

December 2, 2019

Mr. Jacob Evans
Noble Energy Inc.
2115 117th Avenue
Greeley, CO 80631

Subject: **Third Quarter 2019 Site Monitoring and Remediation Report**
 Plugged and Abandoned FRI 2-18 Tank Battery and Wellhead Location
 API # 05-001-08259
 Remediation Project # 8440
 Adams County, Colorado

Dear Mr. Evans:

Please find the enclosed copy of the above-referenced Third Quarter 2019 Site Monitoring and Remediation Report for the Plugged and Abandoned FRI 2-18 Tank Battery and Wellhead Location in Adams County, Colorado. The enclosed report describes groundwater sampling and remediation system operation and maintenance (O&M) activities conducted during the Third Quarter 2019, in accordance with the previously submitted Form 27 (COGCC document # 2148980).

While reviewing the Third Quarter Report, Tasman discovered an error in the calculation being used to determine the petroleum hydrocarbon mass being removed by the total fluid extraction system. The calculation error was caused by incorrectly converting the laboratory data. The calculation was using laboratory data in milligrams per liter (mg/L) when petroleum hydrocarbon concentrations should have been input in micrograms per liter (ug/L). The calculation has been corrected and the mass removal totals provided on page 9 in the Second and Third Quarter 2019 Site Monitoring Reports are updated. Tasman apologizes for the calculation error.

Please contact me at (720) 431-1190 if you require additional information.

Tasman appreciates the opportunity to provide this service.

Sincerely,
Tasman Geosciences, Inc.



Brandon Bruns
Project Manager

Enclosure: Third Quarter 2019 Site Monitoring & Remediation Report

PLUGGED & ABANDONED FRI 2-18 TANK BATTERY & WELLHEAD LOCATION

THIRD QUARTER 2019 SITE MONITORING AND REMEDIATION REPORT

September 4, 2019



PREPARED ON BEHALF OF

Noble Energy Inc.
2115 117th Avenue
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PREPARED BY

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1.0 INTRODUCTION

This Site Monitoring and Remediation Report (Report) presents the results of groundwater sampling and remediation system operation and maintenance (O&M) activities performed at the Plugged and Abandoned FRI 2-18 Tank Battery and Wellhead Location (Site). Field activities detailed in this report were performed on behalf of Noble Energy, Inc. (Noble), pursuant to Colorado Oil and Gas Conservation Commission (COGCC) guidance.

Field activities described in this Report were conducted by Tasman Geosciences, Inc. (Tasman) to further evaluate groundwater flow characteristics and groundwater quality at the Site. The data collected were used to maintain and optimize remediation system operations, develop the analytical summary tables, groundwater and LNAPL elevation maps, and chemical concentration maps presented herein.

1.1 Site Background

The Site is in Section 18, Township 1 South, Range 67 West, of the 6th Principal Meridian, on 144th Avenue, in the town of Thornton in Adams County, Colorado (see Figure 1). The Site surrounds the former FRI 2-18 wellhead and tank battery and is approximately 950 feet (ft.) north of 144th Avenue and 1,200 ft. west of Holly Street. The approximate coordinates of the Site are 39.960732°, -104.926776°.

On November 4, 2013 Noble was informed of the suspected release. Subsequently, Noble filed a Form 19 Spill/Release Report (Form 19) with the COGCC for the incident. On November 13, 2013 the Form 19 was received by the COGCC and the incident was designated Spill/Release Tracking Number 2147193 and Remediation Number 8440.

Based on procedures established via the Form 19 process, Noble conducted subsurface Site assessment activities from October 2013 through April 2014 in order to delineate the extent of petroleum hydrocarbon impacts at the Site. On May 9, 2014 Noble submitted a Form 27 Site Assessment Report (Document Number 2148980) for COGCC review. Subsequently, COGCC approved the Form 27, closed out Spill/Release Tracking Number 2147193, and continued remediation, monitoring and reporting for the project under Remediation Number 8440.

A total of 49 monitoring wells were installed at the Site throughout the assessment phase. The locations of these monitoring wells are presented in Figure 2. Laboratory analytical data for soil samples collected during the monitoring well installation are reported in the Site Assessment Report and 4Q2017 Remediation Progress Report (Document Number 401524920) submitted on January 24, 2018. Total petroleum hydrocarbon (TPH) concentrations are reported in Figure 5 of those documents. In addition to groundwater and soil assessment activities, Noble initiated interim corrective measures to reduce the presence of LNAPL in the central region of the Site.

1.2 Site Topography, Geology, and Hydrogeology

The Site is positioned at approximately 5,246 ft. above mean sea level (AMSL). Surface topography slopes gradually to the north across the Site with minor depressions evident across the ground surface. Regional topography slopes to the north and northwest from a high point approximately 2,000 ft. south of 144th Avenue. Surface drainage features are evident to the north and east of the Site and follow a general northeast – southwest trend.

Site assessment borings indicate that the subsurface geology immediately beneath the Site is composed of unconsolidated alluvial sediments and evaporite deposits overlying consolidated sedimentary rock. The upper unconsolidated unit is observed from ground surface to approximately 35 ft. below ground surface (bgs) and consists of interbedded clays (CL), fine, medium, and coarse grain sands (SC, SP, SW), and zones of accreted caliche. The alluvial and precipitated sediments are underlain by interbedded sandstone and claystone encountered at approximately 35 ft. bgs. The depth of the competent bedrock surface observed in the majority of the borings varies from approximately 25 to 40 ft. bgs across the Site and is generally characterized by a poorly cemented fractured sandstone layer approximately 10 to 15 ft. thick underlain by claystone. Claystone dominates the consolidated interval in the southeastern and eastern portions of the Site, while sandstone is the predominant consolidated lithology noted across the central and western regions. Thickening of the sandstone layer appears to follow a north - south trend across the area of concern. Two wells, SB06 and SB17, did not encounter bedrock. Boring logs for monitoring wells SB01 through SB42 are included in Attachments A and B of the Form 27 Site Assessment Report (Document Number 2148980) submitted to the COGCC on May 9, 2014.

The groundwater table is generally encountered between 40 and 50 ft. bgs within the consolidated sedimentary rock units. Groundwater flow appears preferential to the poorly cemented sandstone layer and appears to be preferentially bound to the central and western portions of the Site. This preferential flow and accumulation is further evidenced by dry and slow re-charging wells in the southeast and eastern portions of the Site (predominated by the lower permeability claystone lithology). Well yields across the majority of the Site are relatively low, consistent with a consolidated bedrock aquifer; however, higher flow rates have been observed, suggesting secondary flow pathways and geologic structures may be contributing factors in groundwater transport.

2.0 GROUNDWATER SAMPLING ACTIVITIES

This section summarizes the groundwater sampling activities that were performed, and the protocols followed during groundwater monitoring activities conducted by Tasman during the Third Quarter 2019. Sampling activities included measurement of groundwater and LNAPL depths, measurement of groundwater quality parameters, and collection of groundwater samples from Site monitoring wells.

2.1 Groundwater Sample Locations

Throughout the Site assessment, monitoring wells SB16, SB22, SB24, SB25, SB27, and SB28 have failed to produce sufficient water for well development or sampling activities. Review of the boring logs shows that construction of these wells was either too shallow or completed in an area of low permeability. These wells were abandoned in June 2015 following review of all previous Site field and laboratory analytical data.

Monitoring well SB20R was abandoned in June 2015, following review of all previous Site field and laboratory analytical data. In prior sampling events, SB20R was not sampled due to the immediate proximity of SB20. Monitoring wells SB01 and SB02 were consistently found to contain groundwater levels above the perforated interval of the well casing. These wells were abandoned in June 2015, following review of all previous Site field and laboratory analytical data.

Monitoring well SB16 has failed to produce sufficient water to sample since its installation. In January 2014 monitoring well SB16 was abandoned and monitoring well SB16R was drilled as a replacement. However, the casing of SB16R was damaged and the well could not be gauged or sampled. In April 2017 monitoring well SB16R was abandoned and monitoring well SB16R2 was installed. Monitoring well SB23 also failed to produce sufficient water for sampling and was abandoned in April 2017. Monitoring well SB23R was drilled as a replacement in April 2017. The COGCC approved removal of periphery wells (SB18, SB24R, SB26, SB29, SB33, SB34, SB35, SB40, SB41, and SB42) from the monitoring network on April 4, 2017.

2.2 Groundwater and LNAPL Gauging

Groundwater levels are measured (i.e. gauged) in order to evaluate hydraulic characteristics and to provide information regarding seasonal and annual fluctuations in groundwater elevations at the Site. Groundwater and LNAPL levels were measured on the north side of the well casing to the nearest 0.01-foot using a float driven oil-water interface probe (IP). Groundwater and LNAPL level data were subsequently converted to elevations (ft. AMSL) by subtracting the measured depth from the well's top-of-casing (TOC) elevation survey datum. Groundwater elevations for wells exhibiting detectable LNAPL levels were corrected for the effects of LNAPL depression of the potentiometric surface. These groundwater elevations were corrected using the following formula:

$$\begin{aligned} & (\text{Top of Casing Elevation} - \text{Measured Depth to Water}) \\ & + \frac{(\text{LNAPL Thickness in Well} \times \text{LNAPL Relative Density})}{1} \\ & = \text{Corrected Groundwater Elevation} \end{aligned}$$

An LNAPL relative density of 0.75 was used, based on petrophysical quantitation conducted during the initial Site assessment.

Third Quarter 2019's site-wide groundwater monitoring and associated events were conducted between August 8, 2019 and September 3, 2019. The following sections discuss the field and laboratory analytical procedures followed during this event.

- On August 8, 2019, all product recovery pumps were removed from recovery wells to allow for LNAPL gauging to be completed in the product recovery wells during the groundwater sampling event
- On August 19, 2019, the Site remediation system (System) was shut off to allow Site subsurface conditions to equilibrate prior to conducting the groundwater sampling event.
- On August 23, 2019, a Site-wide fluid level gauging event was conducted. Groundwater and LNAPL measurements were collected from all Site monitoring and product recovery wells. Monitoring wells SB24R was unable to be gauged due to housing development construction activities adjacent to the Site.
- On August 23, 2019, HydraSleeve groundwater sampling devices were deployed in all Site monitoring wells exhibiting the required conditions described in Section 2.3. Wells receiving HydraSleeves included:

• SB03	• SB04	• SB06	• SB07
• SB08	• SB10	• SB11	• SB12
• SB13	• SB14	• SB15	• SB17
• SB19	• SB20	• SB22R	• SB25R
• SB27R	• SB28R	• SB36	• SB38
• SB39			
- On August 26, 2019, the HydraSleeves were retrieved from the monitoring wells listed above and groundwater samples were collected and submitted for laboratory analysis. At the same time, field groundwater quality parameters were gauged in-situ at the well locations listed above except SB28R. Monitoring well SB28R contained an obstruction that allowed a HydraSleeve past but blocked the deployment of the In-Situ Smart Troll probe. During sample collection, five monitoring wells (SB06, SB13, SB14, SB17 and SB38) were unable to be sampled due HydraSleeve equipment malfunction. On August 30, 2019, HydraSleeves were redeployed in the five wells and were sampled September 3, 2019.

