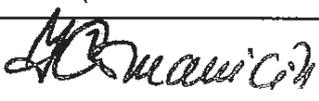
- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-92-602(3)(b)(l) for uses as described in CRS 37-92-602(1)(f). Use of this well is limited to monitoring water levels and/or water quality sampling.
- 4) Approved for the use of an existing well acknowledged for construction under monitoring hole notice MH-052133, and known as AS-02.
- 5) This well must be equipped with a locking cap or seal to prevent well contamination or possible hazards as an open well. The well must be kept capped and locked at all times except during sampling or measuring.
- 6) Records of water level measurements and water quality analyses shall be maintained by the well owner and submitted to the Division of Water Resources upon request.
- 7) Upon conclusion of the monitoring program the well owner shall plug this well in accordance with Rule 16 of the Water Well Construction Rules. A Well Abandonment Report must be completed and submitted to the Division of Water Resources within 60 days of plugging.
- 8) The owner shall mark the well in a conspicuous place with the well permit number and name of aquifer as appropriate, and shall take necessary means and precautions to preserve these markings.
- 9) This well must have been constructed by or under the supervision of a licensed well driller or other authorized individual according to the Water Well Construction Rules.
- 10) This well must be located not more than 200 feet from the location specified on this permit.

NOTE: Issuance of this permit does not guarantee that this well can be converted to a production well under a future permit. Additionally, pursuant to Rule 14.2 of the Water Well Construction Rules (2 CCR 402-2), monitoring holes constructed pursuant to a monitoring hole notice shall not be converted to a production well. (Upon obtaining a permit from the State Engineer, a monitoring hole may be converted to a monitoring well, recovery well for remediation of the aquifer, or a dewatering system for dewatering the aquifer.)

NOTICE: This permit has been approved subject to the following change: The UTM coordinate values provided with the permit application were not used and the well location was determined from the PLSS coordinates provided. You are hereby notified that you have the right to appeal the issuance of this permit, by filing a written request with this office within sixty (60) days of the date of issuance, pursuant to the State Administrative Procedures Act. (See Section 24-4-104 through 100, C.R.S.)

APPROVED  
SVJ

  
State Engineer

  
By

Receipt No. 3665230A

DATE ISSUED 06-20-2014

EXPIRATION DATE N/A

Form No.  
GWS-25

**OFFICE OF THE STATE ENGINEER**  
**COLORADO DIVISION OF WATER RESOURCES**  
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203  
(303) 866-3581

MW-1R

EXST

WELL PERMIT NUMBER 294733 - - -  
DIV. 1      WD2      DES. BASIN      MD

APPLICANT

ENCANA OIL & GAS INC  
C/O EAGLE ENVIRONMENTAL  
4101 INCA ST  
DENVER, CO 80211-

(303) 433-0479

APPROVED WELL LOCATION

WELD COUNTY  
NE 1/4 SE 1/4 Section 16  
Township 1 N Range 67 W Sixth P.M.

DISTANCES FROM SECTION LINES

1378 Ft. from South Section Line  
1217 Ft. from East Section Line

UTM COORDINATES (Meters, Zone:13,NAD83)

Easting:                      Northing:

PERMIT TO USE AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

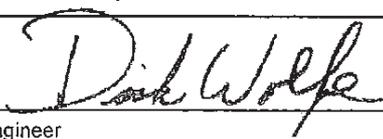
CONDITIONS OF APPROVAL

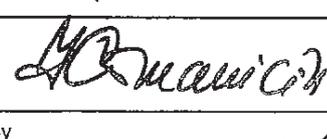
- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-92-602(3)(b)(I) for uses as described in CRS 37-92-602(1)(f). Use of this well is limited to monitoring water levels and/or water quality sampling.
- 4) Approved for the use of an existing well acknowledged for construction under monitoring hole notice MH-052133, and known as MW-01R.
- 5) This well must be equipped with a locking cap or seal to prevent well contamination or possible hazards as an open well. The well must be kept capped and locked at all times except during sampling or measuring.
- 6) Records of water level measurements and water quality analyses shall be maintained by the well owner and submitted to the Division of Water Resources upon request.
- 7) Upon conclusion of the monitoring program the well owner shall plug this well in accordance with Rule 16 of the Water Well Construction Rules. A Well Abandonment Report must be completed and submitted to the Division of Water Resources within 60 days of plugging.
- 8) The owner shall mark the well in a conspicuous place with the well permit number and name of aquifer as appropriate, and shall take necessary means and precautions to preserve these markings.
- 9) This well must have been constructed by or under the supervision of a licensed well driller or other authorized individual according to the Water Well Construction Rules.
- 10) This well must be located not more than 200 feet from the location specified on this permit.

NOTE: Issuance of this permit does not guarantee that this well can be converted to a production well under a future permit. Additionally, pursuant to Rule 14.2 of the Water Well Construction Rules (2 CCR 402-2), monitoring holes constructed pursuant to a monitoring hole notice shall not be converted to a production well. (Upon obtaining a permit from the State Engineer, a monitoring hole may be converted to a monitoring well, recovery well for remediation of the aquifer, or a dewatering system for dewatering the aquifer.)

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APPROVED  
SVJ

  
State Engineer

  
By

Receipt No. 3665230B

DATE ISSUED 06-20-2014

EXPIRATION DATE N/A

Form No. GWS-25

OFFICE OF THE STATE ENGINEER  
COLORADO DIVISION OF WATER RESOURCES  
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203  
(303) 866-3581

MW-2R

EXST

WELL PERMIT NUMBER		294734	
DIV. 1	WD 2	DES. BASIN	MD

APPLICANT

ENCANA OIL & GAS INC  
C/O EAGLE ENVIRONMENTAL  
4101 INCA ST  
DENVER, CO 80211-

(303) 433-0479

APPROVED WELL LOCATION

WELD COUNTY  
NE 1/4 SE 1/4 Section 16  
Township 1 N Range 67 W Sixth P.M.

DISTANCES FROM SECTION LINES

1385 Ft. from South Section Line  
1217 Ft. from East Section Line

UTM COORDINATES (Meters, Zone: 13, NAD83)

Easting: Northing:

PERMIT TO USE AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

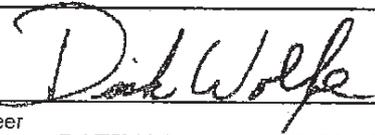
CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-92-602(3)(b)(I) for uses as described in CRS 37-92-602(1)(f). Use of this well is limited to monitoring water levels and/or water quality sampling.
- 4) Approved for the use of an existing well acknowledged for construction under monitoring hole notice MH-052133, and known as MW-02R.
- 5) This well must be equipped with a locking cap or seal to prevent well contamination or possible hazards as an open well. The well must be kept capped and locked at all times except during sampling or measuring.
- 6) Records of water level measurements and water quality analyses shall be maintained by the well owner and submitted to the Division of Water Resources upon request.
- 7) Upon conclusion of the monitoring program the well owner shall plug this well in accordance with Rule 16 of the Water Well Construction Rules. A Well Abandonment Report must be completed and submitted to the Division of Water Resources within 60 days of plugging.
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- 9) This well must have been constructed by or under the supervision of a licensed well driller or other authorized individual according to the Water Well Construction Rules.
- 10) This well must be located not more than 200 feet from the location specified on this permit.

NOTE: Issuance of this permit does not guarantee that this well can be converted to a production well under a future permit. Additionally, pursuant to Rule 14.2 of the Water Well Construction Rules (2 CCR 402-2), monitoring holes constructed pursuant to a monitoring hole notice shall not be converted to a production well. (Upon obtaining a permit from the State Engineer, a monitoring hole may be converted to a monitoring well, recovery well for remediation of the aquifer, or a dewatering system for dewatering the aquifer.)

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APPROVED  
SVJ

  
State Engineer



Receipt No. 3665230C

DATE ISSUED 06-20-2014

By EXPIRATION DATE N/A

Form No. GWS-25

OFFICE OF THE STATE ENGINEER  
COLORADO DIVISION OF WATER RESOURCES  
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203  
(303) 866-3581

11/11-32

EXST

WELL PERMIT NUMBER		294735	
DIV. 1	WD2	DES. BASIN	MD

APPLICANT

ENCANA OIL & GAS INC  
C/O EAGLE ENVIRONMENTAL  
4101 INCA ST  
DENVER, CO 80211-

(303) 433-0479

APPROVED WELL LOCATION

WELD COUNTY  
NE 1/4 SE 1/4 Section 16  
Township 1 N Range 67 W Sixth P.M.

DISTANCES FROM SECTION LINES

1457 Ft. from South Section Line  
1202 Ft. from East Section Line

UTM COORDINATES (Meters, Zone: 13, NAD83)

Easting: Northing:

PERMIT TO USE AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

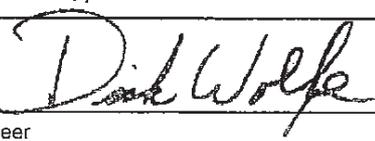
CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-92-602(3)(b)(I) for uses as described in CRS 37-92-602(1)(f). Use of this well is limited to monitoring water levels and/or water quality sampling.
- 4) Approved for the use of an existing well acknowledged for construction under monitoring hole notice MH-052133, and known as MW-03R.
- 5) This well must be equipped with a locking cap or seal to prevent well contamination or possible hazards as an open well. The well must be kept capped and locked at all times except during sampling or measuring.
- 6) Records of water level measurements and water quality analyses shall be maintained by the well owner and submitted to the Division of Water Resources upon request.
- 7) Upon conclusion of the monitoring program the well owner shall plug this well in accordance with Rule 16 of the Water Well Construction Rules. A Well Abandonment Report must be completed and submitted to the Division of Water Resources within 60 days of plugging.
- 8) The owner shall mark the well in a conspicuous place with the well permit number and name of aquifer as appropriate, and shall take necessary means and precautions to preserve these markings.
- 9) This well must have been constructed by or under the supervision of a licensed well driller or other authorized individual according to the Water Well Construction Rules.
- 10) This well must be located not more than 200 feet from the location specified on this permit.

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APPROVED  
SVJ

  
State Engineer

  
By

Receipt No. 3665230D

DATE ISSUED 06-20-2014

EXPIRATION DATE N/A

Form No. GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

MW-4

EXST

WELL PERMIT NUMBER 294736
DIV. 1 WD2 DES. BASIN MD

APPLICANT

ENCANA OIL & GAS INC
C/O EAGLE ENVIRONMENTAL
4101 INCA ST
DENVER, CO 80211-

(303) 433-0479

APPROVED WELL LOCATION

WELD COUNTY
NE 1/4 SE 1/4 Section 16
Township 1 N Range 67 W Sixth P.M.

DISTANCES FROM SECTION LINES

1404 Ft. from South Section Line
1187 Ft. from East Section Line

UTM COORDINATES (Meters, Zone: 13, NAD83)

Easting: Northing:

PERMIT TO USE AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
3) Approved pursuant to CRS 37-92-602(3)(b)(I) for uses as described in CRS 37-92-602(1)(f). Use of this well is limited to monitoring water levels and/or water quality sampling.
4) Approved for the use of an existing well acknowledged for construction under monitoring hole notice MH-052133, and known as MW-04.
5) This well must be equipped with a locking cap or seal to prevent well contamination or possible hazards as an open well. The well must be kept capped and locked at all times except during sampling or measuring.
6) Records of water level measurements and water quality analyses shall be maintained by the well owner and submitted to the Division of Water Resources upon request.
7) Upon conclusion of the monitoring program the well owner shall plug this well in accordance with Rule 16 of the Water Well Construction Rules. A Well Abandonment Report must be completed and submitted to the Division of Water Resources within 60 days of plugging.
8) The owner shall mark the well in a conspicuous place with the well permit number and name of aquifer as appropriate, and shall take necessary means and precautions to preserve these markings.
9) This well must have been constructed by or under the supervision of a licensed well driller or other authorized individual according to the Water Well Construction Rules.
10) This well must be located not more than 200 feet from the location specified on this permit.

NOTE: Issuance of this permit does not guarantee that this well can be converted to a production well under a future permit. Additionally, pursuant to Rule 14.2 of the Water Well Construction Rules (2 CCR 402-2), monitoring holes constructed pursuant to a monitoring hole notice shall not be converted to a production well. (Upon obtaining a permit from the State Engineer, a monitoring hole may be converted to a monitoring well, recovery well for remediation of the aquifer, or a dewatering system for dewatering the aquifer.)

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APPROVED SVJ

State Engineer (Signature: Dirk Wolfe)

By (Signature: A. Brumic)

Receipt No. 3665230E

DATE ISSUED 06-20-2014

By EXPIRATION DATE N/A



Form No. GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

MW-6

EXST

WELL PERMIT NUMBER 294738
DIV. 1 WD2 DES. BASIN MD

APPLICANT

ENCANA OIL & GAS INC
C/O EAGLE ENVIRONMENTAL
4101 INCA ST
DENVER, CO 80211-

(303) 433-0479

APPROVED WELL LOCATION

WELD COUNTY
NE 1/4 SE 1/4 Section 16
Township 1 N Range 67 W Sixth P.M.

DISTANCES FROM SECTION LINES

1415 Ft. from South Section Line
1106 Ft. from East Section Line

UTM COORDINATES (Meters, Zone: 13, NAD83)

Easting: Northing:

PERMIT TO USE AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights.
2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
3) Approved pursuant to CRS 37-92-602(3)(b)(f) for uses as described in CRS 37-92-602(1)(f). Use of this well is limited to monitoring water levels and/or water quality sampling.
4) Approved for the use of an existing well acknowledged for construction under monitoring hole notice MH-052133, and known as MW-06.
5) This well must be equipped with a locking cap or seal to prevent well contamination or possible hazards as an open well. The well must be kept capped and locked at all times except during sampling or measuring.
6) Records of water level measurements and water quality analyses shall be maintained by the well owner and submitted to the Division of Water Resources upon request.
7) Upon conclusion of the monitoring program the well owner shall plug this well in accordance with Rule 16 of the Water Well Construction Rules. A Well Abandonment Report must be completed and submitted to the Division of Water Resources within 60 days of plugging.
8) The owner shall mark the well in a conspicuous place with the well permit number and name of aquifer as appropriate, and shall take necessary means and precautions to preserve these markings.
9) This well must have been constructed by or under the supervision of a licensed well driller or other authorized individual according to the Water Well Construction Rules.
10) This well must be located not more than 200 feet from the location specified on this permit.

NOTE: Issuance of this permit does not guarantee that this well can be converted to a production well under a future permit. Additionally, pursuant to Rule 14.2 of the Water Well Construction Rules (2 CCR 402-2), monitoring holes constructed pursuant to a monitoring hole notice shall not be converted to a production well. (Upon obtaining a permit from the State Engineer, a monitoring hole may be converted to a monitoring well, recovery well for remediation of the aquifer, or a dewatering system for dewatering the aquifer.)

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APPROVED SVJ

State Engineer (Signature: Dirk Wolfe)

By (Signature: M. B. ...)

Receipt No. 3665230G

DATE ISSUED 06-20-2014

By EXPIRATION DATE N/A

Form No. GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

1000-7

EXST

WELL PERMIT NUMBER 294739
DIV. 1 WD2 DES. BASIN MD

APPLICANT

ENCANA OIL & GAS INC
C/O EAGLE ENVIRONMENTAL
4101 INCA ST
DENVER, CO 80211-

(303) 433-0479

APPROVED WELL LOCATION

WELD COUNTY
NE 1/4 SE 1/4 Section 16
Township 1 N Range 67 W Sixth P.M.

DISTANCES FROM SECTION LINES

1452 Ft. from South Section Line
1136 Ft. from East Section Line

UTM COORDINATES (Meters, Zone:13, NAD83)

Easting: Northing:

PERMIT TO USE AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights.
2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
3) Approved pursuant to CRS 37-92-602(3)(b)(f) for uses as described in CRS 37-92-602(1)(f). Use of this well is limited to monitoring water levels and/or water quality sampling.
4) Approved for the use of an existing well acknowledged for construction under monitoring hole notice MH-052133, and known as MW-07.
5) This well must be equipped with a locking cap or seal to prevent well contamination or possible hazards as an open well. The well must be kept capped and locked at all times except during sampling or measuring.
6) Records of water level measurements and water quality analyses shall be maintained by the well owner and submitted to the Division of Water Resources upon request.
7) Upon conclusion of the monitoring program the well owner shall plug this well in accordance with Rule 16 of the Water Well Construction Rules. A Well Abandonment Report must be completed and submitted to the Division of Water Resources within 60 days of plugging.
8) The owner shall mark the well in a conspicuous place with the well permit number and name of aquifer as appropriate, and shall take necessary means and precautions to preserve these markings.
9) This well must have been constructed by or under the supervision of a licensed well driller or other authorized individual according to the Water Well Construction Rules.
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APPROVED SVJ

State Engineer

[Signature of David Wolfe]

[Signature]

By

Receipt No. 3665230H

DATE ISSUED 06-20-2014

EXPIRATION DATE N/A

Form No. GWS-25

OFFICE OF THE STATE ENGINEER  
COLORADO DIVISION OF WATER RESOURCES  
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203  
(303) 866-3581

MW-8

EXST

WELL PERMIT NUMBER		294740	
DIV. 1	WD2	DES. BASIN	MD

APPLICANT

ENCANA OIL & GAS INC  
C/O EAGLE ENVIRONMENTAL  
4101 INCA ST  
DENVER, CO 80211-

(303) 433-0479

APPROVED WELL LOCATION

WELD COUNTY

NE 1/4 SE 1/4 Section 16  
Township 1 N Range 67 W Sixth P.M.