Groundwater quality measurements were collected in the field following groundwater sample collection using a Smart Troll multi-parameter instrument with a 100 ft. tethered probe to allow for in-situ measurements. Field measurements for temperature, electrical conductivity (EC), pH, oxidation reduction potential (ORP), and dissolved oxygen (DO) were measured in-situ at monitoring wells with sufficient groundwater column. These measurements were not collected from monitoring locations exhibiting detectable levels of LNAPL.

2.3 Groundwater Sample Collection

Prior to collecting groundwater laboratory analytical samples, groundwater and LNAPL levels were measured at each of the Site monitoring wells, as previously described. The presence of

LNAPL was evaluated and wells exhibiting detectable levels of LNAPL were removed from the laboratory analytical sample collection list.

Groundwater monitoring wells were sampled using individual, disposable, HydraSleeve sample collection devices. Evaluation of the water column height within the well was performed prior to sampler placement in order to maintain sample consistency from well to well and between subsequent sample collection events. HydraSleeves were deployed in a manner limiting sample collection to the top four feet of the water column by restricting the length of the HydraSleeve retrieval tether to no more than four feet longer than the measured depth to water. The procedural basis for how groundwater samples were collected using HydraSleeve sample collection devices is provided below:

- Samples collected from monitoring wells with a water column height greater than or equal to seven ft. were sampled using a standard 2-inch HydraSleeve (2.5 inches [W] x 30 inches [L]) with five ounce (oz.) (2.5 inches [L]) bottom weights attached via a 2-inch stainless steel clip.
- Samples collected from monitoring wells with a water column height less than seven ft. and greater than two ft. were sampled using a standard 2-inch HydraSleeve (2.5 inches [W] x 30 inches [L]) with five oz. (2.5 inches [L]) bottom weights attached via a 2-inch stainless steel clip. Due to the reduced water column height, HydraSleeves were deployed with a 16 oz. top weight, intended to keep the valve inlet positioned within four ft. of the phreatic surface.
- Monitoring wells with a water column height less than 2 ft. were not sampled as per the Site standard operating procedures due to insufficient sample volume.

Retrieval of the HydraSleeves and collection of the laboratory samples was performed no earlier than 48 hours and no later than 96 hours subsequent to HydraSleeve deployment. Clean sample containers (40-milliliter [ml] volatile organic analysis [VOA] vials) supplied by the analytical laboratory were used to contain liquid for subsequent analyses. VOA vials were overfilled and capped to reduce the potential for any headspace and to prevent the loss of volatile analytes. Sample bottles were then labeled with corresponding date, time and well identification, and placed in an ice-filled cooler and maintained at approximately 4 degrees Celsius (°C) for transportation. The groundwater samples were packed and delivered for analysis under chain-of-custody procedures to the contract laboratory.

Groundwater samples were submitted to Summit Scientific (Summit) Laboratory in Golden, Colorado for analysis of benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX) using United States Environmental Protection Agency (USEPA) Method 8260B.

A total of 26 field groundwater samples, one duplicate field groundwater sample, and two trip blank samples were collected over the course of this sampling event. Groundwater sample quality assurance/quality control (QA/QC) procedures were performed via a two-step process. Laboratory QA/QC was performed in accordance with the laboratory's standard internal QA/QC

program. Following receipt of laboratory analytical data reports, Tasman performed an internal QA/QC evaluation. The trip blank sample analysis indicated that no detectable concentration of BTEX constituents were present in the sample.

Project documentation and records were generated as appropriate during the field effort and are being maintained. Overall, the data generated by this project is deemed acceptable for use, with laboratory qualifications as applied.

3.0 GROUNDWATER SAMPLING RESULTS

This section presents the results of the Third Quarter 2019 groundwater sampling activities described above.

3.1 Fluid Level Measurements

Fluid elevation data generated from the Site-wide groundwater and LNAPL gauging event conducted on August 23, 2019 was processed and converted to piezometric elevation in ft. AMSL. The data collected from this event were then used for Site hydrogeologic evaluation purposes. This evaluation was particularly focused on delineation of the LNAPL plume present across the central region of the Site as well as the flow characteristics of groundwater and dissolved phase contaminant migration. Groundwater elevations and LNAPL thicknesses are presented in Table 1 and LNAPL thicknesses are illustrated in Figure 3. Figure 3 also illustrates LNAPL thickness across the Site for the corresponding quarter of previous two years.

LNAPL was detected on August 23, 2019 in seven Site monitoring wells (SB05, SB09, SB16R2, SB23R, SB30, SB31 and SB37). Product thickness in these wells ranged from 0.08 ft. at SB09 and SB23R to 3.00 ft. at SB31. LNAPL was also detected in 22 product recovery wells (PR01-PR16, PR18, PR19, PR23-PR26), at thicknesses ranging from 0.01 feet in PR02, PR23, and PR26 to 0.92 feet in PR10. LNAPL thickness measured during the Third Quarter 2019 sampling event across the Site is illustrated in the bottom third of Figure 3.

During the August 23, 2019 gauging event, groundwater elevations ranged from a low of 5,197.08 ft. AMSL in PR15 to a high of 5,215.54ft. AMSL in SB12. Monitoring wells SB21 and SB32 were both gauged as dry. Hydraulic analysis of the groundwater elevation data generated for the Site was used to create a groundwater potentiometric surface contour map. These contours show hydraulic gradient components flowing to the southwest, west, and south. The average hydraulic gradient across the Site was calculated at approximately 0.07 feet per foot between PR15 and SB12. Groundwater potentiometric surface contours are illustrated in Figure 4. Monitoring wells marked as abandoned on Figure 2 as well as those containing less than 0.5 ft. of groundwater column were not used for contouring purposes.

3.2 Groundwater Quality Parameter Measurements

Field groundwater quality parameters (temperature, EC, pH, ORP, and DO) were measured in-situ at the Site on August 30, 2019 following groundwater sample collection. A summary of field groundwater quality parameter measurements collected by Tasman is presented below and in Table 2:

- Groundwater temperature measurements at the Site ranged from 13.37 degrees Celsius (°C) at SB38 to 21.45°C at SB08, with an average temperature of 16.04°C.
- Groundwater EC measurements at the Site ranged from 0.3716 millisiemens per centimeter (mS/cm) at SB19 to 5.842 mS/cm at SB10, with an average EC of 3.372 mS/cm.
- Groundwater pH measurements at the Site ranged from 7.27 at SB08 to 8.32 at SB19, with an average pH of 7.68.
- Groundwater ORP measurements at the Site ranged from -105.9 millivolts (mV) at SB10 to 232 mV at SB36, with an average ORP of 77.85 mV.
- Groundwater DO measurements at the Site ranged from 0.08 milligrams per liter (mg/L) at SB10 to 4.49 mg/L at SB36, with an average DO of 1.10 mg/L.

3.3 Laboratory Analytical Results

Groundwater laboratory analytical data is presented in Table 3. The laboratory analytical report is provided in Attachment A. A summary of the groundwater laboratory analytical data collected by Tasman is presented below:

- Benzene was detected above the COGCC Table 910-1 standard of 5 micrograms per liter (µg/L) in three of the 21 Site monitoring wells sampled (SB07, SB08 and SB10) in addition to the DUP sample collected from SB07. Benzene concentrations associated with these three monitoring wells ranged from 230 µg/L in SB10 to 2,600 µg/L in SB07 DUP sample. Benzene analytical results and isoconcentration contours indicating the area where benzene concentrations exceed the COGCC regulatory standard are illustrated in Figure 5.
- Toluene was not detected above the COGCC Table 910-1 standard of 560 µg/L in any of the 21 Site monitoring wells sampled.
- Ethylbenzene was not detected above the COGCC Table 910-1 standard of 700 µg/L in any of the 21 Site monitoring wells sampled.
- Total xylenes were detected above the COGCC Table 910-1 standard of 1,400 µg/L in the SB08 and SB07 DUP samples. The total xylenes concentration associated with the SB08 sample was 7,200 µg/L and the SB07 DUP sample was 9,600 µg/L.

4.0 INTERIM REMEDIAL ACTION

This section summarizes remediation activities conducted at the Site from November 2013 to May 2015. Concurrently, a full-scale remediation system was designed and constructed. Interim remedial measures were suspended between June 2015 and February 2016 due to construction activities and final completion of the full-scale system. Construction of the full-scale system was completed on February 22, 2016.

4.1 Interim LNAPL Recovery

Four Clean Earth Technology Magnum Spill Buster (Spill Buster[s]) automated LNAPL pumping systems were installed at the Site between November 2013 and May 2015. The pumps were specifically designed to remove LNAPL from the water table.

Due to the lack of electrical service at the Site, Spill Buster pumps were operated through the use of solar power. Recovered LNAPL was pumped into 250-gallon polyethylene tanks dedicated to each pumping unit. Once full, LNAPL holding tanks were emptied using a vacuum truck and the fluid was transported to a licensed E&P waste facility for disposal.

Spill Buster systems were removed from the Site in May of 2015. A total of approximately 1,960 gallons of LNAPL were recovered between November 2013 and May 2015.

5.0 REMEDIATION SYSTEM OPERATION

The System is capable of automated LNAPL recovery using a pneumatic pumping system, soil vapor extraction (SVE), and total fluids recovery (TFE). The System was designed to operate in a phased remediation sequence starting with LNAPL recovery, transitioning to SVE, and finally TFE. The LNAPL recovery portion of the System has been in operation since first quarter 2016 and the SVE was brought online during the first quarter of 2018. The TFE portion of the System was made operational in the fourth quarter of 2018.

5.1 LNAPL and Spill Buster Recovery

The LNAPL recovery component of the System was put into 24-hour operation on February 29, 2016. The LNAPL recovery system consists of up to 15 pneumatic Genie pumps coupled with SPG4 LNAPL skimmers manufactured by QED Environmental Systems. In addition, two Spill Busters have been periodically operated at wells SB05, SB09, SB21, SB30, and SB31 in conjunction with the full-scale LNAPL recovery System described above. The purpose of Spill Buster operation was to augment LNAPL recovery outside the core product recovery (PR) well network. Operation of the Spill Buster units was ceased on February 20, 2019 due to the low LNAPL recovery rates observed from the target LNAPL recovery wells. Site monitoring wells will continue to be monitored for LNAPL thickness as a part of routine field activities. Spill Busters and/or passive recovery bailers may be re-deployed if necessary, based on LNAPL thickness data.

From June 1, 2019 through August 31, 2019, five LNAPL Genie pumps were in operation at product recovery wells PR12, PR14, PR16, PR25, and PR26. Operation of these five pumps during the third quarter 2019 generated 372.9 gallons of impacted groundwater and 19.6 gallons of LNAPL.

5.2 TFE Operations

The TFE recovery component of the System was put into 24-hour operation on November 16, 2018 and consisted of two TFE pumps manufactured by QED Environmental Systems. On March 11, 2019, two additional TFE pumps were added to the system. During the third quarter reporting period, TFE pumps were installed into wells PR04, PR10, PR15 and PR17. From June 1, 2018 to August 19, 2019 the TFE flow rate averaged approximately 114.4 gallons per day (0.08 gallons per minute) and generated a total of approximately 7,593.6 gallons of groundwater. The average TFE extraction rate from January 4, 2019 through August 19, 2019 is illustrated on Figure 7. TFE recovery efforts at the Site have produced 18,875 gallons of impacted groundwater and LNAPL since becoming operational in 2018.

Two down-hole In Situ, Inc. TROLL 700 data loggers (Trolls) were installed in wells SB31 and SB37 during the third quarter to monitor changes in groundwater elevation as a part of the TFE pump operations. The Trolls were set approximately one foot above the total depth of the wells. Fluid levels in both observation wells exhibited a 1 to 1.5 foot decline after TFE operations were initiated. The TFE system was shut down at the end of the quarter in preparation for routine groundwater sampling. After shutdown, water levels at the observation wells rebounded 1.4 feet over 30 minutes in well SB31 and 0.6 feet over five days in well SB37. Graphs of the water levels in wells SB31 and SB37 are illustrated in Figures 8 and 9. SB31 is approximately five feet from the closest TFE well (PR15) and SB37 is approximately twelve feet from the nearest TFE well (PR04).

The effluent process stream from the TFE wells were sampled on June 17, 2019, July 1, 2019, and August 13, 2019 and submitted to Summit for analysis of BTEX using USEPA Method 8260B. During the third quarter 2019, benzene concentrations ranged from 3,300 to 7,900 µg/L. Laboratory analytical reports for effluent TFE recovery samples are included in Attachment B. Based on laboratory analytical data, approximately 3.35 pounds (lbs) of dissolved BTEX mass in groundwater has been removed by the TFE system since startup.

The table below summarizes annual fluid recovery volume for each year since fluid recovery efforts were initiated.

Table 4
Remediation System Fluid Recovery

Year	Total Fluids Recovered by Year (gallons)
2013 & 2014	1,703
2015*	257
2016	6,111
2017	3,552
2018	8,278
2019 (through 8/31/19)	18,761

*Full-Scale Remediation System Constructed

In addition to continuous mass removal, LNAPL thicknesses across the Site have continued to decrease as well. Table 5 below summarizes LNAPL thickness trends.

Table 5
Product Recovery Well LNAPL Thickness Trends

LNAPL Thickness Trend	No. of Wells	Average Change in LNAPL Thickness from 2014 (feet)
Decrease	10	-4.84
Increase	7	.20
Non-Detect	9	NA*

*NA: Not Applicable – Well was non-detect** in 2014 and has remained non-detect or fluctuated throughout operations with measurable LNAPL but since returned to non-detect.

**Non- detect means no measurable LNAPL is present in the well.

Figures 10 through 13 illustrate LNAPL thicknesses for the PR wells. LNAPL thickness increases illustrated in the figure are typically experienced when the pumps are shut down during quarterly sampling events and also due to seasonal groundwater fluctuations. Overall, LNAPL thicknesses have been trending down across the Site. The Remediation System has recovered approximately 31,489 gallons of impacted groundwater and approximately 7,172.7 gallons of LNAPL since becoming operational in 2013 (Figure 6). Recovered groundwater and LNAPL are collected in an on-Site holding tank. Vacuum trucks are used to periodically dispose of the recovered fluids at a licensed disposal facility.

5.3 SVE Operations

The SVE system was made operational on March 21, 2018. Operational parameters, subsurface response, VOC concentrations, and VOC emissions are monitored during System SVE operations.

From June 1, 2019 to August 19, 2019 active SVE wells included PR01 – PR19 and PR22 – PR26. During this operational period, the SVE system operated under an average vacuum of -48.6

inches of water column (inWC) and average flow rate of 158.9 cubic feet per minute (cfm). A vacuum survey was conducted on August 5, 2019 to measure induced vacuum and the radius of influence (ROI) achieved from the SVE system. The largest ROI recorded was 46.15 linear feet from recovery well PR22 to monitoring well SB22R with an induced vacuum reading of -3.6 inWC. There were seven other monitoring wells (SB05, SB07, SB09, SB16R, SB23R, SB30 and SB32) that exhibited vacuum influence with an ROI distance ranging from 5.05 to 35.9 linear feet and induced vacuum readings ranging from -1.3 to -6.1 inWC.

Weekly vapor samples were collected June 10 through August 19, 2019 to monitor VOC emissions and adjust system operations if needed. SVE vapor samples were submitted to Pace National Laboratory in Mt. Juliet, Tennessee and analyzed for volatile organic compounds using EPA Method M18 modified. Third quarter 2019 VOC emission concentrations ranged from 391,000 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 1,030,000 $\mu\text{g}/\text{m}^3$ total volatile petroleum hydrocarbons (TVPH). Laboratory analytical reports for System emissions are included in Attachment C.

The System emitted 502.67 lbs of VOCs during the third quarter 2019 (Table 6). The SVE portion of the System has removed an estimated 2,821.07 lbs of VOC mass since startup in 2018. Table 6 summarizes SVE operational data for 2019 as well as total emissions for 2018 and 2019. Figure 14 illustrates the cumulative SVE vapor phase mass removal since startup.

The SVE System air emissions are regulated under CDPHE APEN No. 19AD0037.XP (AIRS ID 777/4495/001). Tasman will continue to operate the SVE portion of the System in 2019 and collect air emission samples that are used to evaluate VOC emissions and ensure the emission rates stay within the APEN permitted threshold. As stated by the APEN, no emission monitoring is required for the operation of the generator.

5.4 Remediation System Operations Conclusions

Trends and conclusions that have been derived from recent operational data collected from the System include:

- Operation of the Spill Busters and the System have been successful at diminishing LNAPL thickness and controlling migration at the Site.
- The LNAPL System has been successful at stabilizing the overall area where LNAPL has been encountered at the Site, especially in the central portion where historically, LNAPL thicknesses have been the greatest.
- The TFE system has enhanced dissolved phase mass removal from the primary source area. Since implementing the four TFE pumps, groundwater recovery volumes have increased significantly along with mass removal.
- The SVE System continues to remove vapor phase mass from the subsurface.

6.0 UPCOMING SITE ACTIVITIES

Anticipated upcoming Site activities for the third quarter 2019 include:

- Operational data, subsurface response, and VOC concentrations will continue to be closely monitored to ensure System operations are optimized;
- LNAPL recovery portion of the System will continue to operate in conjunction with TFE. Periodic well re-development and monthly maintenance will continue to be conducted to optimize LNAPL recovery;
- Complete the Fourth Quarter 2019 groundwater sampling event in November.

TABLES

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR01	04/21/14	45.55	42.20	3.35	50.34	5244.87	5201.83
PR01	05/16/14	43.07	42.74	0.33	50.34	5244.87	5202.04
PR01	08/27/14	42.92	42.20	0.72	50.34	5244.87	5202.49
PR01	11/18/14	42.50	42.32	0.18	50.34	5244.87	5202.50
PR01	02/11/15	43.57	42.54	1.03	50.34	5244.87	5202.07
PR01	05/18/15	43.20	42.39	0.81	50.34	5244.87	5202.27
PR01	08/25/15	39.15	37.57	1.58	49.20	5244.87	5206.91
PR01	11/09/15	NM	NM	NM	NM	5244.87	NM
PR01	02/19/16	NM	NM	NM	NM	5244.87	NM
PR01	05/20/16	NM	NM	NM	NM	5244.87	NM
PR01	08/12/16	36.28	36.19	0.09	49.40	5244.87	5208.66
PR01	11/18/16	36.68	36.40	0.28	NM	5244.87	5208.40
PR01	02/13/17	36.40	36.13	0.27	NM	5244.87	5208.67
PR01	05/09/17	36.61	36.31	0.30	NM	5241.55	5205.17
PR01	08/22/17	35.36	35.17	0.19	NM	5241.55	5206.33
PR01	11/17/17	36.00	35.80	0.20	NM	5241.55	5205.70
PR01	02/23/18	36.36	35.95	0.41	NM	5241.55	5205.50
PR01	05/18/18	36.14	35.75	0.39	NM	5241.55	5205.70
PR01	08/24/18	36.12	35.71	0.41	46.97	5241.55	5205.74
PR01	11/06/18	35.83	ND	0.00	46.97	5241.55	5205.72
PR01	02/22/19	35.83	ND	0.00	NM	5241.55	5205.72
PR01	05/17/19	36.98	ND	0.00	NM	5241.55	5204.57
PR01	08/23/19	37.74	37.29	0.45	47.01	5241.55	5204.15
PR02	04/21/14	45.25	41.40	3.85	51.10	5244.36	5201.99
PR02	05/16/14	43.48	43.42	0.06	51.10	5244.36	5200.92
PR02	08/27/14	43.63	40.71	2.92	51.10	5244.36	5202.92
PR02	11/18/14	44.26	40.39	3.87	51.10	5244.36	5203.00
PR02	02/11/15	43.39	41.78	1.61	51.10	5244.36	5202.17
PR02	05/18/15	43.08	41.45	1.63	51.10	5245.36	5203.50
PR02	08/25/15	39.00	37.33	1.67	49.69	5245.36	5207.61
PR02	11/09/15	NM	NM	NM	NM	5245.36	NM
PR02	02/19/16	NM	NM	NM	NM	5245.36	NM
PR02	05/20/16	NM	NM	NM	NM	5245.36	NM
PR02	08/12/16	36.41	36.30	0.11	46.98	5245.36	5209.03
PR02	11/18/16	36.36	36.35	0.01	NM	5245.36	5209.01
PR02	02/13/17	36.65	36.00	0.65	NM	5245.36	5209.20
PR02	05/09/17	36.23	ND	0.00	NM	5241.46	5205.23
PR02	08/22/17	35.03	35.00	0.03	NM	5241.46	5206.45
PR02	11/17/17	36.21	35.47	0.74	NM	5241.46	5205.81
PR02	02/23/18	35.86	ND	0.00	NM	5241.46	5205.60
PR02	05/18/18	36.06	35.54	0.52	NM	5241.46	5205.79
PR02	08/24/18	35.66	35.64	0.02	47.48	5241.46	5205.82
PR02	11/06/18	35.62	35.60	0.02	47.46	5241.46	5205.86