DISTANCES FROM SECTION LINES

1382 Ft. from South Section Line  
1226 Ft. from East Section Line

UTM COORDINATES (Meters, Zone: 13, NAD83)

Easting: Northing:

PERMIT TO USE AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

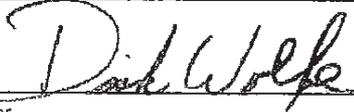
CONDITIONS OF APPROVAL

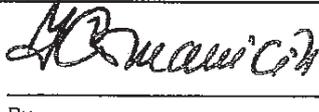
- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-92-602(3)(b)(I) for uses as described in CRS 37-92-602(1)(f). Use of this well is limited to monitoring water levels and/or water quality sampling.
- 4) Approved for the use of an existing well acknowledged for construction under monitoring hole notice MH-052133, and known as MW-08.
- 5) This well must be equipped with a locking cap or seal to prevent well contamination or possible hazards as an open well. The well must be kept capped and locked at all times except during sampling or measuring.
- 6) Records of water level measurements and water quality analyses shall be maintained by the well owner and submitted to the Division of Water Resources upon request.
- 7) Upon conclusion of the monitoring program the well owner shall plug this well in accordance with Rule 16 of the Water Well Construction Rules. A Well Abandonment Report must be completed and submitted to the Division of Water Resources within 60 days of plugging.
- 8) The owner shall mark the well in a conspicuous place with the well permit number and name of aquifer as appropriate, and shall take necessary means and precautions to preserve these markings.
- 9) This well must have been constructed by or under the supervision of a licensed well driller or other authorized individual according to the Water Well Construction Rules.
- 10) This well must be located not more than 200 feet from the location specified on this permit.

NOTE: Issuance of this permit does not guarantee that this well can be converted to a production well under a future permit. Additionally, pursuant to Rule 14.2 of the Water Well Construction Rules (2 CCR 402-2), monitoring holes constructed pursuant to a monitoring hole notice shall not be converted to a production well. (Upon obtaining a permit from the State Engineer, a monitoring hole may be converted to a monitoring well, recovery well for remediation of the aquifer, or a dewatering system for dewatering the aquifer.)

NOTICE: This permit has been approved subject to the following change: The UTM coordinate values provided with the permit application were not used and the well location was determined from the PLSS coordinates provided. You are hereby notified that you have the right to appeal the issuance of this permit, by filing a written request with this office within sixty (60) days of the date of issuance, pursuant to the State Administrative Procedures Act. (See Section 24-4-104 through 106, C.R.S.)

APPROVED  
SVJ

  
State Engineer

  
By

Receipt No. 36652301

DATE ISSUED 06-20-2014

EXPIRATION DATE N/A

Form No. GWS-25

OFFICE OF THE STATE ENGINEER  
COLORADO DIVISION OF WATER RESOURCES  
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203  
(303) 866-3581

MW-9

EXST

WELL PERMIT NUMBER		294741		-	-
DIV. 1	WD 2	DES. BASIN	MD		

APPLICANT

ENCANA OIL & GAS INC  
C/O EAGLE ENVIRONMENTAL  
4101 INCA ST  
DENVER, CO 80211-

(303) 433-0479

APPROVED WELL LOCATION

WELD COUNTY  
NE 1/4 SE 1/4 Section 16  
Township 1 N Range 67 W Sixth P.M.

DISTANCES FROM SECTION LINES

1440 Ft. from South Section Line  
1242 Ft. from East Section Line

UTM COORDINATES (Meters, Zone: 13, NAD83)

Easting: Northing:

PERMIT TO USE AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-92-602(3)(b)(I) for uses as described in CRS 37-92-602(1)(f). Use of this well is limited to monitoring water levels and/or water quality sampling.
- 4) Approved for the use of an existing well acknowledged for construction under monitoring hole notice MH-052133, and known as MW-09.
- 5) This well must be equipped with a locking cap or seal to prevent well contamination or possible hazards as an open well. The well must be kept capped and locked at all times except during sampling or measuring.
- 6) Records of water level measurements and water quality analyses shall be maintained by the well owner and submitted to the Division of Water Resources upon request.
- 7) Upon conclusion of the monitoring program the well owner shall plug this well in accordance with Rule 16 of the Water Well Construction Rules. A Well Abandonment Report must be completed and submitted to the Division of Water Resources within 60 days of plugging.
- 8) The owner shall mark the well in a conspicuous place with the well permit number and name of aquifer as appropriate, and shall take necessary means and precautions to preserve these markings.
- 9) This well must have been constructed by or under the supervision of a licensed well driller or other authorized individual according to the Water Well Construction Rules.
- 10) This well must be located not more than 200 feet from the location specified on this permit.

NOTE: Issuance of this permit does not guarantee that this well can be converted to a production well under a future permit. Additionally, pursuant to Rule 14.2 of the Water Well Construction Rules (2 CCR 402-2), monitoring holes constructed pursuant to a monitoring hole notice shall not be converted to a production well. (Upon obtaining a permit from the State Engineer, a monitoring hole may be converted to a monitoring well, recovery well for remediation of the aquifer, or a dewatering system for dewatering the aquifer.)

NOTICE: This permit has been approved subject to the following change: The UTM coordinate values provided with the permit application were not used and the well location was determined from the PLSS coordinates provided. You are hereby notified that you have the right to appeal the issuance of this permit, by filing a written request with this office within sixty (60) days of the date of issuance, pursuant to the State Administrative Procedures Act. (See Section 24-4-104 through 106, C.R.S.)

APPROVED  
SVJ

State Engineer

By

Receipt No. 3665230J

DATE ISSUED 06-20-2014

EXPIRATION DATE N/A

Scheidt state 3-16J

GWS-51  
3/2013

### NOTICE OF INTENT TO CONSTRUCT MONITORING HOLE(S)

Please type or print legibly in black or blue ink or file online @ [dwrpermitsonline@state.co.us](mailto:dwrpermitsonline@state.co.us)  
COLORADO DIVISION OF WATER RESOURCES-1313 SHERMAN ST-STE 821-DENVER-CO-80202  
PHONE: 303-866-3581--FAX 303-866-3589 WEB: [www.water.state.co.us](http://www.water.state.co.us)

RECEIVED  
SEP 05 2014  
STATE ENGINEER  
COLORADO

Well Owner Name(s): Encana Oil and Gas Inc.  
Address : 3601 Stagecoach Road, Longmont, CO 80504  
Phone (area code & no.): 303-774-3900  
Landowner's Name: Patrick and April Thorpe  
Please check one and complete as indicated including contact info:  
 Water Well Driller Licensed in Colorado - Lic. No. \_\_\_\_\_  
 Professional Engineer Registered in Colorado - Reg. No. \_\_\_\_\_  
 Professional Geologist per CRS 34-1-201(3)  
 Other - anyone directly employed by or under the supervision of a licensed driller, registered professional engineer or professional geologist  
Contact / Company Eagle Environmental Consulting, Inc.  
Address 4101 Inca Street  
City, State & Zip Denver, CO 80211  
Phone 303-433-0479 Fax 303-325-5449  
Print Name: Bethany Carl  
Sign or enter full name here: Bethany Carl

Location: NE  $\frac{1}{4}$  SE  $\frac{1}{4}$ , Section 16  
Township 1  N  S, Range 67  E  W, 6 PM  
County Weld  
Subdivision \_\_\_\_\_  
Lot: \_\_\_\_\_ Block \_\_\_\_\_ Filing Unit: \_\_\_\_\_  
Site/Property Address Lat./LONG  
40.047641/-104.891013 ✓  
GPS Location in UTM format (optional):  
Set GPS unit to true north, datum NAD83, and use meters for the distance units,  Zone 12 or  Zone 13.  
Easting \_\_\_\_\_ Northing \_\_\_\_\_  
# of Monitoring Hole(s) to be constructed: 4  
Estimated Depth 17 Ft., Aquifer Type III  
Purpose of Monitoring Hole(s) groundwater monitoring  
Anticipated Date of Construction (mm/dd/yyyy) 09/10/2014  
Date Notice Submitted (mm/dd/yyyy): 09/05/2014  
(Must be at least 3 days prior to construction)

#### ACKNOWLEDGEMENT FROM STATE ENGINEER'S OFFICE FOR OFFICE USE ONLY

052882

- MH

PROCESSED BY

*[Signature]*

Div.

1

WD

2

BAS

MD

DATE ACKNOWLEDGED

09-08-14

#### CONDITIONS OF MONITORING HOLE ACKNOWLEDGEMENT

A COPY OF THE WRITTEN NOTICE OR ACKNOWLEDGEMENT SHALL BE AVAILABLE AT THE DRILLING SITE.

- 1) Notice was provided to the State Engineer at least 3 days prior to construction of monitoring & observation hole(s).
- 2) Construction of the hole(s) must be completed within 90 days of the date notice was given to the State Engineer. Testing and/or pumping shall not exceed a total of 200 hours unless prior written approval is obtained from the State Engineer. Water diverted during testing shall not be used for beneficial purposes. The owner of the hole(s) is responsible for obtaining permit(s) and complying with all rules and regulations pertaining to the discharge of fluids produced during testing
- 3) All work must comply with the Water Well Construction Rules, 2 CCR 402-2. Minimum construction standards must be met or a variance obtained. Standard permit application and work report forms, including online filing instructions, are found on the DWR website at <http://www.water.state.co.us>. Well Construction and Test Reports (GWS-31) must be completed for each hole drilled. The licensed contractor or authorized individual must submit the completed forms to this office within 60 days of monitoring hole completion
- 4) Unless a well permit is obtained, or variance approved, the hole(s) must be plugged and sealed within one (1) year after construction. An Abandonment Report (form GWS-9) must be submitted within 60 days of plugging & sealing. The above MH acknowledgement number, owner's structure name, and owner's name and address must be provided on all well permit application(s), well construction and abandonment reports
- 5) The owner of the hole(s) shall maintain records of water quality testing and submit this data to the State Engineer upon request
- 6) A MONITORING HOLE CANNOT BE CONVERTED TO A PRODUCTION WATER WELL, except for purposes of remediation (recovery) or as a permanent dewatering system, if constructed in accordance with the Water Well Construction Rules and policies of the State Engineer.
- 7) IF HOLES WILL NOT BE CONSTRUCTED UNDER THIS NOTICE WITHIN 90 DAYS, PLEASE WRITE, "NO HOLES CONSTRUCTED" ON A COPY OF THE ACKNOWLEDGED NOTICE WITH THE FILE NUMBER AND FAX THE COPY TO THE DIVISION OF WATER RESOURCES.

THIS ACKNOWLEDGEMENT OF NOTICE DOES NOT INDICATE THAT WELL PERMIT(S) CAN BE APPROVED.

(Use above space for labels or additional conditions as needed)







## **ATTACHMENT C**

### **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

Blake Ford / Martin Eckert III  
EnCana Oil & Gas - Longmont, CO  
3601 Stagecoach Rd  
Longmont, CO 80504

### Report Summary

Wednesday July 02, 2014

Report Number: L707529

Samples Received: 06/28/14

Client Project:

Description: Scheiot State 3-16J

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:

T. Alan Harvill , ESC Representative

#### Laboratory Certification Numbers

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

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

This report may not be reproduced, except in full, without written approval from 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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 Mt. Juliet, TN 37122  
 (615) 758-5858  
 1-800-767-5859  
 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

July 02, 2014

Date Received : June 28, 2014  
 Description : Scheiot State 3-16J  
 Sample ID : SCHEIOT-STATE-3-16J-MW-01R-062614  
 Collected By : Eric Vonde  
 Collection Date : 06/26/14 15:06

ESC Sample # : L707529-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	1100	10.	ug/l	8260B	06/30/14	10
Toluene	BDL	50.	ug/l	8260B	06/30/14	10
Ethylbenzene	350	10.	ug/l	8260B	06/30/14	10
Total Xylenes	2600	30.	ug/l	8260B	06/30/14	10
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	06/30/14	10
Dibromofluoromethane	96.9		% Rec.	8260B	06/30/14	10
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	06/30/14	10
4-Bromofluorobenzene	100.		% Rec.	8260B	06/30/14	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 07/02/14 10:09 Printed: 07/02/14 13:55



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

Tax I.D. 62-0814289  
 Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

July 02, 2014

Date Received : June 28, 2014  
 Description : Scheiot State 3-16J  
 Sample ID : SCHEIOT-STATE-3-16J-MW-02R-062614  
 Collected By : Eric Vonde  
 Collection Date : 06/26/14 13:26

ESC Sample # : L707529-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	96.	1.0	ug/l	8260B	06/30/14	1
Toluene	BDL	5.0	ug/l	8260B	06/30/14	1
Ethylbenzene	59.	1.0	ug/l	8260B	06/30/14	1
Total Xylenes	16.	3.0	ug/l	8260B	06/30/14	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	06/30/14	1
Dibromofluoromethane	99.8		% Rec.	8260B	06/30/14	1
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	06/30/14	1
4-Bromofluorobenzene	99.6		% Rec.	8260B	06/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

July 02, 2014

Date Received : June 28, 2014  
 Description : Scheiot State 3-16J  
 Sample ID : SCHEIOT-STATE-3-16J-MW-03R-062614  
 Collected By : Eric Vonde  
 Collection Date : 06/26/14 13:56

ESC Sample # : L707529-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	06/30/14	1
Toluene	BDL	5.0	ug/l	8260B	06/30/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/30/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	06/30/14	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	06/30/14	1
Dibromofluoromethane	101.		% Rec.	8260B	06/30/14	1
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	06/30/14	1
4-Bromofluorobenzene	97.5		% Rec.	8260B	06/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 07/02/14 10:09 Printed: 07/02/14 13:55



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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

July 02, 2014

Date Received : June 28, 2014  
 Description : Scheiot State 3-16J  
 Sample ID : SCHEIOT-STATE-3-16J-MW-04-062614  
 Collected By : Eric Vonde  
 Collection Date : 06/26/14 16:03

ESC Sample # : L707529-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	500	50.	ug/l	8260B	06/30/14	50
Toluene	BDL	250	ug/l	8260B	06/30/14	50
Ethylbenzene	390	50.	ug/l	8260B	06/30/14	50
Total Xylenes	780	150	ug/l	8260B	06/30/14	50
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	06/30/14	50
Dibromofluoromethane	100.		% Rec.	8260B	06/30/14	50
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	06/30/14	50
4-Bromofluorobenzene	95.9		% Rec.	8260B	06/30/14	50

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

July 02, 2014

Date Received : June 28, 2014  
 Description : Scheiot State 3-16J  
 Sample ID : SCHEIOT-STATE-3-16J-MW-05-062614  
 Collected By : Eric Vonde  
 Collection Date : 06/26/14 15:36

ESC Sample # : L707529-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	1.8	1.0	ug/l	8260B	06/30/14	1
Toluene	BDL	5.0	ug/l	8260B	06/30/14	1
Ethylbenzene	27.	1.0	ug/l	8260B	06/30/14	1
Total Xylenes	48.	3.0	ug/l	8260B	06/30/14	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	06/30/14	1
Dibromofluoromethane	98.7		% Rec.	8260B	06/30/14	1
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	06/30/14	1
4-Bromofluorobenzene	103.		% Rec.	8260B	06/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 07/02/14 10:09 Printed: 07/02/14 13:55



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 Mt. Juliet, TN 37122  
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

July 02, 2014

Date Received : June 28, 2014  
 Description : Scheiot State 3-16J  
 Sample ID : SCHEIOT-STATE-3-16J-MW-06-062614  
 Collected By : Eric Vonde  
 Collection Date : 06/26/14 14:42

ESC Sample # : L707529-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	4.2	1.0	ug/l	8260B	06/30/14	1
Toluene	BDL	5.0	ug/l	8260B	06/30/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/30/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	06/30/14	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	06/30/14	1
Dibromofluoromethane	102.		% Rec.	8260B	06/30/14	1
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	06/30/14	1
4-Bromofluorobenzene	100.		% Rec.	8260B	06/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 07/02/14 10:09 Printed: 07/02/14 13:55



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

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

July 02, 2014

Date Received : June 28, 2014  
 Description : Scheiot State 3-16J  
 Sample ID : SCHEIOT-STATE-3-16J-MW-07-062614  
 Collected By : Eric Vonde  
 Collection Date : 06/26/14 14:21