Table 1-1

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR02	02/22/19	35.57	ND	0.00	NM	5241.46	5205.89
PR02	05/17/19	36.78	ND	0.00	NM	5241.46	5204.68
PR02	08/23/19	37.15	37.14	0.01	47.43	5241.46	5204.32
PR03	11/18/14	47.86	ND	0.00	62.33	Not Surveyed	
PR03	02/11/15	48.30	ND	0.00	62.33	Not Surveyed	
PR03	05/18/15	48.19	ND	0.00	62.33	Not Surveyed	
PR03	08/25/15	44.38	ND	0.00	59.35	Not Surveyed	
PR03	11/20/15	43.82	ND	0.00	59.35	Not Surveyed	
PR03	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR03	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR03	08/12/16	44.18	43.82	0.36	59.38	Not Surveyed	
PR03	11/18/16	42.02	41.52	0.50	NM	Not Surveyed	
PR03	02/13/17	41.94	ND	0.00	NM	Not Surveyed	
PR03	05/09/17	41.56	41.52	0.04	NM	5243.64	5202.11
PR03	08/22/17	41.33	41.11	0.22	NM	5243.64	5202.48
PR03	11/17/17	40.83	40.65	0.18	NM	5243.64	5202.95
PR03	02/23/18	41.05	40.76	0.29	NM	5243.64	5202.81
PR03	05/18/18	40.97	40.57	0.40	NM	5243.64	5202.97
PR03	08/24/18	40.80	40.45	0.35	57.16	5243.64	5203.10
PR03	11/06/18	40.81	40.31	0.50	57.17	5243.64	5203.21
PR03	02/22/19	41.24	ND	0.00	NM	5243.64	5202.40
PR03	05/17/19	40.20	ND	0.00	NM	5243.64	5203.44
PR03	08/23/19	40.41	40.39	0.02	57.16	5243.64	5203.25
PR04	11/18/14	47.86	ND	0.00	62.84	Not Surveyed	
PR04	02/11/15	48.18	ND	0.00	62.84	Not Surveyed	
PR04	05/18/15	48.08	ND	0.00	62.84	Not Surveyed	
PR04	08/25/15	43.85	ND	0.00	59.28	Not Surveyed	
PR04	11/09/15	NM	NM	NM	NM	Not Surveyed	
PR04	02/19/16	NR	ND	0.00	NM	Not Surveyed	
PR04	05/20/16	NR	ND	0.00	NM	Not Surveyed	
PR04	08/12/16	43.81	43.33	0.48	59.37	Not Surveyed	
PR04	11/18/16	40.98	40.95	0.03	NM	Not Surveyed	
PR04	02/13/17	41.62	41.42	0.20	NM	Not Surveyed	
PR04	05/09/17	40.99	40.97	0.02	NM	5243.34	5202.37
PR04	08/22/17	40.70	40.63	0.07	NM	5243.34	5202.69
PR04	11/17/17	40.81	ND	0.00	NM	5243.34	5202.53
PR04	02/23/18	40.33	ND	0.00	NM	5243.34	5203.01
PR04	05/18/18	40.21	ND	0.00	NM	5243.34	5203.13
PR04	08/24/18	40.03	ND	0.00	57.11	5243.34	5203.31
PR04	11/06/18	39.92	ND	0.00	57.14	5243.34	5203.42
PR04	02/22/19	41.12	40.69	0.43	NM	5243.34	5202.54
PR04	05/17/19	39.44	ND	0.00	NM	5243.34	5203.90
PR04	08/23/19	41.24	41.22	0.02	57.13	5243.34	5202.12

Table 1-2

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR05	11/18/14	47.04	ND	0.00	62.64		Not Surveyed
PR05	02/11/15	47.54	ND	0.00	62.64		Not Surveyed
PR05	05/18/15	47.50	47.33	0.17	62.64		Not Surveyed
PR05	08/25/15	43.37	43.12	0.25	59.67		Not Surveyed
PR05	11/20/15	43.40	43.26	0.14	59.67		Not Surveyed
PR05	02/19/16	NM	NM	NM	NM		Not Surveyed
PR05	05/20/16	NM	NM	NM	NM		Not Surveyed
PR05	08/12/16	40.61	40.60	0.01	57.44		Not Surveyed
PR05	11/18/16	40.77	40.18	0.59	NM		Not Surveyed
PR05	02/13/17	40.98	40.79	0.19	NM		Not Surveyed
PR05	05/09/17	40.81	40.25	0.56	NM	5243.20	5202.81
PR05	08/22/17	40.40	39.91	0.49	NM	5243.20	5203.17
PR05	11/17/17	39.71	39.65	0.06	NM	5243.20	5203.54
PR05	02/23/18	40.12	39.62	0.50	NM	5243.20	5203.46
PR05	05/18/18	39.68	39.61	0.07	NM	5243.20	5203.57
PR05	08/24/18	39.79	39.45	0.34	57.50	5243.20	5203.67
PR05	11/06/18	39.87	39.26	0.61	57.52	5243.20	5203.79
PR05	02/22/19	40.25	ND	0.00	NM	5243.20	5202.95
PR05	05/17/19	39.84	ND	0.00	NM	5243.20	5203.36
PR05	08/23/19	40.03	39.78	0.25	57.44	5243.20	5203.36
PR06	11/18/14	46.50	ND	0.00	62.91		Not Surveyed
PR06	02/11/15	47.06	ND	0.00	62.91		Not Surveyed
PR06	05/18/15	46.90	46.86	0.04	62.91		Not Surveyed
PR06	08/25/15	42.37	42.32	0.05	59.73		Not Surveyed
PR06	11/09/15	NM	NM	NM	NM		Not Surveyed
PR06	02/19/16	NM	NM	NM	NM		Not Surveyed
PR06	05/20/16	NM	NM	NM	NM		Not Surveyed
PR06	08/12/16	40.06	39.81	0.25	59.49		Not Surveyed
PR06	11/18/16	40.21	39.55	0.66	NM		Not Surveyed
PR06	02/13/17	40.04	ND	0.00	NM		Not Surveyed
PR06	05/09/17	39.95	39.59	0.36	NM	5242.92	5203.24
PR06	08/22/17	39.62	39.25	0.37	NM	5242.92	5203.58
PR06	11/17/17	39.34	38.82	0.52	NM	5242.92	5203.97
PR06	02/23/18	39.18	39.05	0.13	NM	5242.92	5203.84
PR06	05/18/18	39.15	38.84	0.31	NM	5242.92	5204.00
PR06	08/24/18	38.98	38.88	0.10	57.50	5242.92	5204.02
PR06	11/06/18	39.00	38.72	0.28	57.53	5242.92	5204.13
PR06	02/22/19	39.79	39.44	0.35	NM	5242.92	5203.39
PR06	05/17/19	39.42	ND	0.00	NM	5242.92	5203.50
PR06	08/23/19	39.60	39.47	0.13	57.50	5242.92	5203.42
PR07	11/18/14	46.89	46.03	0.86	62.72		Not Surveyed
PR07	02/11/15	47.40	46.61	0.79	62.72		Not Surveyed
PR07	05/18/15	47.85	46.17	1.68	62.72		Not Surveyed

Table 1-3

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR07	08/25/15	43.27	40.98	2.29	59.45		Not Surveyed
PR07	11/09/15	NM	NM	NM	NM		Not Surveyed
PR07	02/19/16	NM	NM	NM	NM		Not Surveyed
PR07	05/20/16	NM	NM	NM	NM		Not Surveyed
PR07	08/12/16	39.63	39.10	0.53	57.19		Not Surveyed
PR07	11/18/16	39.81	38.83	0.98	NM		Not Surveyed
PR07	02/13/17	40.18	39.11	1.07	NM		Not Surveyed
PR07	05/09/17	40.32	38.70	1.62	NM	5242.62	5203.52
PR07	08/22/17	41.08	38.15	2.93	NM	5242.62	5203.74
PR07	11/17/17	38.66	38.31	0.35	NM	5242.62	5204.22
PR07	02/23/18	39.26	38.30	0.96	NM	5242.62	5204.08
PR07	05/18/18	38.64	38.22	0.42	NM	5242.62	5204.30
PR07	08/24/18	39.73	38.01	1.72	57.20	5242.62	5204.18
PR07	11/06/18	38.54	38.16	0.38	57.21	5242.62	5204.37
PR07	02/22/19	38.98	ND	0.00	NM	5242.62	5203.64
PR07	05/17/19	39.32	39.30	0.02	NM	5242.62	5203.32
PR07	08/23/19	40.08	39.20	0.88	57.22	5242.62	5203.20
PR08	11/18/14	48.95	45.75	3.20	62.90		Not Surveyed
PR08	02/11/15	50.33	46.11	4.22	62.90		Not Surveyed
PR08	05/18/15	52.09	45.20	6.89	62.90		Not Surveyed
PR08	08/25/15	45.95	38.67	7.28	58.92		Not Surveyed
PR08	11/09/15	NM	NM	NM	NM		Not Surveyed
PR08	02/19/16	NM	NM	NM	NM		Not Surveyed
PR08	05/20/16	NM	NM	NM	NM		Not Surveyed
PR08	08/12/16	38.61	38.47	0.14	56.76		Not Surveyed
PR08	11/18/16	38.76	38.36	0.40	NM		Not Surveyed
PR08	02/13/17	38.96	38.47	0.49	NM		Not Surveyed
PR08	05/09/17	38.42	38.39	0.03	NM	5242.35	5203.95
PR08	08/22/17	38.30	38.15	0.15	NM	5242.35	5204.16
PR08	11/17/17	37.83	37.73	0.10	NM	5242.35	5204.60
PR08	02/23/18	38.22	37.88	0.34	NM	5242.35	5204.39
PR08	05/18/18	38.04	37.60	0.44	MN	5242.35	5204.64
PR08	08/24/18	37.85	ND	0.00	56.81	5242.35	5204.50
PR08	11/06/18	37.72	37.69	0.03	56.81	5242.35	5204.65
PR08	02/22/19	38.54	38.28	0.26	NM	5242.35	5204.01
PR08	05/17/19	39.41	ND	0.00	NM	5242.35	5202.94
PR08	08/23/19	40.10	39.47	0.63	56.78	5242.35	5202.72
PR09	11/18/14	60.53	40.81	19.72	65.33		Not Surveyed
PR09	02/11/15	57.77	41.32	16.45	65.33		Not Surveyed
PR09	05/18/15	54.68	40.88	13.80	65.33		Not Surveyed
PR09	08/25/15	44.08	38.86	5.22	65.18		Not Surveyed
PR09	11/09/15	NM	NM	NM	NM		Not Surveyed
PR09	02/19/16	NM	NM	NM	NM		Not Surveyed

Table 1-4

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR09	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR09	08/12/16	38.58	38.23	0.35	62.77	Not Surveyed	
PR09	11/18/16	38.48	38.30	0.18	NM	Not Surveyed	
PR09	02/13/17	39.36	37.93	1.43	NM	Not Surveyed	
PR09	05/09/17	39.02	38.01	1.01	NM	5242.27	5204.01
PR09	08/22/17	39.05	37.63	1.42	NM	5242.27	5204.29
PR09	11/17/17	38.14	37.35	0.79	NM	5242.27	5204.72
PR09	02/23/18	37.90	37.72	0.18	NM	5242.27	5204.51
PR09	05/18/18	37.76	37.39	0.37	NM	5242.27	5204.79
PR09	08/24/18	37.95	37.50	0.45	62.88	5242.27	5204.66
PR09	11/06/18	37.79	37.42	0.37	62.80	5242.27	5204.76
PR09	02/22/19	38.64	37.98	0.66	NM	5242.27	5204.13
PR09	05/17/19	40.34	ND	0.00	NM	5242.27	5201.93
PR09	08/23/19	40.69	40.46	0.23	62.74	5242.27	5201.75
PR10	11/18/14	52.29	43.72	8.57	68.38	Not Surveyed	
PR10	02/11/15	52.40	42.22	10.18	68.38	Not Surveyed	
PR10	05/18/15	54.06	43.55	10.51	68.38	Not Surveyed	
PR10	08/25/15	41.19	39.08	2.11	65.07	Not Surveyed	
PR10	11/09/15	NM	NM	NM	NM	Not Surveyed	
PR10	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR10	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR10	08/12/16	37.76	ND	0.00	62.86	Not Surveyed	
PR10	11/18/16	38.12	37.77	0.35	NM	Not Surveyed	
PR10	02/13/17	37.87	37.75	0.12	NM	Not Surveyed	
PR10	05/09/17	37.94	37.67	0.27	NM	5241.96	5204.22
PR10	08/22/17	37.69	37.33	0.36	NM	5241.96	5204.54
PR10	11/17/17	37.22	36.92	0.30	NM	5241.96	5204.97
PR10	02/23/18	37.71	37.19	0.52	NM	5241.96	5204.64
PR10	05/18/18	37.40	36.90	0.50	NM	5241.96	5204.94
PR10	08/24/18	37.11	ND	0.00	62.80	5241.96	5204.85
PR10	11/06/18	37.09	ND	0.00	62.85	5241.96	5204.87
PR10	02/22/19	37.80	37.66	0.14	NM	5241.96	5204.27
PR10	05/17/19	42.41	41.58	0.83	NM	5241.96	5200.17
PR10	08/23/19	41.22	40.30	0.92	62.75	5241.96	5201.43
PR11	11/18/14	51.90	45.35	6.55	67.98	Not Surveyed	
PR11	02/11/15	52.40	45.54	6.86	67.98	Not Surveyed	
PR11	05/18/15	57.40	44.53	12.87	67.98	Not Surveyed	
PR11	08/25/15	42.62	38.61	4.01	64.31	Not Surveyed	
PR11	11/09/15	NM	NM	NM	NM	Not Surveyed	
PR11	02/19/16	NR	NR	5.45	NM	Not Surveyed	
PR11	05/20/16	NR	NR	2.35	NM	Not Surveyed	
PR11	08/12/16	38.95	37.20	1.75	62.14	Not Surveyed	
PR11	11/18/16	37.78	37.59	0.19	NM	Not Surveyed	

Table 1-5

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR11	02/13/17	37.94	37.41	0.53	NM	Not Surveyed	
PR11	05/09/17	37.63	37.52	0.11	NM	5241.86	5204.31
PR11	08/22/17	37.40	37.16	0.24	NM	5241.86	5204.64
PR11	11/17/17	37.00	36.73	0.27	NM	5241.86	5205.06
PR11	02/23/18	37.53	36.97	0.56	NM	5241.86	5204.75
PR11	05/18/18	36.91	36.76	0.15	NM	5241.86	5205.06
PR11	08/24/18	36.89	ND	0.00	62.14	5241.86	5204.97
PR11	11/06/18	36.94	36.90	0.04	62.18	5241.86	5204.95
PR11	02/22/19	37.58	37.49	0.09	NM	5241.86	5204.35
PR11	05/17/19	39.81	ND	0.00	NM	5241.86	5202.05
PR11	08/23/19	40.53	39.90	0.63	62.14	5241.86	5201.80
PR12	11/18/14	50.22	ND	0.00	68.30	Not Surveyed	
PR12	02/11/15	48.99	48.92	0.07	68.30	Not Surveyed	
PR12	05/18/15	48.44	48.20	0.24	68.30	Not Surveyed	
PR12	08/25/15	40.92	40.13	0.79	64.42	Not Surveyed	
PR12	11/20/15	40.56	39.75	1.31	64.42	Not Surveyed	
PR12	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR12	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR12	08/12/16	37.84	37.79	0.05	62.28	Not Surveyed	
PR12	11/18/16	38.07	37.59	0.48	NM	Not Surveyed	
PR12	02/13/17	38.29	37.45	0.84	NM	Not Surveyed	
PR12	05/09/17	37.64	ND	0.00	NM	5241.53	5203.89
PR12	08/22/17	37.62	37.20	0.42	NM	5241.53	5204.23
PR12	11/17/17	37.47	36.72	0.75	NM	5241.53	5204.62
PR12	02/23/18	37.18	37.16	0.02	NM	5241.53	5204.37
PR12	05/18/18	37.37	36.67	0.70	NM	5241.53	5204.69
PR12	08/24/18	37.16	36.91	0.25	62.16	5241.53	5204.56
PR12	11/06/18	37.61	36.75	0.86	61.93	5241.53	5204.57
PR12	02/22/19	38.32	37.85	0.47	NM	5241.53	5203.56
PR12	05/17/19	41.21	ND	0.00	NM	5241.53	5200.32
PR12	08/23/19	40.89	40.57	0.32	62.03	5241.53	5200.88
PR13	11/18/14	48.77	ND	0.00	67.96	Not Surveyed	
PR13	02/11/15	49.08	ND	0.00	67.96	Not Surveyed	
PR13	05/18/15	48.84	ND	0.00	67.96	Not Surveyed	
PR13	08/25/15	44.39	44.34	0.05	64.08	Not Surveyed	
PR13	11/20/15	43.80	43.78	0.02	64.08	Not Surveyed	
PR13	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR13	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR13	08/12/16	41.64	41.38	0.26	61.89	Not Surveyed	
PR13	11/18/16	41.80	41.42	0.38	NM	Not Surveyed	
PR13	02/13/17	41.76	ND	0.00	NM	Not Surveyed	
PR13	05/09/17	41.24	ND	0.00	NM	5243.39	5202.15
PR13	08/22/17	48.51	48.50	0.01	NM	5243.39	5194.89

Table 1-6

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR13	11/17/17	40.49	ND	0.00	NM	5243.39	5202.90
PR13	02/23/18	46.80	46.70	0.10	NM	5243.39	5196.67
PR13	05/18/18	40.55	40.53	0.02	NM	5243.39	5202.86
PR13	08/24/18	40.51	40.49	0.02	61.90	5243.39	5202.90
PR13	11/06/18	40.55	ND	0.00	61.88	5243.39	5202.84
PR13	02/22/19	41.79	41.72	0.07	NM	5243.39	5201.65
PR13	05/17/19	42.00	41.99	0.01	NM	5243.39	5201.40
PR13	08/23/19	42.23	42.12	0.11	61.81	5243.39	5201.24
PR14	11/18/14	48.46	ND	0.00	67.60	Not Surveyed	
PR14	02/11/15	48.58	ND	0.00	67.60	Not Surveyed	
PR14	05/18/15	48.25	ND	0.00	67.60	Not Surveyed	
PR14	08/25/15	43.88	ND	0.00	64.37	Not Surveyed	
PR14	11/09/15	NM	NM	NM	NM	Not Surveyed	
PR14	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR14	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR14	08/12/16	41.64	40.70	0.94	62.15	Not Surveyed	
PR14	11/18/16	41.03	ND	0.00	NM	Not Surveyed	
PR14	02/13/17	41.68	41.04	0.64	NM	Not Surveyed	
PR14	05/09/17	41.01	40.69	0.32	NM	5243.15	5202.38
PR14	08/22/17	41.20	40.10	1.10	NM	5243.15	5202.78
PR14	11/17/17	40.02	40.01	0.01	NM	5243.15	5203.14
PR14	02/23/18	41.38	39.82	1.56	NM	5243.15	5202.94
PR14	05/18/18	40.18	40.01	0.17	NM	5243.15	5203.10
PR14	08/24/18	40.44	39.95	0.49	62.05	5243.15	5203.08
PR14	11/06/18	40.29	40.15	0.14	62.14	5243.15	5202.97
PR14	02/22/19	43.12	41.41	1.71	NM	5243.15	5201.31
PR14	05/17/19	42.47	42.45	0.02	NM	5243.15	5200.70
PR14	08/23/19	42.89	42.66	0.23	62.10	5243.15	5200.43
PR15	11/18/14	48.92	48.74	0.18	68.10	Not Surveyed	
PR15	02/11/15	49.08	48.42	0.66	68.10	Not Surveyed	
PR15	05/18/15	49.62	47.75	1.87	68.10	Not Surveyed	
PR15	08/25/15	45.91	42.92	2.99	64.77	Not Surveyed	
PR15	11/09/15	NM	NM	NM	NM	Not Surveyed	
PR15	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR15	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR15	08/12/16	41.54	40.40	1.14	62.54	Not Surveyed	
PR15	11/18/16	42.13	40.14	1.99	NM	Not Surveyed	
PR15	02/13/17	41.16	40.79	0.37	NM	Not Surveyed	
PR15	05/09/17	41.13	40.20	0.93	NM	5243.05	5202.62
PR15	08/22/17	41.24	39.75	1.49	NM	5243.05	5202.93
PR15	11/17/17	39.84	39.77	0.07	NM	5243.05	5203.26
PR15	02/23/18	40.39	39.78	0.61	NM	5243.05	5203.12
PR15	05/18/18	39.84	39.75	0.09	NM	5243.05	5203.28

Table 1-7

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR15	08/24/18	40.18	39.69	0.49	62.55	5243.05	5203.24
PR15	11/06/18	40.47	39.83	0.64	62.55	5243.05	5203.06
PR15	02/22/19	44.09	42.41	1.68	NM	5243.05	5200.22
PR15	05/17/19	45.71	ND	0.00	NM	5243.05	5197.34
PR15	08/23/19	46.53	45.79	0.74	62.51	5243.05	5197.08
PR16	11/18/14	47.70	47.06	0.64	68.40	Not Surveyed	
PR16	02/11/15	48.84	46.79	2.05	68.40	Not Surveyed	
PR16	05/18/15	51.58	45.53	6.05	68.40	Not Surveyed	
PR16	08/25/15	50.02	40.81	9.21	65.26	Not Surveyed	
PR16	11/09/15	NM	NM	NM	NM	Not Surveyed	
PR16	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR16	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR16	08/12/16	40.83	39.85	0.98	63.11	Not Surveyed	
PR16	11/18/16	43.87	38.69	5.18	NM	Not Surveyed	
PR16	02/13/17	40.64	40.14	0.50	NM	Not Surveyed	
PR16	05/09/17	41.58	39.40	2.18	NM	5242.81	5202.87
PR16	08/22/17	41.80	38.60	3.20	NM	5242.81	5203.41
PR16	11/17/17	40.81	38.84	1.97	NM	5242.81	5203.48
PR16	02/23/18	39.69	39.35	0.34	NM	5242.81	5203.38
PR16	05/18/18	41.33	38.54	2.79	NM	5242.81	5203.57
PR16	08/24/18	41.13	38.80	2.33	63.10	5242.81	5203.43
PR16	11/06/18	39.73	39.42	0.31	63.09	5242.81	5203.31
PR16	02/22/19	46.90	41.42	5.48	NM	5242.81	5200.02
PR16	05/17/19	45.05	ND	0.00	NM	5242.81	5197.76
PR16	08/23/19	45.18	45.02	0.16	63.04	5242.81	5197.75
PR17	11/18/14	47.62	47.51	0.11	68.13	Not Surveyed	
PR17	02/11/15	47.69	47.44	0.25	68.13	Not Surveyed	
PR17	05/18/15	47.68	47.06	0.62	68.13	Not Surveyed	
PR17	08/25/15	43.33	42.55	0.78	65.24	Not Surveyed	
PR17	11/09/15	NM	NM	NM	NM	Not Surveyed	
PR17	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR17	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR17	08/12/16	39.95	39.90	0.05	63.05	Not Surveyed	
PR17	11/18/16	39.74	39.63	0.11	NM	Not Surveyed	
PR17	02/13/17	40.01	39.85	0.16	NM	Not Surveyed	
PR17	05/09/17	39.80	39.61	0.19	NM	5242.70	5203.04
PR17	08/22/17	39.30	39.22	0.08	NM	5242.70	5203.46
PR17	11/17/17	38.94	38.90	0.04	NM	5242.70	5203.79
PR17	02/23/18	39.21	39.08	0.13	NM	5242.70	5203.59
PR17	05/18/18	38.86	38.79	0.07	NM	5242.70	5203.89
PR17	08/24/18	38.99	38.93	0.06	63.07	5242.70	5203.76
PR17	11/06/18	39.20	39.09	0.11	63.09	5242.70	5203.58
PR17	02/22/19	41.43	ND	0.00	NM	5242.70	5201.27