ESC Sample # : L707529-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	07/01/14	1
Toluene	BDL	5.0	ug/l	8260B	07/01/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	07/01/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	07/01/14	1
Surrogate Recovery						
Toluene-d8	96.0		% Rec.	8260B	07/01/14	1
Dibromofluoromethane	98.5		% Rec.	8260B	07/01/14	1
a,a,a-Trifluorotoluene	97.9		% Rec.	8260B	07/01/14	1
4-Bromofluorobenzene	94.2		% Rec.	8260B	07/01/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 07/02/14 10:09 Printed: 07/02/14 13:55



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 Mt. Juliet, TN 37122  
 (615) 758-5858  
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

July 02, 2014

Date Received : June 28, 2014  
 Description : Scheiot State 3-16J  
 Sample ID : SCHEIOT-STATE-3-16J-MW-08-062614  
 Collected By : Eric Vonde  
 Collection Date : 06/26/14 16:56

ESC Sample # : L707529-08

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	230	50.	ug/l	8260B	07/01/14	50
Toluene	1500	250	ug/l	8260B	07/01/14	50
Ethylbenzene	550	50.	ug/l	8260B	07/01/14	50
Total Xylenes	2000	150	ug/l	8260B	07/01/14	50
Surrogate Recovery						
Toluene-d8	98.9		% Rec.	8260B	07/01/14	50
Dibromofluoromethane	99.2		% Rec.	8260B	07/01/14	50
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	07/01/14	50
4-Bromofluorobenzene	96.8		% Rec.	8260B	07/01/14	50

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 07/02/14 10:09 Printed: 07/02/14 13:55



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Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

July 02, 2014

Date Received : June 28, 2014  
 Description : Scheiot State 3-16J  
 Sample ID : SCHEIOT-STATE-3-16J-MW-09-062614  
 Collected By : Eric Vonde  
 Collection Date : 06/26/14 16:31

ESC Sample # : L707529-09

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	1.2	1.0	ug/l	8260B	07/01/14	1
Toluene	BDL	5.0	ug/l	8260B	07/01/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	07/01/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	07/01/14	1
Surrogate Recovery						
Toluene-d8	96.6		% Rec.	8260B	07/01/14	1
Dibromofluoromethane	98.3		% Rec.	8260B	07/01/14	1
a,a,a-Trifluorotoluene	98.2		% Rec.	8260B	07/01/14	1
4-Bromofluorobenzene	95.9		% Rec.	8260B	07/01/14	1

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
L707529-02	WG729319	SAMP	Benzene	R2953548	J6

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low

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 Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography 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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 Phone: 800-767-5859  
 Fax: 615-758-5859

L# 207505

D165

Account: **ENCANLCO-**  
 Template: **EAGLE**  
 Prelogin:  
 TSR:  
 Cooler:  
 Shipped Via:

Item / Contaminant	Sample # (lab only)
	01
	02
	03
	04
	05
	06
	07

Analysis / Container / Preservative

Billing Information:  
**Encana oil and Gas**  
 Attn: Blake Ford  
 ENCANLCO-EAGLE  
 Email To:  
 David.Ford@encana.com, mce3@

City/State Collected:  
 Lab Project #  
**ENCANLCO-EAGLE**  
 P.O. #

Date Results Needed	Email? No <input checked="" type="checkbox"/> Yes		Date	Time	No. of Cntrs
	FAX? No <input type="checkbox"/> Yes				
			6-26-14	1506	2
				1326	2
				1356	2
				1603	2
				1536	2
				1442	2
				1421	2
				1656	2
				1631	2

Client Project #  
 Site/Facility ID #  
 Rush? (Lab MUST Be Notified)  
 Same Day  200%  
 Next Day  100%  
 Two Day  50%  
 Three Day  25%  
 Comp/Grab Matrix \*  
 Date  
 Time

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
SCHEM1 - STATE - 3 - 165 - MW - 01R 062614	GRAB	GW	M/A	6-26-14	1506	2
SCHEM1 - STATE - 3 - 165 - MW - 01B 062614						2
SCHEM1 - STATE - 3 - 165 - MW - 01C 062614						2
SCHEM1 - STATE - 3 - 165 - MW - 01D 062614						2
SCHEM1 - STATE - 3 - 165 - MW - 01E 062614						2
SCHEM1 - STATE - 3 - 165 - MW - 01F 062614						2
SCHEM1 - STATE - 3 - 165 - MW - 01G 062614						2
SCHEM1 - STATE - 3 - 165 - MW - 01H 062614						2

\* Matrix: SS - Soil GW - Groundwater WW - Wastewater DW - Drinking Water OT - Other

Remarks:  
 Relinquished by: (Signature) Date: 6-27-14 Time: 10:00  
 Relinquished by: (Signature) Date: 6-27-14 Time: 7:00  
 Relinquished by: (Signature) Date: 6-27-14 Time: 07:00

Hold #  
 Condition: (lab use only)  
 COC Seal Intact: Y  N  NA  
 pH Checked: NCF:

BTEX (320 B)

6089 7165 9941



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Blake Ford / Martin Eckert III  
EnCana Oil & Gas - Longmont, CO  
3601 Stagecoach Rd  
Longmont, CO 80504

### Report Summary

Monday September 22, 2014

Report Number: L721367

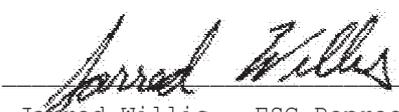
Samples Received: 09/12/14

Client Project:

Description: Scheidt State 3-16J

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:

  
Jarred Willis, ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-IN-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

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
EnCana Oil & Gas - Longmont, CO  
3601 Stagecoach Rd  
Longmont, CO 80504

September 22, 2014

Date Received : September 12, 2014  
Description : Scheidt State 3-16J  
Sample ID : SCHEIDT STATE 3-16J-MW10-091014 12.5-15  
Collected By :  
Collection Date : 09/10/14 12:20

ESC Sample # : L721367-01

Site ID : BROWN C UNIT 1

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.014	0.012	mg/kg	8021	09/20/14	25
Toluene	BDL	0.12	mg/kg	8021	09/20/14	25
Ethylbenzene	0.015	0.012	mg/kg	8021	09/20/14	25
Total Xylene	BDL	0.038	mg/kg	8021	09/20/14	25
TPH (GC/FID) Low Fraction	5.5	2.5	mg/kg	8015	09/20/14	25
Surrogate Recovery-%						
a,a,a-Trifluorotoluene (FID)	102.		% Rec.	8015	09/20/14	25
a,a,a-Trifluorotoluene (PID)	101.		% Rec.	8021	09/20/14	25
TPH (GC/FID) High Fraction	24.	4.0	mg/kg	3546/DRO	09/18/14	1
Surrogate recovery(%)						
o-Terphenyl	80.8		% Rec.	3546/DRO	09/18/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
EnCana Oil & Gas - Longmont, CO  
3601 Stagecoach Rd  
Longmont, CO 80504

September 22, 2014

Date Received : September 12, 2014  
Description : Scheidt State 3-16J  
Sample ID : SCHEIDT STATE 3-16J-MW11-091014 12.5-15  
Collected By :  
Collection Date : 09/10/14 10:40

ESC Sample # : L721367-02

Site ID : BROWN C UNIT 1

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	1.7	0.050	mg/kg	8021	09/15/14	100
Toluene	6.3	0.50	mg/kg	8021	09/15/14	100
Ethylbenzene	5.2	0.050	mg/kg	8021	09/15/14	100
Total Xylene	43.	0.15	mg/kg	8021	09/15/14	100
TPH (GC/FID) Low Fraction	630	10.	mg/kg	8015	09/15/14	100
Surrogate Recovery-%						
a,a,a-Trifluorotoluene (FID)	84.9		% Rec.	8015	09/15/14	100
a,a,a-Trifluorotoluene (PID)	97.3		% Rec.	8021	09/15/14	100
TPH (GC/FID) High Fraction	65.	4.0	mg/kg	3546/DRO	09/18/14	1
Surrogate recovery(%)						
o-Terphenyl	78.2		% Rec.	3546/DRO	09/18/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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Reported: 09/22/14 09:28 Printed: 09/22/14 09:28



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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
EnCana Oil & Gas - Longmont, CO  
3601 Stagecoach Rd  
Longmont, CO 80504

September 22, 2014

Date Received : September 12, 2014  
Description : Scheidt State 3-16J  
Sample ID : SCHEIDT STATE 3-16J-DRUM-1-091014  
Collected By :  
Collection Date : 09/10/14 15:00

ESC Sample # : L721367-03

Site ID : BROWN C UNIT 1

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	1.8	0.025	mg/kg	8021	09/15/14	50
Toluene	2.0	0.25	mg/kg	8021	09/15/14	50
Ethylbenzene	3.0	0.025	mg/kg	8021	09/15/14	50
Total Xylene	19.	0.075	mg/kg	8021	09/15/14	50
TPH (GC/FID) Low Fraction	470	5.0	mg/kg	8015	09/15/14	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene (FID)	79.4		% Rec.	8015	09/15/14	50
a,a,a-Trifluorotoluene (PID)	93.1		% Rec.	8021	09/15/14	50
TPH (GC/FID) High Fraction	110	4.0	mg/kg	3546/DRO	09/19/14	1
Surrogate recovery(%)						
o-Terphenyl	68.1		% Rec.	3546/DRO	09/19/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 09/22/14 09:28 Printed: 09/22/14 09:28

Summary of Remarks For Samples Printed  
09/22/14 at 09:28:58

TSR Signing Reports: 358  
R5 - Desired TAT

Log all BTEX waters as V8260BTEX unless specified otherwise. Enter depths for all samples as part of sample ID. Try not to report benzene as BDL above a 5x dilution.

Sample: L721367-01 Account: ENCANLCO Received: 09/12/14 09:00 Due Date: 09/19/14 00:00 RPT Date: 09/22/14 09:28

Sample: L721367-02 Account: ENCANLCO Received: 09/12/14 09:00 Due Date: 09/19/14 00:00 RPT Date: 09/22/14 09:28

Sample: L721367-03 Account: ENCANLCO Received: 09/12/14 09:00 Due Date: 09/19/14 00:00 RPT Date: 09/22/14 09:28





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Blake Ford / Martin Eckert III  
EnCana Oil & Gas - Longmont, CO  
3601 Stagecoach Rd  
Longmont, CO 80504

### Report Summary

Thursday October 02, 2014

Report Number: L723570

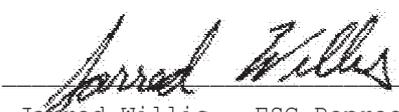
Samples Received: 09/24/14

Client Project:

Description: Scheidt State 3-16J

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Entire Report Reviewed By:

  
Jarred Willis , ESC Representative

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FL - E87487, GA - 923, IN - C-IN-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

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

October 02, 2014

Date Received : September 24, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT-STATE-3-16-MW-01R-092214  
 Collected By : Eric Vonde  
 Collection Date : 09/22/14 15:32

ESC Sample # : L723570-01

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	250	10.	ug/l	8260B	10/01/14	10
Toluene	BDL	5.0	ug/l	8260B	09/28/14	1
Ethylbenzene	71.	1.0	ug/l	8260B	09/28/14	1
Total Xylenes	220	3.0	ug/l	8260B	09/28/14	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	09/28/14	1
Dibromofluoromethane	111.		% Rec.	8260B	09/28/14	1
a,a,a-Trifluorotoluene	96.3		% Rec.	8260B	09/28/14	1
4-Bromofluorobenzene	97.7		% Rec.	8260B	09/28/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

October 02, 2014

Date Received : September 24, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT-STATE-3-16-MW-02R-092214  
 Collected By : Eric Vonde  
 Collection Date : 09/22/14 14:08

ESC Sample # : L723570-02

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	6.3	1.0	ug/l	8260B	10/01/14	1
Toluene	BDL	5.0	ug/l	8260B	09/28/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/28/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	09/28/14	1
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	09/28/14	1
Dibromofluoromethane	118.		% Rec.	8260B	09/28/14	1
a,a,a-Trifluorotoluene	99.3		% Rec.	8260B	09/28/14	1
4-Bromofluorobenzene	96.2		% Rec.	8260B	09/28/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

October 02, 2014

Date Received : September 24, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT-STATE-3-16-MW-03R-092214  
 Collected By : Eric Vonde  
 Collection Date : 09/22/14 12:57

ESC Sample # : L723570-03

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	09/28/14	1
Toluene	BDL	5.0	ug/l	8260B	09/28/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/28/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	09/28/14	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	09/28/14	1
Dibromofluoromethane	117.		% Rec.	8260B	09/28/14	1
a,a,a-Trifluorotoluene	96.6		% Rec.	8260B	09/28/14	1
4-Bromofluorobenzene	95.2		% Rec.	8260B	09/28/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

October 02, 2014

Date Received : September 24, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT-STATE-3-16-MW-04-092214  
 Collected By : Eric Vonde  
 Collection Date : 09/22/14 15:59

ESC Sample # : L723570-04

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	140	1.0	ug/l	8260B	09/28/14	1
Toluene	BDL	5.0	ug/l	8260B	09/28/14	1
Ethylbenzene	54.	1.0	ug/l	8260B	09/28/14	1
Total Xylenes	11.	3.0	ug/l	8260B	09/28/14	1
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	09/28/14	1
Dibromofluoromethane	113.		% Rec.	8260B	09/28/14	1
a,a,a-Trifluorotoluene	97.7		% Rec.	8260B	09/28/14	1
4-Bromofluorobenzene	97.9		% Rec.	8260B	09/28/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

October 02, 2014

Date Received : September 24, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT-STATE-3-16-MW-05-092214  
 Collected By : Eric Vonde  
 Collection Date : 09/22/14 14:38

ESC Sample # : L723570-05

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	09/28/14	1
Toluene	BDL	5.0	ug/l	8260B	09/28/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/28/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	09/28/14	1
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	09/28/14	1
Dibromofluoromethane	115.		% Rec.	8260B	09/28/14	1
a,a,a-Trifluorotoluene	97.1		% Rec.	8260B	09/28/14	1
4-Bromofluorobenzene	96.7		% Rec.	8260B	09/28/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 10/01/14 15:38 Revised: 10/02/14 08:00



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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

October 02, 2014

Date Received : September 24, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT-STATE-3-16-MW-06-092214  
 Collected By : Eric Vonde  
 Collection Date : 09/22/14 13:39

ESC Sample # : L723570-06

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	6.8	1.0	ug/l	8260B	09/28/14	1
Toluene	BDL	5.0	ug/l	8260B	09/28/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/28/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	09/28/14	1
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	09/28/14	1
Dibromofluoromethane	116.		% Rec.	8260B	09/28/14	1
a,a,a-Trifluorotoluene	95.6		% Rec.	8260B	09/28/14	1
4-Bromofluorobenzene	95.3		% Rec.	8260B	09/28/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

October 02, 2014

Date Received : September 24, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT-STATE-3-16-MW-07-092214  
 Collected By : Eric Vonde  
 Collection Date : 09/22/14 12:36

ESC Sample # : L723570-07

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	160	1.0	ug/l	8260B	09/28/14	1
Toluene	BDL	5.0	ug/l	8260B	09/28/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/28/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	09/28/14	1
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	09/28/14	1
Dibromofluoromethane	112.		% Rec.	8260B	09/28/14	1
a,a,a-Trifluorotoluene	96.9		% Rec.	8260B	09/28/14	1
4-Bromofluorobenzene	96.7		% Rec.	8260B	09/28/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

October 02, 2014

Date Received : September 24, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT-STATE-3-16-MW-08-092214  
 Collected By : Eric Vonde  
 Collection Date : 09/22/14 16:24

ESC Sample # : L723570-08

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	110	5.0	ug/l	8260B	09/28/14	5
Toluene	BDL	25.	ug/l	8260B	09/28/14	5
Ethylbenzene	310	5.0	ug/l	8260B	09/28/14	5
Total Xylenes	BDL	15.	ug/l	8260B	09/28/14	5
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	09/28/14	5
Dibromofluoromethane	112.		% Rec.	8260B	09/28/14	5
a,a,a-Trifluorotoluene	97.5		% Rec.	8260B	09/28/14	5
4-Bromofluorobenzene	96.4		% Rec.	8260B	09/28/14	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

October 02, 2014

Date Received : September 24, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT-STATE-3-16-MW-09-092214  
 Collected By : Eric Vonde  
 Collection Date : 09/22/14 13:16

ESC Sample # : L723570-09

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	3.6	1.0	ug/l	8260B	09/28/14	1
Toluene	BDL	5.0	ug/l	8260B	09/28/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	09/28/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	09/28/14	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	09/28/14	1
Dibromofluoromethane	119.		% Rec.	8260B	09/28/14	1
a,a,a-Trifluorotoluene	96.8		% Rec.	8260B	09/28/14	1
4-Bromofluorobenzene	96.4		% Rec.	8260B	09/28/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

October 02, 2014

Date Received : September 24, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT-STATE-3-16-MW-10-092214  
 Collected By : Eric Vonde  
 Collection Date : 09/22/14 16:56

ESC Sample # : L723570-10

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	11.	1.0	ug/l	8260B	09/28/14	1
Toluene	BDL	5.0	ug/l	8260B	09/28/14	1
Ethylbenzene	21.	1.0	ug/l	8260B	09/28/14	1
Total Xylenes	110	3.0	ug/l	8260B	09/28/14	1
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	09/28/14	1
Dibromofluoromethane	115.		% Rec.	8260B	09/28/14	1
a,a,a-Trifluorotoluene	97.1		% Rec.	8260B	09/28/14	1
4-Bromofluorobenzene	97.8		% Rec.	8260B	09/28/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

October 02, 2014

Date Received : September 24, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT-STATE-3-16-MW-11-092214  
 Collected By : Eric Vonde  
 Collection Date : 09/22/14 15:03

ESC Sample # : L723570-11

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	340	5.0	ug/l	8260B	10/01/14	5
Toluene	BDL	25.	ug/l	8260B	10/01/14	5
Ethylbenzene	80.	5.0	ug/l	8260B	10/01/14	5
Total Xylenes	510	15.	ug/l	8260B	10/01/14	5
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	10/01/14	5
Dibromofluoromethane	94.4		% Rec.	8260B	10/01/14	5
a,a,a-Trifluorotoluene	108.		% Rec.	8260B	10/01/14	5
4-Bromofluorobenzene	97.9		% Rec.	8260B	10/01/14	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 10/01/14 15:38 Revised: 10/02/14 08:00

Company Name/Address

**ENCANLCO-EAGLE**

Encana Oil and Gas  
3601 Stagecoach Rd.  
Longmont, CO 80504

Alternate Billing

Encana Oil and Gas  
Attn: Blake Ford  
Longmont CO 80504

Report to: B. Ford, Martin Eckert III

enviro.com

Project Description: *SHENOT STAGE 3-16*

ENCANLCO-EAGLE

PHONE: 970-379-5558

FAX:

Client Project No.

Lab Project #

Collected by:

Site/Facility ID# *SHENOT STAGE 3-16*

Collected by (signature):

Rush? (Lab MUST be Notified)

Same Day.....200%  
Next Day.....100%  
Two Day.....50%

Packed on Ice N Y X

Sample ID

Comp/Grab

Matrix

Depth

Date

Time

Date Results Needed

Cntrs

Remarks/contaminant

Sample # (lab only)

Sample ID	Comp/Grab	Matrix	Depth	Date	Time	Date Results Needed	Cntrs	Remarks/contaminant	Sample # (lab only)
<i>SHENOT - STAGE 3-16 - MW-07A-092214</i>	<i>Grab</i>	<i>GW</i>	<i>N/A</i>	<i>9-22-14</i>	<i>1532</i>		<i>2</i>		<i>-01</i>
<i>SHENOT - STAGE 3-16 - MW-02B-092214</i>					<i>1408</i>		<i>2</i>		<i>-03</i>
<i>SHENOT - STAGE 3-16 - MW-03R-092214</i>					<i>1257</i>		<i>2</i>		<i>-03</i>
<i>SHENOT - STAGE 3-16 - MW-04-092214</i>					<i>1557</i>		<i>2</i>		<i>-01</i>
<i>SHENOT - STAGE 3-16 - MW-05-092214</i>					<i>1438</i>		<i>2</i>		<i>-05</i>
<i>SHENOT - STAGE 3-16 - MW-06-092214</i>					<i>1359</i>		<i>2</i>		<i>-06</i>
<i>SHENOT - STAGE 3-16 - MW-07-092214</i>					<i>1236</i>		<i>2</i>		<i>-07</i>
<i>SHENOT - STAGE 3-16 - MW-08-092214</i>					<i>1621</i>		<i>2</i>		<i>-08</i>

*BK (anob)*

CoCode (lab use only)

ENCANLCO-EAGLE

Template/Prelogin

*1723570*

Shipped Via: Denver Service Center

Chain of Custody Page 1 of 2

Prepared by: **B013**



12065 Lebanon Road  
Mt. Juliet TN 37122

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

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

Remarks:

pH \_\_\_\_\_ Temp \_\_\_\_\_  
Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquisher by (Signature)

Date:

Time:

Received by (Signature)

Samples returned via: FedEX UPS Other

Temp: *3.4*

Condition

(lab use only)

Relinquisher by (Signature)

Date:

Time:

Received by (Signature)

Bottles Received: *22*

Date: *9/24/14*

pH Checked:

NCF:

Relinquisher by (Signature)

Date:

Time:

Received for lab by (Signature)

Time: *09:00*

Date: *9/24/14*

pH Checked:

NCF:

*JVS*

*OK*

Company Name/Address: **ENCANLCO-EAGLE**  
 Encana Oil and Gas  
 3601 Stagecoach Rd.  
 Longmont, CO 80504

Report to: **B. Ford, Martin Eckert III**  
 Phone: 970-379-5558  
 Fax:

Project Description: *SUNDOT STATE 3-165*

Client Project #

Site/Facility ID # *SUNDOT STATE 3-165*

Collected by (print): *Blake Ford*

Collected by (signature): *[Signature]*

Immediately Packed on ice N  Y

Billing Information:  
 Encana oil and Gas  
 Attn: Blake Ford  
 ENCANLCO-EAGLE

Email To: **David.Ford@encana.com, mce3@**

City/State Collected:

Lab Project #

P.O. #

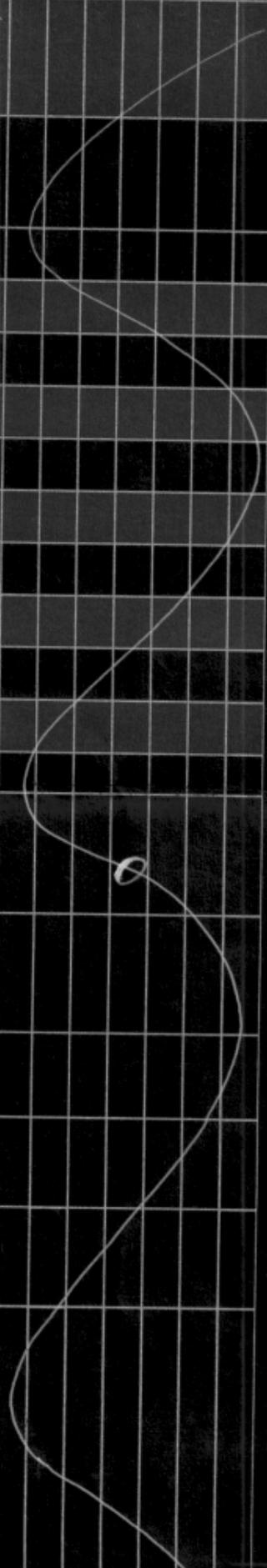
Date Results Needed

Email?  No  Yes  
 FAX?  No  Yes

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
<i>SUNDOT STATE 3-165 M-09-09 22M</i>	<i>L-11D</i>	<i>GW</i>	<i>NA</i>	<i>9-22-14</i>	<i>1316</i>	<i>2 X</i>
<i>SUNDOT STATE 3-165 M-11-09 22M</i>	<i>L-11D</i>	<i>GW</i>	<i>↓</i>	<i>↓</i>	<i>1656</i>	<i>2 X</i>
<i>SUNDOT STATE 3-165 M-11-09 22M</i>	<i>L-11D</i>	<i>GW</i>	<i>↓</i>	<i>↓</i>	<i>1523</i>	<i>2 X</i>

*Brix (3268)*



\* Matrix: **SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other**

Remarks:

Relinquished by: (Signature) *[Signature]* Date: *9-23-14* Time: *2:15*

Relinquished by: (Signature) *[Signature]* Date: *9-23-14* Time: *4:50*

Relinquished by: (Signature) *[Signature]* Date: \_\_\_\_\_ Time: \_\_\_\_\_

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

ESC  
 L.A.B S.C.I.E.N.C.E.S  
 YOUR LAB OF CHOICE  
 12065 Lebanon Rd  
 Mount Juliet, TN 37122  
 Phone: 615-758-5858  
 Phone: 800-767-5859  
 Fax: 615-758-5859

L # *L723570*

Table #

Acctnum: **ENCANLCO**

Template:

Prelogin:

TSR:

Cooler:

Shipped Via:

Item/Contaminant Sample # (lab only)  
*-9*  
*-10*  
*-11*

Hold #

Condition: (lab use only) *SMS*

COC Seal Intact: Y  N  NA

pH Checked: *[Signature]* NCF:

Temp \_\_\_\_\_

Flow \_\_\_\_\_ Other \_\_\_\_\_

Samples returned via:  UPS  FedEx  Courier

Temp: *3.4* °C Bottles Received: *22*

Date: *7/24/14* Time: *09:00*

Received by: (Signature) *[Signature]* Time: \_\_\_\_\_

Received by: (Signature) *[Signature]* Time: \_\_\_\_\_

Received for lab by: (Signature) *[Signature]* Time: \_\_\_\_\_



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Est. 1970

Blake Ford / Martin Eckert III  
EnCana Oil & Gas - Longmont, CO  
3601 Stagecoach Rd  
Longmont, CO 80504

### Report Summary

Monday January 05, 2015

Report Number: L740964

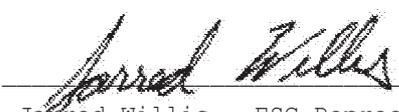
Samples Received: 12/27/14

Client Project:

Description: Scheidt State 3-16J

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:

  
Jarred Willis , ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-IN-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.

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Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

January 05, 2015

Date Received : December 27, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-01R-122414  
 Collected By : Andrew Newberry  
 Collection Date : 12/24/14 10:41

ESC Sample # : L740964-01

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	1.0	1.0	ug/l	8260B	01/02/15	1
Toluene	BDL	5.0	ug/l	8260B	01/02/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	01/02/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	01/02/15	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	01/02/15	1
Dibromofluoromethane	100.		% Rec.	8260B	01/02/15	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	01/02/15	1
4-Bromofluorobenzene	100.		% Rec.	8260B	01/02/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

January 05, 2015

Date Received : December 27, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-02R-122414  
 Collected By : Andrew Newberry  
 Collection Date : 12/24/14 09:39

ESC Sample # : L740964-02

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	1.3	1.0	ug/l	8260B	01/02/15	1
Toluene	BDL	5.0	ug/l	8260B	01/02/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	01/02/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	01/02/15	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	01/02/15	1
Dibromofluoromethane	100.		% Rec.	8260B	01/02/15	1
a,a,a-Trifluorotoluene	98.8		% Rec.	8260B	01/02/15	1
4-Bromofluorobenzene	98.9		% Rec.	8260B	01/02/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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Reported: 01/05/15 09:51 Printed: 01/05/15 09:52



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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

January 05, 2015

Date Received : December 27, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-03R-122414  
 Collected By : Andrew Newberry  
 Collection Date : 12/24/14 09:01

ESC Sample # : L740964-03

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	01/02/15	1
Toluene	BDL	5.0	ug/l	8260B	01/02/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	01/02/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	01/02/15	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	01/02/15	1
Dibromofluoromethane	101.		% Rec.	8260B	01/02/15	1
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	01/02/15	1
4-Bromofluorobenzene	98.7		% Rec.	8260B	01/02/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Tax I.D. 62-0814289  
 Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

January 05, 2015

Date Received : December 27, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-04-122414  
 Collected By : Andrew Newberry  
 Collection Date : 12/24/14 12:13

ESC Sample # : L740964-04  
 Site ID : SCHEIDT STATE 3-16J  
 Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	33.	1.0	ug/l	8260B	01/02/15	1
Toluene	BDL	5.0	ug/l	8260B	01/02/15	1
Ethylbenzene	11.	1.0	ug/l	8260B	01/02/15	1
Total Xylenes	19.	3.0	ug/l	8260B	01/02/15	1
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	01/02/15	1
Dibromofluoromethane	102.		% Rec.	8260B	01/02/15	1
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	01/02/15	1
4-Bromofluorobenzene	96.7		% Rec.	8260B	01/02/15	1

BDL - Below Detection Limit  
 Det. Limit - Practical Quantitation Limit (PQL)  
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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

January 05, 2015

Date Received : December 27, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-05-122414  
 Collected By : Andrew Newberry  
 Collection Date : 12/24/14 09:21

ESC Sample # : L740964-05

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	01/02/15	1
Toluene	BDL	5.0	ug/l	8260B	01/02/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	01/02/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	01/02/15	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	01/02/15	1
Dibromofluoromethane	101.		% Rec.	8260B	01/02/15	1
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	01/02/15	1
4-Bromofluorobenzene	100.		% Rec.	8260B	01/02/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

January 05, 2015

Date Received : December 27, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-06-122414  
 Collected By : Andrew Newberry  
 Collection Date : 12/24/14 10:01

ESC Sample # : L740964-06

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	01/02/15	1
Toluene	BDL	5.0	ug/l	8260B	01/02/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	01/02/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	01/02/15	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	01/02/15	1
Dibromofluoromethane	96.5		% Rec.	8260B	01/02/15	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	01/02/15	1
4-Bromofluorobenzene	101.		% Rec.	8260B	01/02/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

January 05, 2015

Date Received : December 27, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-07-122414  
 Collected By : Andrew Newberry  
 Collection Date : 12/24/14 10:21

ESC Sample # : L740964-07  
 Site ID : SCHEIDT STATE 3-16J  
 Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	70.	1.0	ug/l	8260B	01/02/15	1
Toluene	BDL	5.0	ug/l	8260B	01/02/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	01/02/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	01/02/15	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	01/02/15	1
Dibromofluoromethane	104.		% Rec.	8260B	01/02/15	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	01/02/15	1
4-Bromofluorobenzene	99.7		% Rec.	8260B	01/02/15	1

BDL - Below Detection Limit  
 Det. Limit - Practical Quantitation Limit (PQL)  
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Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

January 05, 2015

Date Received : December 27, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-08-122414  
 Collected By : Andrew Newberry  
 Collection Date : 12/24/14 12:38

ESC Sample # : L740964-08

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	380	10.	ug/l	8260B	01/04/15	10
Toluene	360	50.	ug/l	8260B	01/04/15	10
Ethylbenzene	340	10.	ug/l	8260B	01/04/15	10
Total Xylenes	620	30.	ug/l	8260B	01/04/15	10
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	01/04/15	1
Dibromofluoromethane	93.8		% Rec.	8260B	01/04/15	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	01/04/15	1
4-Bromofluorobenzene	96.9		% Rec.	8260B	01/04/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

January 05, 2015

Date Received : December 27, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-09-122414  
 Collected By : Andrew Newberry  
 Collection Date : 12/24/14 11:27

ESC Sample # : L740964-09  
 Site ID : SCHEIDT STATE 3-16J  
 Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	01/04/15	1
Toluene	BDL	5.0	ug/l	8260B	01/04/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	01/04/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	01/04/15	1
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	01/04/15	1
Dibromofluoromethane	99.6		% Rec.	8260B	01/04/15	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	01/04/15	1
4-Bromofluorobenzene	93.9		% Rec.	8260B	01/04/15	1

BDL - Below Detection Limit  
 Det. Limit - Practical Quantitation Limit (PQL)  
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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

January 05, 2015

Date Received : December 27, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-10-122414  
 Collected By : Andrew Newberry  
 Collection Date : 12/24/14 11:49

ESC Sample # : L740964-10

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	13.	1.0	ug/l	8260B	01/02/15	1
Toluene	BDL	5.0	ug/l	8260B	01/02/15	1
Ethylbenzene	11.	1.0	ug/l	8260B	01/02/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	01/02/15	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	01/02/15	1
Dibromofluoromethane	100.		% Rec.	8260B	01/02/15	1
a,a,a-Trifluorotoluene	103.		% Rec.	8260B	01/02/15	1
4-Bromofluorobenzene	98.5		% Rec.	8260B	01/02/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

January 05, 2015

Date Received : December 27, 2014  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-11-122414  
 Collected By : Andrew Newberry  
 Collection Date : 12/24/14 11:01

ESC Sample # : L740964-11

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	2.5	1.0	ug/l	8260B	01/02/15	1
Toluene	BDL	5.0	ug/l	8260B	01/02/15	1
Ethylbenzene	1.4	1.0	ug/l	8260B	01/02/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	01/02/15	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	01/02/15	1
Dibromofluoromethane	97.9		% Rec.	8260B	01/02/15	1
a,a,a-Trifluorotoluene	99.9		% Rec.	8260B	01/02/15	1
4-Bromofluorobenzene	98.4		% Rec.	8260B	01/02/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 01/05/15 09:51 Printed: 01/05/15 09:52

Summary of Remarks For Samples Printed  
01/05/15 at 09:52:09

TSR Signing Reports: 358  
R5 - Desired TAT

Log all BTEX waters as V8260BTEX unless specified otherwise. Enter depths for all samples as part of sample ID. Try not to report benzene as BDL above a 5x dilution.