Table 1-8

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR17	05/17/19	45.72	ND	0.00	NM	5242.70	5196.98
PR17	08/23/19	45.49	ND	0.00	63.08	5242.70	5197.21
PR18	11/18/14	49.95	45.97	3.98	67.95	Not Surveyed	
PR18	02/11/15	54.62	45.95	8.67	67.95	Not Surveyed	
PR18	05/18/15	58.44	44.91	13.53	67.95	Not Surveyed	
PR18	08/25/15	50.27	40.50	9.77	65.05	Not Surveyed	
PR18	11/09/15	NM	NM	NM	NM	Not Surveyed	
PR18	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR18	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR18	08/12/16	49.20	37.31	11.89	62.88	Not Surveyed	
PR18	11/18/16	44.79	37.70	7.09	NM	Not Surveyed	
PR18	02/13/17	42.20	38.47	3.73	NM	Not Surveyed	
PR18	05/09/17	42.84	38.08	4.76	NM	5242.35	5203.08
PR18	08/22/17	42.70	37.55	5.15	NM	5242.35	5203.51
PR18	11/17/17	38.99	38.11	0.88	NM	5242.35	5204.02
PR18	02/23/18	41.54	37.70	3.84	NM	5242.35	5203.69
PR18	05/18/18	40.59	37.68	2.91	NM	5242.35	5203.94
PR18	08/24/18	40.59	37.81	2.78	62.88	5242.35	5203.85
PR18	11/06/18	39.01	38.55	0.46	62.90	5242.35	5203.69
PR18	02/22/19	NM	NM	NM	NM	5242.35	NM
PR18	05/17/19	41.76	ND	0.00	NM	5242.35	5200.59
PR18	08/23/19	42.36	41.98	0.38	62.85	5242.35	5200.28
PR19	11/18/14	51.35	ND	0.00	67.98	Not Surveyed	
PR19	02/11/15	49.41	ND	0.00	67.98	Not Surveyed	
PR19	05/18/15	48.71	ND	0.00	67.98	Not Surveyed	
PR19	08/25/15	43.27	ND	0.00	64.48	Not Surveyed	
PR19	11/20/15	44.04	41.98	2.06	64.48	Not Surveyed	
PR19	02/19/16	NM	ND	0.00	NM	Not Surveyed	
PR19	05/20/16	NM	ND	0.00	NM	Not Surveyed	
PR19	08/12/16	44.98	39.59	5.39	62.32	Not Surveyed	
PR19	11/18/16	42.08	38.88	3.20	NM	Not Surveyed	
PR19	02/13/17	40.07	39.67	0.40	NM	Not Surveyed	
PR19	05/09/17	34.87	34.43	0.44	NM	5249.37	5214.83
PR19	08/22/17	40.30	38.75	1.55	NM	5249.37	5210.23
PR19	11/17/17	39.76	38.35	1.41	NM	5242.17	5203.47
PR19	02/23/18	39.54	38.53	1.01	NM	5242.17	5203.39
PR19	05/18/18	38.52	38.34	0.18	NM	5242.17	5203.79
PR19	08/24/18	38.80	38.47	0.33	62.32	5242.17	5203.62
PR19	11/06/18	39.04	38.48	0.56	62.53	5242.17	5203.55
PR19	02/22/19	40.49	ND	0.00	NM	5242.17	5201.68
PR19	05/17/19	42.35	ND	0.00	NM	5242.17	5199.82
PR19	08/23/19	43.10	42.58	0.52	62.21	5242.17	5199.46
PR20	11/18/14	52.50	ND	0.00	67.60	Not Surveyed	

Table 1-9

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR20	02/11/15	52.78	ND	0.00	67.60	Not Surveyed	
PR20	05/18/15	52.71	ND	0.00	67.60	Not Surveyed	
PR20	08/25/15	49.03	ND	0.00	64.46	Not Surveyed	
PR20	11/20/15	48.99	ND	0.00	64.46	Not Surveyed	
PR20	02/19/16	NM	ND	0.00	NM	Not Surveyed	
PR20	05/20/16	NM	ND	0.00	NM	Not Surveyed	
PR20	08/12/16	46.49	ND	0.00	62.28	Not Surveyed	
PR20	11/18/16	42.64	ND	0.00	NM	Not Surveyed	
PR20	02/13/17	46.25	ND	0.00	NM	Not Surveyed	
PR20	05/09/17	NM	NM	NM	NM	5244.86	NM
PR20	08/22/17	45.90	ND	0.00	NM	5244.86	5198.96
PR20	11/17/17	45.51	ND	0.00	NM	5244.86	5199.35
PR20	02/27/18	45.62	ND	0.00	NM	5244.86	5199.24
PR20	05/18/18	45.65	ND	0.00	NM	5244.86	5199.21
PR20	08/24/18	45.56	ND	0.00	62.26	5244.86	5199.30
PR20	11/06/18	45.57	ND	0.00	62.29	5244.86	5199.29
PR20	02/22/19	45.47	ND	0.00	NM	5244.86	5199.39
PR20	05/17/19	45.36	ND	0.00	NM	5244.86	5199.50
PR20	08/23/19	45.05	ND	0.00	62.27	5244.86	5199.81
PR21	11/18/14	52.39	ND	0.00	67.99	Not Surveyed	
PR21	02/11/15	52.59	ND	0.00	67.99	Not Surveyed	
PR21	05/18/15	52.52	ND	0.00	67.99	Not Surveyed	
PR21	08/25/15	48.70	ND	0.00	64.50	Not Surveyed	
PR21	11/20/15	48.56	ND	0.00	64.50	Not Surveyed	
PR21	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR21	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR21	08/12/16	46.10	ND	0.00	62.33	Not Surveyed	
PR21	11/18/16	46.55	46.54	0.01	NM	Not Surveyed	
PR21	02/13/17	45.88	ND	0.00	NM	Not Surveyed	
PR21	05/09/17	NM	NM	NM	NM	5244.58	NM
PR21	08/22/17	45.45	ND	0.00	NM	5244.58	5199.13
PR21	11/17/17	45.07	ND	0.00	NM	5244.58	5199.51
PR21	02/27/18	45.18	ND	0.00	NM	5244.58	5199.40
PR21	05/18/18	45.21	ND	0.00	NM	5244.58	5199.37
PR21	08/24/18	45.12	ND	0.00	62.33	5244.58	5199.46
PR21	11/06/18	45.10	ND	0.00	62.35	5244.58	5199.48
PR21	02/22/19	45.08	ND	0.00	NM	5244.58	5199.50
PR21	05/17/19	45.02	ND	0.00	NM	5244.58	5199.56
PR21	08/23/19	45.31	ND	0.00	62.33	5244.58	5199.27
PR22	11/18/14	52.20	ND	0.00	67.62	Not Surveyed	
PR22	02/11/15	52.15	ND	0.00	67.62	Not Surveyed	
PR22	05/18/15	52.10	ND	0.00	67.92	Not Surveyed	
PR22	08/25/15	48.44	ND	0.00	64.44	Not Surveyed	

Table 1-10

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR22	11/20/15	48.26	ND	0.00	64.44	Not Surveyed	
PR22	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR22	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR22	08/12/16	45.71	ND	0.00	62.29	Not Surveyed	
PR22	11/18/16	45.69	ND	0.00	NM	Not Surveyed	
PR22	02/13/17	45.50	ND	0.00	NM	Not Surveyed	
PR22	05/09/17	NM	NM	NM	NM	5244.22	NM
PR22	08/22/17	44.98	ND	0.00	NM	5244.22	5199.24
PR22	11/17/17	44.61	ND	0.00	NM	5244.22	5199.61
PR22	02/27/18	44.70	ND	0.00	NM	5244.22	5199.52
PR22	05/18/18	44.72	ND	0.00	NM	5244.22	5199.50
PR22	08/24/18	44.73	ND	0.00	61.84	5244.22	5199.49
PR22	11/06/18	44.69	ND	0.00	62.30	5244.22	5199.53
PR22	02/22/19	44.78	ND	0.00	NM	5244.22	5199.44
PR22	05/17/19	44.68	ND	0.00	NM	5244.22	5199.54
PR22	08/23/19	44.92	ND	0.00	61.85	5244.22	5199.30
PR23	11/18/14	52.52	ND	0.00	68.20	Not Surveyed	
PR23	02/11/15	52.18	ND	0.00	68.20	Not Surveyed	
PR23	05/18/15	52.09	ND	0.00	68.20	Not Surveyed	
PR23	08/25/15	48.16	ND	0.00	64.39	Not Surveyed	
PR23	11/09/15	NM	NM	NM	NM	Not Surveyed	
PR23	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR23	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR23	08/12/16	45.21	ND	0.00	62.17	Not Surveyed	
PR23	11/18/16	45.29	ND	0.00	NM	Not Surveyed	
PR23	02/13/17	45.00	ND	0.00	NM	Not Surveyed	
PR23	05/09/17	NM	NM	NM	NM	5243.92	NM
PR23	08/22/17	44.40	ND	0.00	NM	5243.92	5199.52
PR23	11/17/17	44.00	ND	0.00	NM	5243.92	5199.92
PR23	02/27/18	44.14	ND	0.00	NM	5243.92	5199.78
PR23	05/18/18	44.19	ND	0.00	NM	5243.92	5199.73
PR23	08/24/18	44.28	ND	0.00	62.13	5243.92	5199.64
PR23	11/06/18	44.31	ND	0.00	62.18	5243.92	5199.61
PR23	02/22/19	44.56	ND	0.00	NM	5243.92	5199.36
PR23	05/17/19	44.27	ND	0.00	NM	5243.92	5199.65
PR23	08/23/19	44.50	44.49	0.01	62.18	5243.92	5199.43
PR24	11/18/14	51.71	ND	0.00	68.12	Not Surveyed	
PR24	02/11/15	51.82	51.65	0.17	68.12	Not Surveyed	
PR24	05/18/15	52.04	51.44	0.60	68.12	Not Surveyed	
PR24	08/25/15	48.29	47.56	0.73	64.30	Not Surveyed	
PR24	11/09/15	NM	NM	NM	NM	Not Surveyed	
PR24	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR24	05/20/16	NM	NM	NM	NM	Not Surveyed	