Sample: L740964-01 Account: ENCANLCO Received: 12/27/14 08:00 Due Date: 01/05/15 00:00 RPT Date: 01/05/15 09:51  
Sample: L740964-02 Account: ENCANLCO Received: 12/27/14 08:00 Due Date: 01/05/15 00:00 RPT Date: 01/05/15 09:51  
Sample: L740964-03 Account: ENCANLCO Received: 12/27/14 08:00 Due Date: 01/05/15 00:00 RPT Date: 01/05/15 09:51  
Sample: L740964-04 Account: ENCANLCO Received: 12/27/14 08:00 Due Date: 01/05/15 00:00 RPT Date: 01/05/15 09:51  
Sample: L740964-05 Account: ENCANLCO Received: 12/27/14 08:00 Due Date: 01/05/15 00:00 RPT Date: 01/05/15 09:51  
Sample: L740964-06 Account: ENCANLCO Received: 12/27/14 08:00 Due Date: 01/05/15 00:00 RPT Date: 01/05/15 09:51  
Sample: L740964-07 Account: ENCANLCO Received: 12/27/14 08:00 Due Date: 01/05/15 00:00 RPT Date: 01/05/15 09:51  
Sample: L740964-08 Account: ENCANLCO Received: 12/27/14 08:00 Due Date: 01/05/15 00:00 RPT Date: 01/05/15 09:51  
Sample: L740964-09 Account: ENCANLCO Received: 12/27/14 08:00 Due Date: 01/05/15 00:00 RPT Date: 01/05/15 09:51  
Sample: L740964-10 Account: ENCANLCO Received: 12/27/14 08:00 Due Date: 01/05/15 00:00 RPT Date: 01/05/15 09:51  
Sample: L740964-11 Account: ENCANLCO Received: 12/27/14 08:00 Due Date: 01/05/15 00:00 RPT Date: 01/05/15 09:51







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Blake Ford / Martin Eckert III  
EnCana Oil & Gas - Longmont, CO  
3601 Stagecoach Rd  
Longmont, CO 80504

### Report Summary

Tuesday March 24, 2015

Report Number: L753621

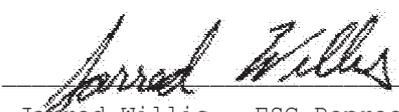
Samples Received: 03/14/15

Client Project:

Description: Scheidt State 3-16J

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:

  
Jarred Willis, ESC Representative

#### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-IN-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

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

March 24, 2015

Date Received : March 14, 2015  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-01R-031215  
 Collected By : Eric Vonde  
 Collection Date : 03/12/15 10:58

ESC Sample # : L753621-01

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	1.1	1.0	ug/l	8260B	03/21/15	1
Toluene	BDL	5.0	ug/l	8260B	03/21/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	03/21/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	03/21/15	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	03/21/15	1
Dibromofluoromethane	99.2		% Rec.	8260B	03/21/15	1
a,a,a-Trifluorotoluene	99.5		% Rec.	8260B	03/21/15	1
4-Bromofluorobenzene	99.2		% Rec.	8260B	03/21/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

March 24, 2015

Date Received : March 14, 2015  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-02R-031215  
 Collected By : Eric Vonde  
 Collection Date : 03/12/15 11:56

ESC Sample # : L753621-02

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	5.9	1.0	ug/l	8260B	03/21/15	1
Toluene	BDL	5.0	ug/l	8260B	03/21/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	03/21/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	03/21/15	1
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	03/21/15	1
Dibromofluoromethane	99.0		% Rec.	8260B	03/21/15	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	03/21/15	1
4-Bromofluorobenzene	99.4		% Rec.	8260B	03/21/15	1

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

March 24, 2015

Date Received : March 14, 2015  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-03R-031215  
 Collected By : Eric Vonde  
 Collection Date : 03/12/15 11:16

ESC Sample # : L753621-03

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	03/21/15	1
Toluene	BDL	5.0	ug/l	8260B	03/21/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	03/21/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	03/21/15	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	03/21/15	1
Dibromofluoromethane	97.6		% Rec.	8260B	03/21/15	1
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	03/21/15	1
4-Bromofluorobenzene	97.0		% Rec.	8260B	03/21/15	1

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Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

March 24, 2015

Date Received : March 14, 2015  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-04-031215  
 Collected By : Eric Vonde  
 Collection Date : 03/12/15 13:31

ESC Sample # : L753621-04

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	20.	1.0	ug/l	8260B	03/21/15	1
Toluene	BDL	5.0	ug/l	8260B	03/21/15	1
Ethylbenzene	6.2	1.0	ug/l	8260B	03/21/15	1
Total Xylenes	5.1	3.0	ug/l	8260B	03/21/15	1
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	03/21/15	1
Dibromofluoromethane	98.4		% Rec.	8260B	03/21/15	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	03/21/15	1
4-Bromofluorobenzene	97.4		% Rec.	8260B	03/21/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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 1-800-767-5859  
 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

March 24, 2015

Date Received : March 14, 2015  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-05-031215  
 Collected By : Eric Vonde  
 Collection Date : 03/12/15 10:11

ESC Sample # : L753621-05

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	03/22/15	1
Toluene	BDL	5.0	ug/l	8260B	03/22/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	03/22/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	03/22/15	1
Surrogate Recovery						
Toluene-d8	107.		% Rec.	8260B	03/22/15	1
Dibromofluoromethane	109.		% Rec.	8260B	03/22/15	1
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	03/22/15	1
4-Bromofluorobenzene	103.		% Rec.	8260B	03/22/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

March 24, 2015

Date Received : March 14, 2015  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-06-031215  
 Collected By : Eric Vonde  
 Collection Date : 03/12/15 10:34

ESC Sample # : L753621-06

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	03/21/15	1
Toluene	BDL	5.0	ug/l	8260B	03/21/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	03/21/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	03/21/15	1
Surrogate Recovery						
Toluene-d8	118.		% Rec.	8260B	03/21/15	1
Dibromofluoromethane	120.		% Rec.	8260B	03/21/15	1
a,a,a-Trifluorotoluene	111.		% Rec.	8260B	03/21/15	1
4-Bromofluorobenzene	104.		% Rec.	8260B	03/21/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

March 24, 2015

Date Received : March 14, 2015  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-07-031215  
 Collected By : Eric Vonde  
 Collection Date : 03/12/15 12:38

ESC Sample # : L753621-07

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	42.	1.0	ug/l	8260B	03/21/15	1
Toluene	BDL	5.0	ug/l	8260B	03/21/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	03/21/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	03/21/15	1
Surrogate Recovery						
Toluene-d8	112.		% Rec.	8260B	03/21/15	1
Dibromofluoromethane	116.		% Rec.	8260B	03/21/15	1
a,a,a-Trifluorotoluene	104.		% Rec.	8260B	03/21/15	1
4-Bromofluorobenzene	99.4		% Rec.	8260B	03/21/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

March 24, 2015

Date Received : March 14, 2015  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-08-031215  
 Collected By : Eric Vonde  
 Collection Date : 03/12/15 13:51

ESC Sample # : L753621-08

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	1.9	1.0	ug/l	8260B	03/24/15	1
Toluene	BDL	5.0	ug/l	8260B	03/24/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	03/24/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	03/24/15	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	03/24/15	1
Dibromofluoromethane	102.		% Rec.	8260B	03/24/15	1
a,a,a-Trifluorotoluene	98.9		% Rec.	8260B	03/24/15	1
4-Bromofluorobenzene	100.		% Rec.	8260B	03/24/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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 3601 Stagecoach Rd  
 Longmont, CO 80504

March 24, 2015

Date Received : March 14, 2015  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-09-031215  
 Collected By : Eric Vonde  
 Collection Date : 03/12/15 11:36

ESC Sample # : L753621-09

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	03/21/15	1
Toluene	BDL	5.0	ug/l	8260B	03/21/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	03/21/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	03/21/15	1
Surrogate Recovery						
Toluene-d8	111.		% Rec.	8260B	03/21/15	1
Dibromofluoromethane	140.		% Rec.	8260B	03/21/15	1
a,a,a-Trifluorotoluene	90.3		% Rec.	8260B	03/21/15	1
4-Bromofluorobenzene	97.0		% Rec.	8260B	03/21/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Blake Ford / Martin Eckert III  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

March 24, 2015

Date Received : March 14, 2015  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-10-031215  
 Collected By : Eric Vonde  
 Collection Date : 03/12/15 13:06

ESC Sample # : L753621-10

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	10.	1.0	ug/l	8260B	03/21/15	1
Toluene	BDL	5.0	ug/l	8260B	03/21/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	03/21/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	03/21/15	1
Surrogate Recovery						
Toluene-d8	117.		% Rec.	8260B	03/21/15	1
Dibromofluoromethane	120.		% Rec.	8260B	03/21/15	1
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	03/21/15	1
4-Bromofluorobenzene	101.		% Rec.	8260B	03/21/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

March 24, 2015

Date Received : March 14, 2015  
 Description : Scheidt State 3-16J  
 Sample ID : SCHEIDT STATE 3-16J-MW-11-031215  
 Collected By : Eric Vonde  
 Collection Date : 03/12/15 12:16

ESC Sample # : L753621-11

Site ID : SCHEIDT STATE 3-16J

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	03/21/15	1
Toluene	BDL	5.0	ug/l	8260B	03/21/15	1
Ethylbenzene	BDL	1.0	ug/l	8260B	03/21/15	1
Total Xylenes	BDL	3.0	ug/l	8260B	03/21/15	1
Surrogate Recovery						
Toluene-d8	110.		% Rec.	8260B	03/21/15	1
Dibromofluoromethane	111.		% Rec.	8260B	03/21/15	1
a,a,a-Trifluorotoluene	103.		% Rec.	8260B	03/21/15	1
4-Bromofluorobenzene	107.		% Rec.	8260B	03/21/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L753621-06	WG775852	SAMP	Toluene-d8	R3026430	J1
L753621-07	WG775852	SAMP	Toluene-d8	R3026430	J1
L753621-09	WG775852	SAMP	Dibromofluoromethane	R3026430	J1
L753621-10	WG775852	SAMP	Toluene-d8	R3026430	J1

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits

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 Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography 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.





L# **L753621**  
 Table #  
 Account: **ENCANLCO**  
 Template:  
 Prelogin:  
 TSR:  
 Cooler:  
 Shipped Via:  
 Rem./Contaminant  
 Sample # (lab only) **-11**

| Analysis / Container / Preservative |
|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
|                                     |                                     |                                     |                                     |                                     |                                     |                                     |                                     |                                     |                                     |

Company Name/Address:  
**ENCANLCO-EAGLE**  
 Encana Oil and Gas  
 3601 Stagecoach Rd.  
 Longmont, CO 80504

Billing Information:  
**Encana oil and Gas**  
 Attn: **Blake Ford**  
**ENCANLCO-EAGLE**

Report to:  
**B. Ford, Martin Eckert III**

Project Description: **SCHÉLOT STAGE 3-14 J**

Phone: **970-379-5558**

Fax:

Collected by (print): **Blake Ford**

Collected by (signature): *[Signature]*

Immediately Packed on Ice **N**  **Y**

Site/Facility ID # **SCHÉLOT STAGE 3-14 J**

Client Project #

P.O. #

Date Results Needed

Email?  No  Yes  
 FAX?  No  Yes

No. of Cntrs

City/State Collected:

Lab Project #

Date **3-12-15**

Time **12:16**

Depth

Matrix \* **NA**

Comp/Grab **6-1**

Sample ID **SCHÉLOT STAGE 3-14 J MW-11-0315**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
<b>SCHÉLOT STAGE 3-14 J MW-11-0315</b>	<b>6-1</b>	<b>NA</b>		<b>3-12-15</b>	<b>12:16</b>	<b>2</b>

Remarks: **Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other**

Relinquished by: (Signature) *[Signature]* Date: **3-13-15** Time: **9:30**

Relinquished by: (Signature) *[Signature]* Date: **3-13-15** Time: **12:16**

Relinquished by: (Signature) *[Signature]* Date: Time:

Received by: (Signature) *[Signature]* Date: **3/14/15** Time: **09:00**

Received by: (Signature) *[Signature]* Date: Time:

Received for lab by: (Signature) *[Signature]* Date: Time:

Hold #

Condition: (lab use only) **JWS**

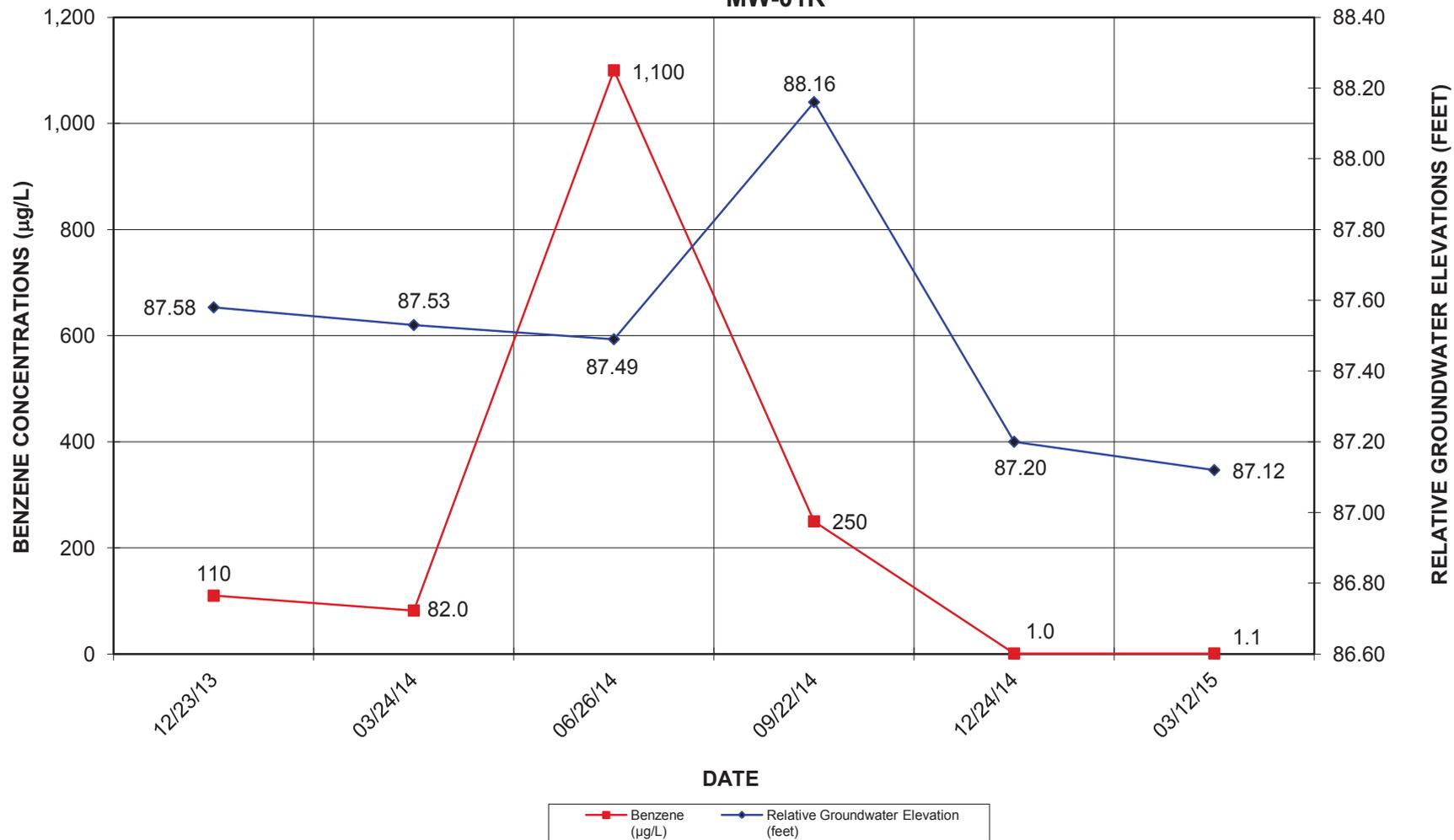
COC Seal Intact: **Y**  **N**  **NA**

pH Checked: NCF:

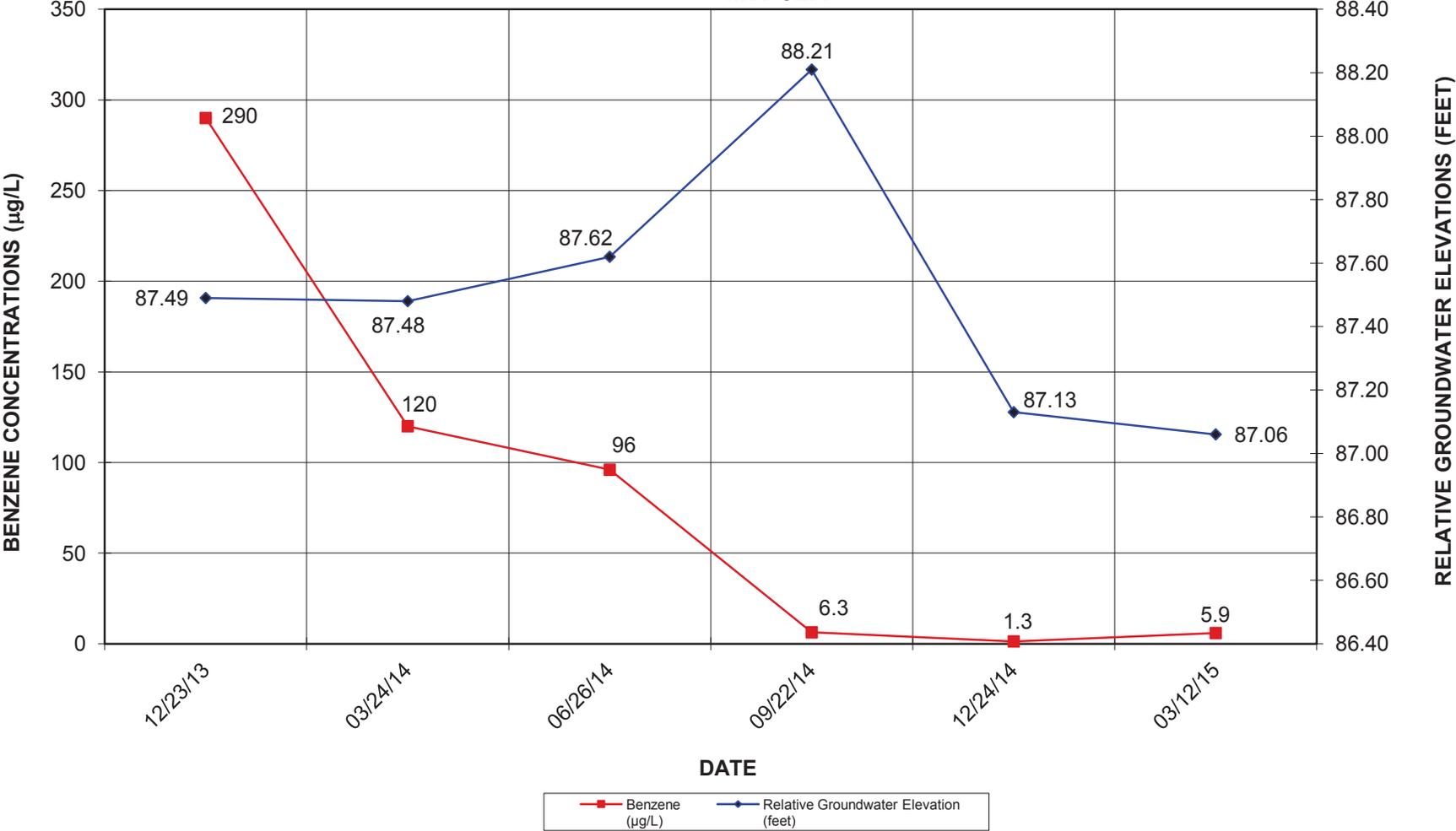
## **ATTACHMENT D**

### **Hydrographs**

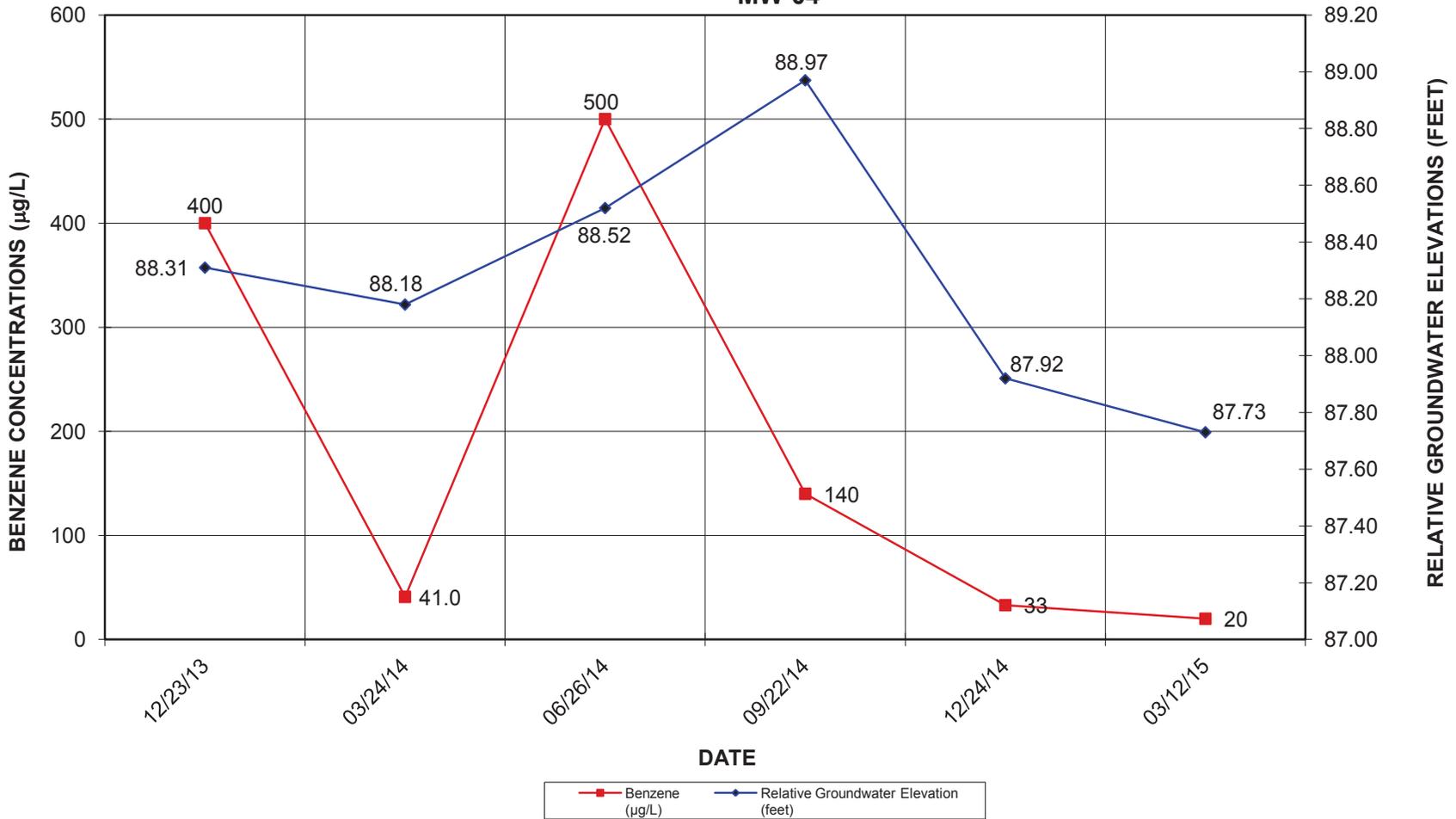
**DISSOLVED BENZENE IN GROUNDWATER ( $\mu\text{g/L}$ ) VS.  
RELATIVE GROUNDWATER ELEVATIONS (FT.) OVER TIME  
MW-01R**



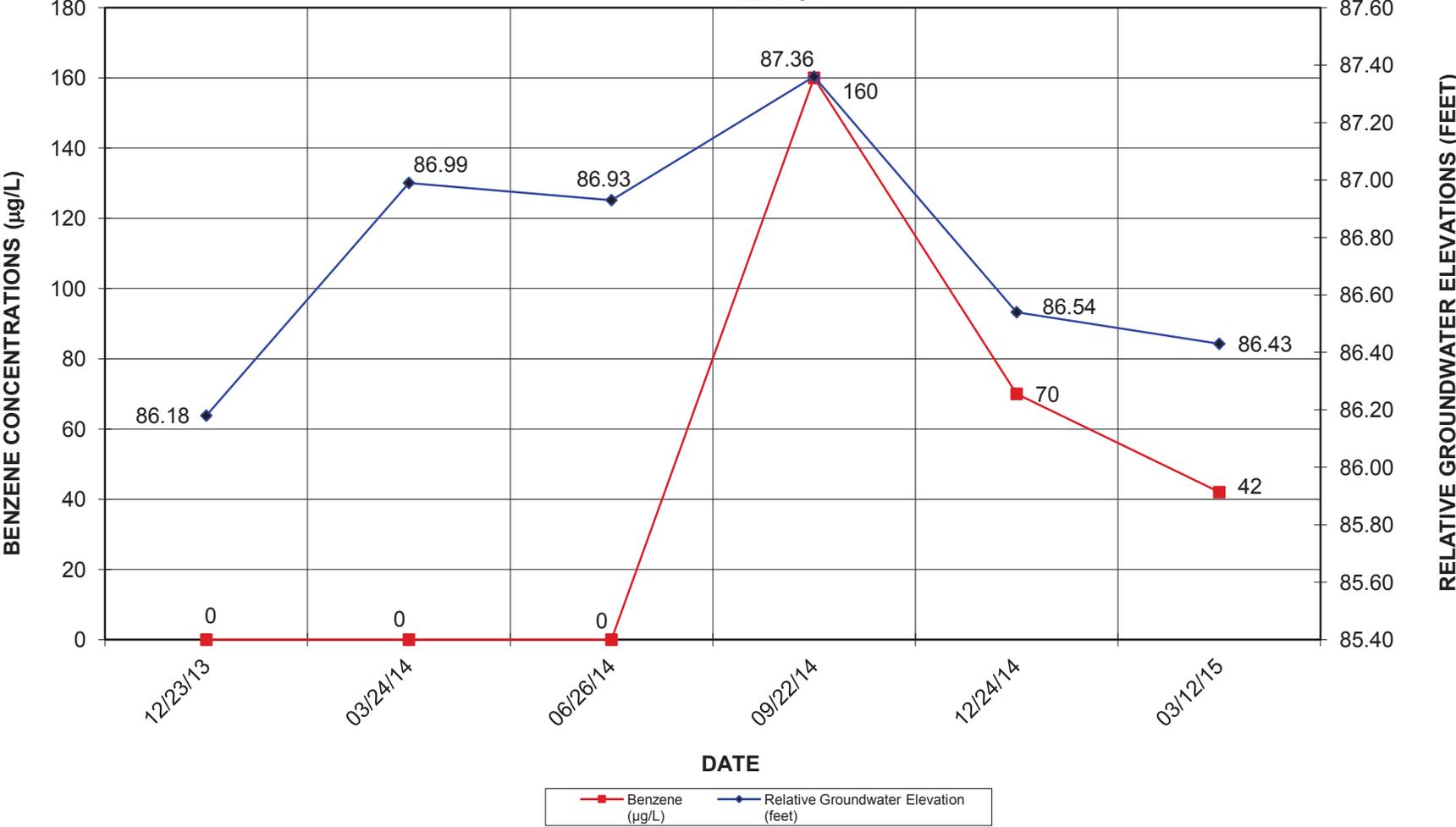
**DISSOLVED BENZENE IN GROUNDWATER ( $\mu\text{g/L}$ ) VS.  
RELATIVE GROUNDWATER ELEVATIONS (FT.) OVER TIME  
MW-02R**



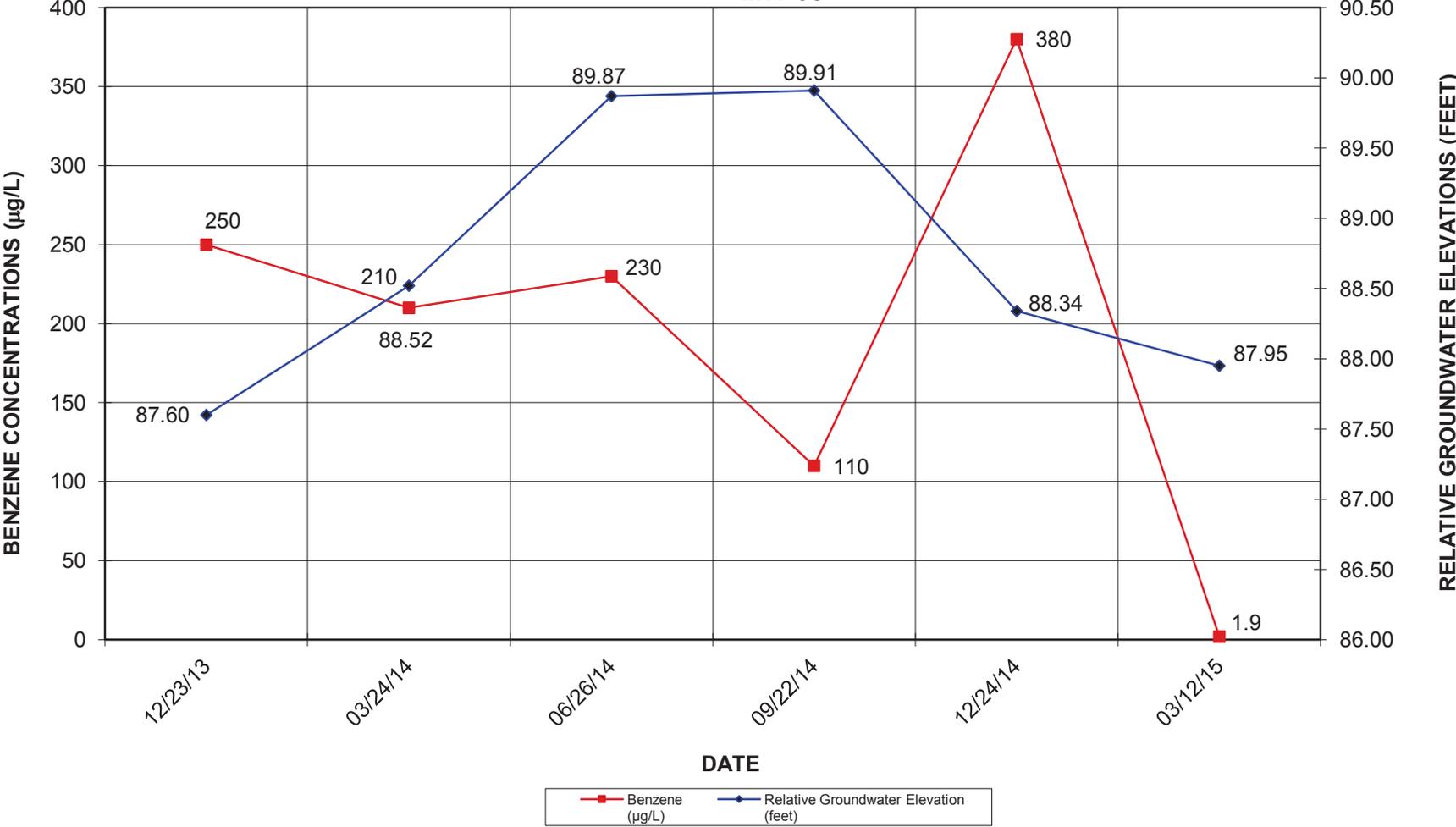
**DISSOLVED BENZENE IN GROUNDWATER ( $\mu\text{g/L}$ ) VS.  
RELATIVE GROUNDWATER ELEVATIONS (FT.) OVER TIME  
MW-04**



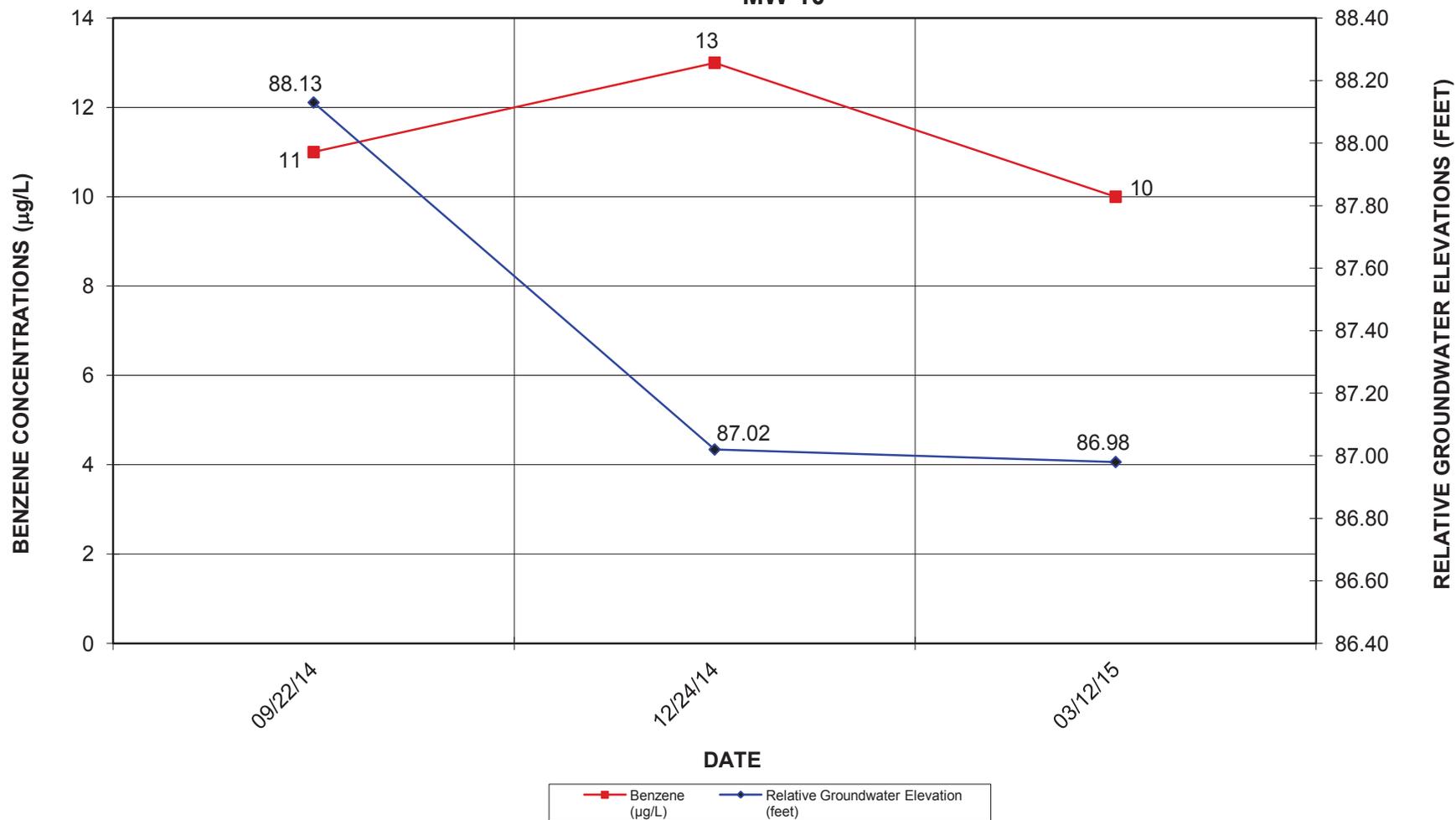
**DISSOLVED BENZENE IN GROUNDWATER ( $\mu\text{g/L}$ ) VS.  
RELATIVE GROUNDWATER ELEVATIONS (FT.) OVER TIME  
MW-07**