Table 1-11

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR24	08/12/16	44.80	44.66	0.14	62.09	Not Surveyed	
PR24	11/18/16	44.83	ND	0.00	NM	Not Surveyed	
PR24	02/13/17	44.55	44.50	0.05	NM	Not Surveyed	
PR24	05/09/17	44.18	44.10	0.08	NM	5243.46	5199.34
PR24	08/22/17	43.90	43.85	0.05	NM	5243.46	5199.60
PR24	11/17/17	44.58	44.54	0.04	NM	5243.46	5198.91
PR24	02/23/18	43.97	43.78	0.19	NM	5243.46	5199.63
PR24	05/18/18	43.75	43.62	0.13	NM	5243.46	5199.81
PR24	08/24/18	43.77	43.69	0.08	62.08	5243.46	5199.75
PR24	11/06/18	43.96	43.79	0.17	62.10	5243.46	5199.63
PR24	02/22/19	44.33	44.12	0.21	NM	5243.46	5199.29
PR24	05/17/19	43.87	ND	0.00	NM	5243.46	5199.59
PR24	08/23/19	44.13	44.00	0.13	62.10	5243.46	5199.43
PR25	11/18/14	66.20	ND	0.00	68.15	Not Surveyed	
PR25	02/11/15	51.75	51.28	0.47	68.15	Not Surveyed	
PR25	05/18/15	52.46	50.94	1.52	68.15	Not Surveyed	
PR25	08/25/15	49.24	46.78	2.46	64.39	Not Surveyed	
PR25	11/20/15	50.03	26.24	23.79	64.39	Not Surveyed	
PR25	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR25	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR25	08/12/16	50.80	42.86	7.94	62.27	Not Surveyed	
PR25	11/18/16	48.93	42.76	6.17	NM	Not Surveyed	
PR25	02/13/17	44.53	44.09	0.44	NM	Not Surveyed	
PR25	05/09/17	45.93	43.11	2.82	NM	5243.21	5199.40
PR25	08/22/17	45.90	42.80	3.10	NM	5243.21	5199.64
PR25	11/17/17	43.43	43.10	0.33	NM	5243.21	5200.03
PR25	02/23/18	43.61	43.27	0.34	NM	5243.21	5199.86
PR25	05/18/18	44.24	42.86	1.38	NM	5243.21	5200.01
PR25	08/24/18	43.97	43.02	0.95	61.89	5243.21	5199.95
PR25	11/06/18	43.90	43.43	0.47	62.11	5243.21	5199.66
PR25	02/22/19	44.19	44.07	0.12	NM	5243.21	5199.11
PR25	05/17/19	43.34	ND	0.00	NM	5243.21	5199.87
PR25	08/23/19	43.66	43.54	0.12	62.20	5243.21	5199.64
PR26	11/18/14	51.21	51.19	0.02	67.90	Not Surveyed	
PR26	02/11/15	51.46	51.19	0.27	67.90	Not Surveyed	
PR26	05/18/15	51.64	50.95	0.69	67.90	Not Surveyed	
PR26	08/25/15	47.68	46.78	0.90	63.98	Not Surveyed	
PR26	11/20/15	47.60	46.50	1.10	63.98	Not Surveyed	
PR26	02/19/16	NM	NM	NM	NM	Not Surveyed	
PR26	05/20/16	NM	NM	NM	NM	Not Surveyed	
PR26	08/12/16	46.27	43.13	3.14	61.89	Not Surveyed	
PR26	11/18/16	43.96	43.62	0.34	NM	Not Surveyed	
PR26	02/13/17	43.65	43.24	0.41	NM	Not Surveyed	

Table 1-12

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
PR26	05/09/17	44.32	42.59	1.73	NM	5242.84	5199.82
PR26	08/22/17	44.50	42.19	2.31	NM	5242.84	5200.07
PR26	11/17/17	42.67	42.39	0.28	NM	5242.84	5200.38
PR26	02/23/18	43.54	42.40	1.14	NM	5242.84	5200.16
PR26	05/18/18	42.74	42.41	0.33	NM	5242.84	5200.35
PR26	08/24/18	42.90	42.41	0.49	61.85	5242.84	5200.31
PR26	11/06/18	43.32	42.96	0.36	61.85	5242.84	5199.79
PR26	02/22/19	44.04	43.89	0.15	NM	5242.84	5198.91
PR26	05/17/19	42.86	ND	0.00	NM	5242.84	5199.98
PR26	08/23/19	42.95	42.94	0.01	61.75	5242.84	5199.90
SB01	02/21/14	41.68	ND	0.00	60.35	5245.29	5203.61
SB01	05/16/14	41.13	ND	0.00	60.35	5245.29	5204.16
SB01	05/19/14	Removed From Groundwater Monitoring Program - Submerged Well Screen					
SB02	02/21/14	39.80	ND	0.00	59.95	5243.53	5203.73
SB02	05/16/14	38.97	ND	0.00	59.95	5243.53	5204.56
SB02	05/19/14	Removed From Groundwater Monitoring Program - Submerged Well Screen					
SB03	02/21/14	42.01	ND	0.00	51.38	5245.57	5203.56
SB03	05/16/14	41.41	ND	0.00	51.38	5245.57	5204.16
SB03	08/27/14	41.82	ND	0.00	51.38	5245.57	5203.75
SB03	11/18/14	41.56	ND	0.00	51.38	5245.57	5204.01
SB03	02/11/15	41.82	ND	0.00	51.38	5245.57	5203.75
SB03	05/18/15	41.72	ND	0.00	51.38	5245.57	5203.85
SB03	08/25/15	35.39	ND	0.00	45.81	5241.17	5205.78
SB03	11/20/15	34.49	ND	0.00	45.81	5242.17	5207.68
SB03	02/19/16	34.26	ND	0.00	45.79	5242.17	5207.91
SB03	05/20/16	33.57	ND	0.00	45.79	5242.17	5208.60
SB03	08/12/16	32.57	ND	0.00	45.80	5242.17	5209.60
SB03	11/18/16	31.76	ND	0.00	45.87	5242.17	5210.41
SB03	02/13/17	31.23	ND	0.00	45.81	5242.17	5210.94
SB03	05/09/17	30.83	ND	0.00	45.83	5242.17	5211.34
SB03	08/22/17	30.61	ND	0.00	45.85	5242.17	5211.56
SB03	11/17/17	29.39	ND	0.00	45.83	5242.17	5212.78
SB03	02/23/18	28.96	ND	0.00	45.89	5242.17	5213.21
SB03	05/18/18	28.77	ND	0.00	46.00	5242.17	5213.40
SB03	08/24/18	28.27	ND	0.00	45.95	5242.17	5213.90
SB03	11/06/18	27.73	ND	0.00	45.91	5242.17	5214.44
SB03	02/22/19	27.56	ND	0.00	45.90	5242.17	5214.61
SB03	05/17/19	27.54	ND	0.00	45.91	5242.17	5214.63
SB03	08/23/19	27.21	ND	0.00	46.58	5242.17	5214.96
SB04	02/21/14	39.24	ND	0.00	50.35	5242.85	5203.61
SB04	05/16/14	38.37	ND	0.00	50.35	5242.85	5204.48
SB04	08/27/14	38.97	ND	0.00	50.35	5242.85	5203.88
SB04	11/18/14	38.72	ND	0.00	50.35	5242.85	5204.13

Table 1-13

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB04	02/11/15	39.01	ND	0.00	50.35	5242.85	5203.84
SB04	05/18/15	38.87	ND	0.00	50.35	5242.85	5203.98
SB04	08/25/15	34.70	ND	0.00	48.67	5241.29	5206.59
SB04	11/20/15	33.97	ND	0.00	48.67	5242.29	5208.32
SB04	02/19/16	33.80	ND	0.00	48.69	5242.29	5208.49
SB04	05/20/16	36.50	ND	0.00	52.04	5244.63	5208.13
SB04	08/12/16	35.66	ND	0.00	52.02	5244.63	5208.97
SB04	11/18/16	35.01	ND	0.00	52.08	5244.63	5209.62
SB04	02/13/17	34.50	ND	0.00	52.02	5244.63	5210.13
SB04	05/09/17	34.17	ND	0.00	52.03	5244.63	5210.46
SB04	08/22/17	33.96	ND	0.00	52.01	5244.63	5210.67
SB04	11/17/17	32.54	ND	0.00	52.01	5244.63	5212.09
SB04	02/23/18	32.67	ND	0.00	52.08	5244.63	5211.96
SB04	05/18/18	32.42	ND	0.00	52.15	5244.63	5212.21
SB04	08/24/18	31.93	ND	0.00	52.15	5244.63	5212.70
SB04	11/06/18	31.40	ND	0.00	52.09	5244.63	5213.23
SB04	02/22/19	31.16	ND	0.00	52.02	5244.63	5213.47
SB04	05/17/19	31.00	ND	0.00	52.10	5244.63	5213.63
SB04	08/23/19	30.85	ND	0.00	52.92	5244.63	5213.78
SB05	02/21/14	45.35	41.10	4.25	49.10	5244.11	5201.94
SB05	05/16/14	42.19	41.92	0.27	49.10	5244.11	5202.12
SB05	08/27/14	42.45	41.10	1.35	49.10	5244.11	5202.67
SB05	11/18/14	41.61	41.27	0.34	49.10	5244.11	5202.75
SB05	02/11/15	42.92	41.58	1.34	49.10	5244.11	5202.19
SB05	05/18/15	42.36	41.38	0.98	49.10	5243.26	5201.64
SB05	08/25/15	38.02	36.99	1.03	47.39	5243.26	5206.01
SB05	11/20/15	38.12	36.78	1.34	47.39	5244.26	5207.15
SB05	02/19/16	36.70	ND	0.00 ¹	47.39	5244.26	5207.56
SB05	05/20/16	43.95	41.63	2.32	51.85	5247.71	5205.50
SB05	08/12/16	44.64	41.84	2.80	51.89	5247.71	5205.17
SB05	11/18/16	44.93	41.90	3.03	NM	5247.71	5205.05
SB05	02/13/17	44.70	41.66	3.04	NM	5247.71	5205.29
SB05	05/09/17	44.87	41.64	3.23	51.89	5247.71	5205.26
SB05	08/22/17	45.07	41.66	3.41	NM	5247.71	5205.20
SB05	11/17/17	44.40	41.20	3.20	NM	5247.71	5205.71
SB05	02/23/18	43.45	43.16	0.29	NM	5247.71	5204.48
SB05	05/18/18	41.73	41.63	0.10	52.07	5247.71	5206.06
SB05	08/24/18	42.48	41.74	0.74	51.90	5247.71	5205.79
SB05	11/06/18	42.09	41.84	0.25	51.95	5247.71	5205.81
SB05	02/22/19	43.04	41.60	1.44	NM	5247.71	5205.75
SB05	05/17/19	43.34	42.92	0.42	NM	5247.71	5204.69
SB05	08/23/19	43.53	43.41	0.12	51.89	5248.71	5205.27
SB06	02/21/14	39.86	ND	0.00	49.52	5243.55	5203.69