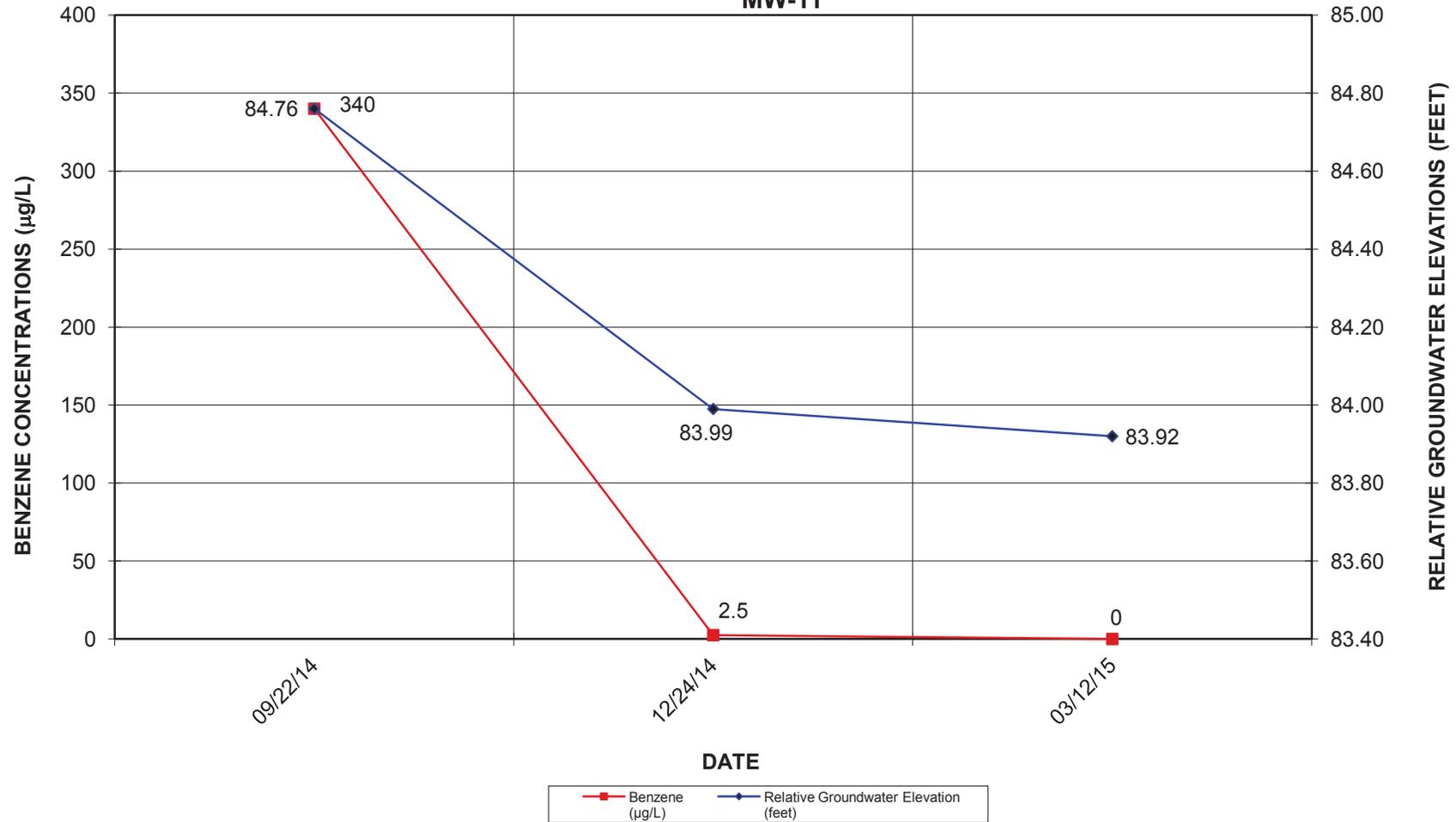
**DISSOLVED BENZENE IN GROUNDWATER ( $\mu\text{g/L}$ ) VS.  
RELATIVE GROUNDWATER ELEVATIONS (FT.) OVER TIME  
MW-08**



**DISSOLVED BENZENE IN GROUNDWATER ( $\mu\text{g/L}$ ) VS.  
RELATIVE GROUNDWATER ELEVATIONS (FT.) OVER TIME  
MW-10**



**DISSOLVED BENZENE IN GROUNDWATER ( $\mu\text{g/L}$ ) VS.  
RELATIVE GROUNDWATER ELEVATIONS (FT.) OVER TIME  
MW-11**



# **ATTACHMENT E**

## **AS/SVE Pilot Test Data**



**SUMMARY OF AIR SPARGE DATA - AS-01 & AS-02**  
**SCHEIDT STATE 3-16J**  
**API# 05-123-11541**  
**SEC. 16 T1N R67W 6PM**  
**LAT/LONG: 40.047641/-104.891013**  
**WELD COUNTY, COLORADO**



**DATE TEST PERFORMED: 07/24/14**

**TEST WELL: AS-01 & AS-02**

Time	MW-03R				MW-01R				MW-02R				MW-04				MW-06				SVE-01				
	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	
Initial	9:30	7.27	0.3	1.11	0	6.52	27	1.13	0	6.27	4.8	0.73	0	7.47	76.4	0.77	0	6.81	0	0.93	0	7.11	0	0.87	0
Final	14:05	7.27	0.0	1.03	0			0.79	0									6.81	0	0.98	0	7.10	0.0	0.81	0

**AS ONLY**

Initial PID at stack:

Initial PID at manifold:

Time	AS-01	AS-01	AS-02	AS-02	Blower Pressure (psi)	MW-01R				MW-02R				MW-04				SVE-01								
						Pressure Applied at Test well (psi)	Flow Rate (scfm)	Pressure Applied at Test well (psi)	Flow Rate (scfm)	Pressure ("H2O)	VOC (ppm-v)	DTW/DTP (feet)	DO (mg/L)	Pressure ("H2O)	VOC (ppm-v)	DTW/DTP (feet)	DO (mg/L)	Pressure ("H2O)	VOC (ppm-v)	DTW/DTP (feet)	DO (mg/L)	Pressure ("H2O)	VOC (ppm-v)	DTW/DTP (feet)	DO (mg/L)	
10:00	9	7.2	7	7.2	18	0.01	1.4	6.52	0.97	0.00	3.10	6.27	0.75	0.02	33.2	7.51	0.67	0.01	0.3	7.12	0.8					
10:30	9	7.2	7	7.2	18	0.01	2.1	6.52	0.93					0.02	38.7	7.51	0.67	0.01	1.3	7.12	0.84					
11:00	7	8	5	8	19	0.02	1.2	6.54	0.60	0.0	0.0	6.28	0.74	0.02	38.6	7.46	0.58	0.02	0.0	7.09	0.77					
11:30	7	8	5	8	19	0.02	1.0	6.54	0.63					0.02	37.2	7.46	0.60	0.02	0.0	7.09	0.79					
12:00	7	8	5	8	19	0.02	1.6	6.53	0.66	0.0	0.0	6.28	0.69	0.02	48.2	7.47	0.64	0.02	0.0	7.09	0.73					
12:30	7	8	5	8	19	0.02	1.0	6.53	0.67					0.02	39.7	7.47	0.67	0.02	0.0	7.09	0.75					
13:00	7	8	5	8	19	0.02	0.8	6.53	0.69	0.0	0.0	6.28	0.66	0.02	29.8	7.47	0.69	0.02	0.0	7.09	0.78					
13:30	7	8	5	8	19	0.02	0.7	6.54	0.72					0.68	0.02	26.7	7.47	0.71	0.02	0.0	7.10	0.74				
14:00	7	8	5	8	19	0.02	0.8	6.53	0.73	0.00	0.00	6.28	0.74	0.02	32.3	7.47	0.70	0.02	0.0	7.10	0.77					

**BREAKTHROUGH PRESSURE:**

Time	Pressure Applied at Well Head (psi)	Flow Rate at Well Head (scfm)
10:00	10	7

Time	Pressure Applied at Well Head (psi)	Flow Rate at Well Head (scfm)

PID = Photoionization detector  
DTP = depth to product  
DTW = depth to water  
VOC = Volatile Organic Compound  
DO = Dissolved Oxygen  
SVE = soil vapor extraction  
> = greater than  
°F = degrees fahrenheit  
NA = Not available

\* H2O = inches of water  
ft/min = feet per minute  
scfm = standard cubic feet per minute  
ppm-v = parts per million by volume  
AS = air sparge  
' = feet  
" = inches  
psi = pounds per square inch  
Pilot Test Equipment:  
AS Compressor:

**NOTES:**

**SUMMARY OF AIR SPARGE DATA - AS-01 & AS-02  
SCHEIDT STATE 3-16J  
API# 05-123-11541  
SEC. 16 T1N R67W 6PM  
LAT/LONG: 40.047641/-104.891013  
WELD COUNTY, COLORADO**



**DATE TEST PERFORMED: 08/26/14**

**TEST WELL: AS-01 & AS-02**

Time		MW-03R				MW-01R				MW-02R				MW-04				MW-06				SVE-01			
		DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H <sub>2</sub> O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H <sub>2</sub> O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H <sub>2</sub> O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H <sub>2</sub> O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H <sub>2</sub> O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H <sub>2</sub> O)
Initial	10:10	8.31	0.1	0.63	0	7.29	5.4	0.38	0	7.07	1.5	0.26	0	8.32	120	0.41	0	7.48	1.1	0.39	0	8.02	8.1	0.3	0
Final	15:10	8.31	0.4	0.55	0	7.28	2.7	0.21	0	7.08	0.9	0.41	0	8.29	62.0	0.34	0	7.46	0	0.35	0	8.01	0.6	0.25	0

**AS ONLY**

Initial PID at stack:

Initial PID at manifold:

Time	AS-01	AS-01	AS-02	AS-02	Blower Pressure (psi)	MW-01R				MW-02R				MW-04				SVE-01			
						Pressure Applied at Test well (psi)	Flow Rate (scfm)	Pressure Applied at Test well (psi)	Flow Rate (scfm)	Pressure ("H <sub>2</sub> O)	VOC (ppm-v)	DTW/DTP (feet)	DO (mg/L)	Pressure ("H <sub>2</sub> O)	VOC (ppm-v)	DTW/DTP (feet)	DO (mg/L)	Pressure ("H <sub>2</sub> O)	VOC (ppm-v)	DTW/DTP (feet)	DO (mg/L)
11:00	7	9	6.5	7.2	15	0.01	4.8	7.27	0.36	0.0	2.40	7.06	0.31	0.02	101.0	8.29	0.36	0.00	0.7	8.09	0.5
11:30	8	8	5	8.2	12	0.01	1.4	7.27	0.38	0.0	0.50	8.31	0.26	0.01	87.8	8.27	0.41	0.10	0.5	8.02	0.64
12:00	7	8	5	9.4	15	0.01	0.0	7.27	0.49	0.0	1.4	7.06	0.55	0.02	101.0	8.28	0.21	0.02	1.1	8.01	0.22
12:30	7	8	5	10	15	0.01	0.1	7.27	0.50	0.0	1.1	7.06	0.45	0.02	98.0	8.27	0.22	0.02	0.9	7.99	0.36
13:00	7	7	5	9	16	0.01	0.0	7.28	0.51	0.0	0.9	7.05	0.36	0.01	99.0	8.26	0.34	0.01	2.1	7.99	0.32
13:30	7	7	5	8.8	15	0.01	0.0	7.28	0.48	0.0	0.9	7.04	0.28	0.02	87.0	8.26	0.27	0.02	1.6	8.01	0.30
14:00	7	7.6	5	9	15	0.02	0.7	7.28	0.20	0.0	0.4	7.04	0.32	0.01	69.0	8.29	0.23	0.01	1.1	7.98	0.18
14:30	7	7	5	9	15	0.02	0.9	7.27	0.43	0.0	0.4	7.04	0.67	0.02	72.0	8.29	0.29	0.01	0.9	7.99	0.29
15:00	7	7.2	5	9	15	0.02	0.4	7.27	0.39	0.0	0.40	7.05	0.58	0.01	84.0	8.27	0.34	0.01	0.8	8.01	0.23

**BREAKTHROUGH PRESSURE:**

Time	Pressure Applied at Well Head (psi)	Flow Rate at Well Head (scfm)
10:50	10	7

Time	Pressure Applied at Well Head (psi)	Flow Rate at Well Head (scfm)

PID = Photoionization detector  
DTP = depth to product  
DTW = depth to water  
VOC = Volatile Organic Compound  
DO = Dissolved Oxygen  
SVE = soil vapor extraction  
> = greater than  
°F = degrees fahrenheit  
NA = Not available

\* H<sub>2</sub>O = inches of water  
ft/min = feet per minute  
scfm = standard cubic feet per minute  
ppm-v = parts per million by volume  
AS = air sparge  
' = feet  
" = inches  
psi = pounds per square inch  
Pilot Test Equipment:  
AS Compressor:

**NOTES:**

**SUMMARY OF AIR SPARGE AND SOIL VAPOR EXTRACTION DATA**  
**SCHEIDT STATE 3-16J**  
**API #05-123-11541**  
**SEC. 16 T1N R67W 6PM**  
**LAT/LONG: 40.047641/-104.891013**  
**WELD COUNTY, COLORADO**

DATE PILOT TEST PERFORMED: 10/16/2014

TEST WELL: AS-01, AS-02, AS-03, SVE-02

Time		MW-01R			MW-02R			MW-03R			MW-04			MW-06			MW-07			MW-08		
		DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)
Initial	9:00	7.88	0.0	4.12	7.69	0.0	4.01	8.76	0.0	1.90	8.92	119	1.38	7.98	0.0	3.89	7.91	0.0	2.33	4.62	8.04	3.88
Final	17:15	7.84	0.1	2.24	7.69	0.0	2.76	8.75	0.0	1.56	8.89	73	1.57	7.98	0.0	2.77	7.90	0.0	2.14	4.66	0.01	0.90

**SVE ONLY**

Initial PID at stack: 0.1 ppm

Initial PID at manifold: N/A

Time	Test Well Vacuum Applied ("H <sub>2</sub> O)	Well Head Velocity (ft/min)	Well Head Flow 2" (scfm)	Well Head Temp (°F)	Effluent Stack Velocity (ft/min)	Effluent Stack Flow (scfm)	Effluent Stack Temp (°F)	Effluent 4" VOC (ppm-v)	Well Head VOC (ppm-v)
10:00	25	2312	50.46	68.5	5.319	520.42	89	0.1	0.1
10:20	33	2826	62.44	69.2	4.928	426	104	0.2	0.4
10:40	40	3054	88.26	70.2	4.744	415	102	0.8	0.9
11:00	45	3231	99.11	70.9	4.821	405	106	1.6	1.5
11:30	50	3526	112.38	74.3	4.544	396	111	1.9	2.6

Distance from SVE to MW (feet)	MW-08		MW-01R		MW-02R		MW-04		
	Time	Vacuum ("H <sub>2</sub> O)	VOC (ppm-v)						
	10:30	0.9	8.0	0.0	0.0	0.0	0.0	0.0	104.8
	10:50	1.1	8.0	0.0	0.0	0.0	0.0	0.0	92
	11:10	0.8	7.1	0.0	0.0	0.0	0.0	0.0	98
	11:30	1.7	6.2	0.0	0.0	0.0	0.0	0.0	96
	12:00	3.4	3.2	0.0	0.0	0.0	0.0	0.0	91

**AS AND SVE**

Initial PID at stack: 0.2 ppm

Initial PID at manifold: N/A

Time	Vacuum Applied at Test Well ("H <sub>2</sub> O)	Effluent Stack Velocity (ft/min)	Effluent VOC (ppm-v)	Pressure Applied at Test Well (psi)	Flow Rate AS (scfm)	Effluent Stack Flow (scfm)	MW-08				MW-04				MW-01R			
							VOC @ Well Head	Flow @ Well Head	Pressure ("H <sub>2</sub> O)	VOC (ppm-v)	VOC @ Well Head	Flow @ Well Head	Pressure ("H <sub>2</sub> O)	VOC (ppm-v)	VOC @ Well Head	Flow @ Well Head	Pressure ("H <sub>2</sub> O)	VOC (ppm-v)
11:30	24	3.921	0.1	8.0	8.8	354	0.0	8.8	0.80	14.1	0.0	10.0	0.00	102.1	0.0	10.0	0.0	0.0
12:00	26	3.826	0.0	8.4	7.6	348	0.0	4.6	0.80	13.5	0.0	10.0	0.0	100.0	0.0	9.6	0.0	0.0
12:30	25	3.854	0.0	8.2	7.8	361	0.0	7.8	0.82	12.8	0.0	10.0	0.0	96.0	0.0	9.6	0.0	0.0
13:00	26	3.671	0.0	8.0	7.4	362	0.0	7.4	0.84	6.4	0.0	10.0	0.0	90.0	0.0	8.8	0.0	0.0
13:30	44	4.213	0.0	6.0	4.4	379	0.0	4.4	0.33	5.0	0.0	10.0	0.0	91.4	0.0	9.0	0.0	0.0
14:00	44	4.112	0.0	5.0	5.2	354	0.0	5.2	0.28	3.2	0.0	10.0	0.0	82.3	0.0	6.8	0.0	0.0
14:30	44	4.096	0.0	5.0	5.4	362	0.0	5.4	0.32	4.4	0.0	10.0	0.0	81.1	0.0	6.6	0.0	0.1
15:00	44	4.281	0.0	5.0	5.2	374	0.0	5.2	0.28	4.2	0.0	10.0	0.0	76.2	0.0	6.8	0.0	0.1
15:30	44	4.129	0.0	5.0	5.8	366	0.0	5.8	0.30	3.8	0.0	10.0	0.0	70.4	0.0	6.8	0.0	0.1
16:00	44	4.213	0.0	5.0	6.0	368	0.0	6.0	0.41	2.1	0.0	9.8	0.0	75.3	0.0	6.8	0.0	0.4
16:30	44	4.167	0.0	5.0	5.8	361	0.0	5.8	0.38	4.1	0.0	9.8	0.0	72.4	0.0	6.8	0.0	0.1
17:00	44	4.103	0.0	5.0	5.8	356	0.0	5.8	0.42	5.2	0.0	9.8	0.0	73.1	0.0	6.8	0.0	0.1

Breakthrough Pressure Chart		
TIME	PRESSURE APPLIED AT WELL HEAD (PSI)	FLOW RATE AT WELL HEAD (SCFM)
11:30	12	6.2
11:35	8	9.5

Breakthrough:

PID = Photoionization detector  
DTP = depth to product  
DTW = depth to water  
VOC = Volatile Organic Compound  
DO = Dissolved Oxygen  
SVE = soil vapor extraction  
> = greater than  
°F = degrees fahrenheit  
NA = Not available

" H<sub>2</sub>O = inches of water  
ft/min = feet per minute  
scfm = standard cubic feet per minute  
ppm-v = parts per million by volume  
AS = air sparge  
' = feet  
" = inches  
psi = pounds per square inch  
\* = Unable to obtain PID reading due to increased flow rate at the well-head manifold

Pilot Test Equipment:  
SVE Blower: Tuthill 15 HP Positive Displacement Blower  
AS Compressor : DLR-100 15HP

SUMMARY OF AIR SPARGE DATA - AS-01, AS-02,AS-03, SVE-02  
SCHEIDT STATE 3-16J  
API# 05-123-11541  
SEC. 16 T1N R67W 6PM  
LAT/LONG: 40.047641/-104.891013  
WELD COUNTY, COLORADO



DATE TEST PERFORMED: 11-25-14

TEST WELL: AS-01,AS-02,AS-03, SVE-02

Time	MW-03R				MW-01R				MW-02R				MW-04R				MW-06				MW-7				MW-8				
	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	
Initial	9:00	9.20	0	2.87	0	8.32	0	4.34	0	8.23	0	4.54	0	9.41	112.8	1.97	0	8.37	0	1.72	0	8.30	0	1.45	0	5.32	0	0.97	0
Final	16:45	9.20	0.0	2.11	0	8.32	0	2.36	0	8.22	0	2.93	0	9.42	91.7	1.74	0	8.38	0	1.53	0	8.31	0	1.41	0	5.35	0	0.95	0

AS & SVE

Time	AS-01		AS-02		AS-03		Blower	SVE	SVE	SVE	MW-08		MW-04		MW-01R		MW-02R	
	Pressure Applied at Test well (psi)	Flow Rate (scfm)	Pressure Applied at Test well (psi)	Flow Rate (scfm)	Pressure Applied at Test well (psi)	Flow Rate (scfm)					PSI	Applied Vacuum ("H2O)	VOC (ppm-v)	Flow Rate (scfm)	Vacuum ("H2O)	VOC (ppm-v)	Pressure ("H2O)	VOC (ppm-v)
10:30	7	7	7	7	7	7	11	45	0	510	0.13	0.00	100.30	0.04	0.00	0.01	0.00	0.01
11:00	7	7	7	7	7	7	11	45	0	502	0.13	0.00	97.50	0.04	0.00	0.01	0.00	0.01
11:30	7	7	7	7	7	7	11	45	0	518	0.13	0.00	82.40	0.04	0.00	0.01	0.00	0.01
12:00	7	7	7	7	7	7	11	45	0	492	0.13	0.00	87.90	0.04	0.00	0.01	0.00	0.01
12:30	7	7	7	7	7	7	11	45	0	520	0.13	0.00	112.30	0.04	0.00	0.01	0.00	0.01
13:00	7	7	7	7	7	7	11	45	0	481	0.13	0.00	101.50	0.04	0.00	0.01	0.00	0.01
13:30	7	7	7	7	7	7	11	45	0	479	0.15	0.00	104.60	0.04	0.00	0.01	0.00	0.01
14:00	7	7	7	7	7	7	11	45	0	507	0.15	0.00	92.70	0.01	0.00	0.01	0.00	0.01
14:30	7	7	7	7	7	7	11	45	0	476	0.15	0.00	95.60	0.01	0.00	0.01	0.00	0.01
15:00	7	7	7	7	7	7	11	45	0	496	0.15	0.00	107.60	0.01	0.00	0.01	0.00	0.01
15:30	7	7	7	7	7	7	11	45	0	501	0.15	0.00	85.50	0.01	0.00	0.01	0.00	0.01
16:00	7	7	7	7	7	7	11	45	0	505	0.15	0.00	131.30	0.01	0.00	0.01	0.00	0.01
16:30	7	7	7	7	7	7	11	45	0	515	0.15	0.00	124.80	0.01	0.00	0.01	0.00	0.01

PID = Photoionization detector  
DTP = depth to water  
VOC = Volatile Organic Compound  
DO = Dissolved Oxygen  
SVE = soil vapor extraction  
> = greater than  
\*F = degrees fahrenheit  
NA = Not available

" H2O = inches of water  
ft/min = feet per minute  
scfm = standard cubic feet per minute  
ppm-v = parts per million by volume  
AS = air sparge  
' = feet  
" = inches  
psi = pounds per square inch  
Pilot Test Equipment:  
SVE Blower: Tutthill 15 HP Positive Displacement Blower  
AS Compressor : DLR-100 15HP

**SUMMARY OF AIR SPARGE DATA - AS-01, AS-02,AS-03, SVE-02  
SCHEIDT STATE 3-16J  
API# 05-123-11541  
SEC. 16 T1N R67W 6PM  
LAT/LONG: 40.047641/-104.891013  
WELD COUNTY, COLORADO**



**DATE TEST PERFORMED: 1-14-15**

**TEST WELL: AS-01,AS-02,AS-03, SVE-02**

Time	MW-03R				MW-01R				MW-02R				MW-04R				MW-06				MW-7				MW-8				
	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	
Initial	8:00	9.69	0.1	2.91	0	8.77	0.6	4.41	0	8.67	0.0	2.77	0	9.93	95.9	2.15	0	8.77	0.1	2.22	0	8.72	0.1	2.54	0	5.88	3.7	1.77	0
Final	16:15	9.69	0.3	3.45	0	8.77	0.5	2.29	0	8.65	0.2	2.48	0	9.92	115	2.37	0	8.77	0.5	2.19	0	8.71	0.2	2.29	0	5.85	1.5	1.65	0

**AS & SVE**

Time	AS-01		AS-02		AS-03		Blower	SVE	SVE STACK	SVE	SVE Well Head	SVE Well Head	MW-06		MW-04		MW-01R		MW-02R	
	Pressure Applied at Test well (psi)	Flow Rate (scfm)	Pressure Applied at Test well (psi)	Flow Rate (scfm)	Pressure Applied at Test well (psi)	Flow Rate (scfm)							PSI	Applied Vacuum ("H2O)	VOC (ppm-v)	Flow Rate (scfm)	VOC (ppm-v)	Flow Rate (scfm)	Vacuum ("H2O)	VOC (ppm-v)
10:00	6	7	6	7	6	7	11	45.00	0.30	435.83	n/a*	110.29	0.31	1.80	107.00	0.01	0.70	0.01	0.30	0.00
10:30	5	7	5	7	5	7	10	45.00	0.00	516.30	n/a*	181.16	0.29	0.70	104.00	0.01	0.60	0.01	0.30	0.01
11:00	5	7	5	7	5	7	10	45.00	0.00	482.36	n/a*	132.34	0.26	0.80	100.00	0.01	0.60	0.01	0.20	0.01
11:30	5	7	5	7	5	7	10	45.00	0.00	482.21	n/a*	129.03	0.26	0.80	105.00	0.01	0.60	0.01	0.20	0.01
12:00	5	7	5	7	5	7	10	45.00	0.00	480.70	n/a*	127.42	0.26	0.70	101.00	0.01	0.70	0.01	0.50	0.01
12:30	5	7	5	7	5	7	10	45.00	0.00	487.63	n/a*	114.76	0.24	0.90	102.00	0.01	0.70	0.01	0.30	0.01
13:00	5	7	5	7	5	7	10	45.00	0.00	472.46	n/a*	126.17	0.24	0.70	107.00	0.01	0.80	0.01	0.40	0.01
13:30	5	7	5	7	5	7	10	45.00	0.00	484.20	n/a*	118.31	0.24	0.70	104.00	0.01	0.90	0.01	0.40	0.01
14:00	5	7	5	7	5	7	10	45.00	0.00	480.53	n/a*	116.77	0.24	0.20	111.00	0.01	0.60	0.01	0.20	0.01
14:30	5	7	5	7	5	7	10	45.00	0.00	481.73	n/a*	117.83	0.24	0.20	104.00	0.01	0.50	0.01	0.20	0.01
15:00	5	7	5	7	5	7	10	45.00	0.00	485.62	n/a*	121.77	0.24	0.20	103.00	0.01	0.50	0.01	0.20	0.01
15:30	5	7	5	7	5	7	10	45.00	0.00	488.13	n/a*	118.71	0.24	0.40	109.00	0.01	0.70	0.01	0.30	0.01
16:00	5	7	5	7	5	7	10	45.00	0.00	477.20	n/a*	122.61	0.24	0.30	107.00	0.01	0.70	0.01	0.30	0.01

PID = Photoionization detector  
DTP = depth to product  
DTW = depth to water  
VOC = Volatile Organic Compound  
DO = Dissolved Oxygen  
SVE = soil vapor extraction  
> = greater than  
°F = degrees fahrenheit  
n/a = Not available  
\* = Too much flow for PID vacuum to overcome

\* H2O = inches of water  
ft/min = feet per minute  
scfm = standard cubic feet per minute  
ppm-v = parts per million by volume  
AS = air sparge  
" = feet  
" = inches  
psi = pounds per square inch  
Pilot Test Equipment:  
SVE Blower: Tuthill 15 HP Positive Displacement Blower  
AS Compressor : DLR-100 15HP

SUMMARY OF AIR SPARGE DATA - AS-01, AS-02,AS-03, SVE-02  
SCHEIDT STATE 3-16J  
API# 05-123-11541  
SEC. 16 T1N R67W 6PM  
LAT/LONG: 40.047641/-104.891013  
WELD COUNTY, COLORADO



DATE TEST PERFORMED: 2-5-15

TEST WELL: AS-01,AS-02,AS-03 & SVE-02

Time	MW-03R				MW-01R				MW-02R				MW-04R				MW-06				MW-7				MW-8				
	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	DTW/DTP (feet)	VOC (ppm-v)	DO (mg/L)	Pressure ("H2O)	
Initial	8:45	9.80	0.0	2.1	0	8.85	0.2	2.01	0	8.74	0.0	1.83	0	10.03	138	1.53	0	8.85	0.0	1.27	0	8.80	0.0	1.60	0	5.97	4.3	0.66	0
Final	16:10	9.77	0.0	1.68	0	8.81	0.5	1.35	0	8.72	0.0	1.28	0	10.01	119	1.46	0	8.82	0.0	1.18	0	8.77	0.3	1.16	0	5.94	0.5	1.10	0

AS & SVE

Time	AS-01		AS-02		AS-03		Blower	SVE	SVE STACK	SVE	SVE Well Head	SVE Well Head	MW-08		MW-04R		MW-01R		MW-02R	
	Pressure Applied at Test well (psi)	Flow Rate (scfm)	Pressure Applied at Test well (psi)	Flow Rate (scfm)	Pressure Applied at Test well (psi)	Flow Rate (scfm)							PSI	Applied Vacuum ("H2O)	VOC (ppm-v)	Flow Rate (scfm)	VOC (ppm-v)	Flow Rate (scfm)	Vacuum ("H2O)	VOC (ppm-v)
9:45	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.30	493.40	N/A	130.22	-0.35	5.60	145.00	0.01	1.00	0.01	0.50	0.00
10:15	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.20	483.00	N/A	121.75	-0.44	5.80	128.00	0.01	1.30	0.01	0.30	0.00
10:45	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.20	451.70	N/A	127.4	-0.44	0.50	125.00	0.01	1.10	0.01	0.20	0.01
11:15	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.40	509.07	N/A	119.6	-0.36	0.20	104.00	0.01	0.90	0.01	0.00	0.01
11:45	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.40	501.00	N/A	121.7	-0.36	0.30	102.00	0.01	0.60	0.01	0.00	0.01
12:15	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.00	507.58	N/A	123.5	-0.34	0.30	66.40	0.01	0.40	0.01	0.00	0.01
12:45	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.00	505.12	N/A	129.3	-0.34	0.20	57.50	0.01	0.20	0.01	0.00	0.01
13:15	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.00	496.02	N/A	110.9	-0.34	0.30	98.50	0.01	0.20	0.01	0.00	0.01
13:45	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.00	477.77	N/A	97.55	-0.34	0.40	98.60	0.01	0.20	0.01	0.00	0.01
14:15	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.00	484.42	N/A	121.29	-0.30	0.20	108.00	0.01	0.40	0.01	0.00	0.01
14:45	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.00	488.21	N/A	120.77	-0.30	0.10	101.00	0.01	0.60	0.01	0.00	0.01
15:15	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.00	485.36	N/A	118.11	-0.30	0.10	107.00	0.01	0.90	0.01	0.00	0.01
15:45	5.00	7.00	5.00	7.00	5.00	7.00	10.0	45.00	0.00	484.99	N/A	114.83	-0.20	0.30	110.00	0.01	1.10	0.01	0.00	0.01

PID = Photoionization detector  
DTP = depth to product  
DTW = depth to water  
VOC = Volatile Organic Compound  
DO = Dissolved Oxygen  
SVE = soil vapor extraction  
> = greater than  
°F = degrees Fahrenheit  
n/a = Not available  
\* = Too much flow for PID vacuum to

" H2O = inches of water  
ft/min = feet per minute  
scfm = standard cubic feet per minute  
ppm-v = parts per million by volume  
AS = air sparge  
" = feet  
" = inches  
psi = pounds per square inch  
Pilot Test Equipment:  
SVE Blower: Tuthill 15 HP Positive Displacement Blower  
AS Compressor : DLR-100 15HP