Table 1-14

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB06	05/16/14	38.91	ND	0.00	49.52	5243.55	5204.64
SB06	08/27/14	39.55	ND	0.00	49.52	5243.55	5204.00
SB06	11/18/14	39.32	ND	0.00	49.52	5243.55	5204.23
SB06	02/11/15	39.59	ND	0.00	49.52	5243.55	5203.96
SB06	05/18/15	39.49	ND	0.00	49.52	5243.55	5204.06
SB06	08/25/15	35.21	ND	0.00	47.61	5241.80	5206.59
SB06	11/20/15	34.44	ND	0.00	47.61	5242.80	5208.36
SB06	02/19/16	34.20	ND	0.00	47.60	5242.80	5208.60
SB06	05/20/16	37.08	ND	0.00	50.98	5245.23	5208.15
SB06	08/12/16	36.38	ND	0.00	50.98	5245.23	5208.85
SB06	11/18/16	35.73	ND	0.00	51.10	5245.23	5209.50
SB06	02/13/17	35.33	ND	0.00	50.96	5245.23	5209.90
SB06	05/09/17	34.95	ND	0.00	50.96	5245.23	5210.28
SB06	08/22/17	34.82	ND	0.00	50.97	5245.23	5210.41
SB06	11/17/17	33.75	ND	0.00	50.89	5245.23	5211.48
SB06	02/23/18	33.57	ND	0.00	51.09	5245.23	5211.66
SB06	05/18/18	33.27	ND	0.00	51.39	5245.23	5211.96
SB06	08/24/18	32.80	ND	0.00	51.00	5245.23	5212.43
SB06	11/06/18	32.26	ND	0.00	51.08	5245.23	5212.97
SB06	02/22/19	32.02	ND	0.00	50.96	5245.23	5213.21
SB06	05/17/19	31.79	ND	0.00	51.15	5245.23	5213.44
SB06	08/23/19	31.57	ND	0.00	51.89	5245.23	5213.66
SB06	08/30/19	31.73	ND	0.00	50.89	5245.23	5213.50
SB07	02/21/14	42.73	ND	0.00	50.40	5245.62	5202.89
SB07	05/16/14	42.70	ND	0.00	50.40	5245.62	5202.92
SB07	08/27/14	42.55	ND	0.00	50.40	5245.62	5203.07
SB07	11/18/14	42.34	ND	0.00	50.40	5245.62	5203.28
SB07	02/11/15	42.45	ND	0.00	50.40	5245.62	5203.17
SB07	05/18/15	39.70	ND	0.00	47.82	5243.18	5203.48
SB07	08/25/15	38.25	ND	0.00	47.84	5243.18	5204.93
SB07	11/20/15	33.08	ND	0.00	47.84	5244.18	5211.10
SB07	02/19/16	34.78	ND	0.00	47.84	5244.18	5209.40
SB07	05/20/16	40.30	ND	0.00	51.56	5246.91	5206.61
SB07	08/12/16	40.37	ND	0.00	51.56	5246.91	5206.54
SB07	11/18/16	40.17	ND	0.00	51.63	5246.91	5206.74
SB07	02/13/17	39.84	ND	0.00	51.56	5246.91	5207.07
SB07	05/09/17	39.60	ND	0.00	51.56	5246.91	5207.31
SB07	08/22/17	39.40	ND	0.00	51.56	5246.91	5207.51
SB07	11/17/17	39.05	ND	0.00	51.56	5246.91	5207.86
SB07	02/23/18	38.59	ND	0.00	51.62	5246.91	5208.32
SB07	05/18/18	38.23	ND	0.00	51.74	5246.91	5208.68
SB07	08/24/18	38.08	ND	0.00	51.67	5246.91	5208.83
SB07	11/06/18	37.73	ND	0.00	51.63	5246.91	5209.18

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB07	02/22/19	37.24	ND	0.00	51.58	5246.91	5209.67
SB07	05/17/19	37.36	ND	0.00	51.63	5246.91	5209.55
SB07	08/23/19	37.39	ND	0.00	52.41	5246.91	5209.52
SB08	02/21/14	44.46	ND	0.00	50.41	5246.57	5202.11
SB08	05/16/14	44.54	ND	0.00	50.41	5246.57	5202.03
SB08	08/27/14	44.30	ND	0.00	50.41	5246.57	5202.27
SB08	11/18/14	45.16	44.88	0.28	50.41	5246.57	5201.62
SB08	02/11/15	45.64	45.51	0.13	50.41	5246.57	5201.03
SB08	05/18/15	45.09	ND	0.00	50.41	5246.57	5201.48
SB08	08/25/15	40.63	ND	0.00	48.32	5244.80	5204.17
SB08	11/20/15	39.04	39.01	0.03	48.32	5245.80	5206.78
SB08	02/19/16	35.17	ND	0.00 ¹	48.32	5245.80	5210.63
SB08	05/20/16	42.88	ND	0.00	51.08	5247.67	5204.79
SB08	08/12/16	43.20	ND	0.00	51.00	5247.67	5204.47
SB08	11/18/16	42.91	ND	0.00	51.26	5247.67	5204.76
SB08	02/13/17	42.75	ND	0.00	51.08	5247.67	5204.92
SB08	05/09/17	42.72	ND	0.00	51.10	5247.67	5204.95
SB08	08/22/17	42.44	ND	0.00	51.09	5247.67	5205.23
SB08	11/17/17	42.10	ND	0.00	51.09	5247.67	5205.57
SB08	02/23/18	42.08	ND	0.00	51.26	5247.67	5205.59
SB08	05/18/18	41.72	ND	0.00	51.35	5247.67	5205.95
SB08	08/24/18	41.97	ND	0.00	51.09	5247.67	5205.70
SB08	11/06/18	41.79	ND	0.00	51.29	5247.67	5205.88
SB08	02/22/19	42.56	ND	0.00	51.10	5247.67	5205.11
SB08	05/17/19	43.77	ND	0.00	51.26	5247.67	5203.90
SB08	08/23/19	43.68	ND	0.00	51.96	5247.67	5203.99
SB09	02/21/14	45.80	43.00	2.80	50.55	5245.53	5201.83
SB09	05/16/14	45.37	43.81	1.56	50.55	5245.53	5201.33
SB09	08/27/14	42.67	42.12	0.55	49.79	5244.86	5202.60
SB09	11/18/14	42.19	41.37	0.82	50.55	5244.86	5203.29
SB09	02/11/15	43.07	41.97	1.10	50.55	5244.86	5202.62
SB09	05/18/15	42.30	41.23	1.07	50.55	5244.86	5203.36
SB09	08/25/15	39.98	38.35	1.63	47.44	5243.49	5204.73
SB09	11/20/15	40.11	38.36	1.75	47.44	5244.49	5205.69
SB09	02/19/16	38.17	NM	NM ¹	47.44	5244.49	5206.32
SB09	05/20/16	43.94	42.99	0.95	52.15	5248.20	5204.98
SB09	08/12/16	44.39	43.30	1.09	52.19	5248.20	5204.63
SB09	11/18/16	44.49	43.35	1.14	NM	5248.20	5204.57
SB09	02/13/17	44.32	43.29	1.03	NM	5248.20	5204.66
SB09	05/09/17	44.23	43.19	1.04	52.15	5248.20	5204.75
SB09	08/22/17	44.32	43.19	1.13	NM	5248.20	5204.73
SB09	11/17/17	43.51	42.65	0.86	NM	5248.20	5205.34
SB09	02/23/18	43.89	42.90	0.99	NM	5248.20	5205.05

Table 1-16

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB09	05/18/18	43.88	43.86	0.02	NM	5248.20	5204.34
SB09	08/24/18	42.84	42.83	0.01	52.07	5248.20	5205.37
SB09	11/06/18	42.75	42.74	0.01	52.13	5248.20	5205.46
SB09	02/22/19	43.13	ND	0.00	52.07	5248.20	5205.07
SB09	05/17/19	45.20	44.91	0.29	NM	5248.20	5203.22
SB09	08/23/19	45.26	45.18	0.08	52.14	5248.20	5203.00
SB10	02/21/14	41.71	ND	0.00	50.49	5245.24	5203.53
SB10	05/16/14	41.17	ND	0.00	50.49	5245.24	5204.07
SB10	08/27/14	41.23	41.22	0.01	50.49	5245.24	5204.02
SB10	11/18/14	40.92	ND	0.00	50.49	5245.24	5204.32
SB10	02/11/15	41.18	ND	0.00	50.49	5245.24	5204.06
SB10	05/18/15	39.03	ND	0.00	48.35	5243.28	5204.25
SB10	08/25/15	37.39	ND	0.00	48.35	5243.28	5205.89
SB10	11/20/15	36.25	ND	0.00	48.35	5244.28	5208.03
SB10	02/19/16	35.65	ND	0.00 ¹	48.35	5244.28	5208.63
SB10	05/20/16	40.29	ND	0.00	51.89	5247.80	5207.51
SB10	08/12/16	40.19	ND	0.00	52.90	5247.80	5207.61
SB10	11/18/16	39.82	ND	0.00	52.96	5247.80	5207.98
SB10	02/13/17	39.56	ND	0.00	52.90	5247.80	5208.24
SB10	05/09/17	39.09	ND	0.00	52.92	5247.81	5208.72
SB10	08/22/17	38.94	ND	0.00	52.91	5247.81	5208.87
SB10	11/17/17	38.05	ND	0.00	52.90	5247.81	5209.76
SB10	02/23/18	37.89	ND	0.00	52.96	5247.81	5209.92
SB10	05/18/18	37.46	ND	0.00	53.04	5247.81	5210.35
SB10	08/24/18	36.90	ND	0.00	53.00	5247.81	5210.91
SB10	11/06/18	36.61	ND	0.00	52.98	5247.81	5211.20
SB10	02/22/19	36.20	ND	0.00	52.91	5247.81	5211.61
SB10	05/17/19	35.94	ND	0.00	52.97	5247.81	5211.87
SB10	08/23/19	35.84	ND	0.00	53.49	5247.81	5211.97
SB11	02/21/14	40.03	ND	0.00	50.35	5244.09	5204.06
SB11	05/16/14	38.96	ND	0.00	50.35	5244.09	5205.13
SB11	08/27/14	39.70	ND	0.00	50.35	5244.09	5204.39
SB11	11/18/14	39.41	ND	0.00	50.35	5244.09	5204.68
SB11	02/11/15	39.65	ND	0.00	50.35	5244.09	5204.44
SB11	05/18/15	39.29	ND	0.00	50.35	5244.09	5204.80
SB11	08/25/15	35.30	ND	0.00	48.11	5241.88	5206.58
SB11	11/20/15	34.59	ND	0.00	48.11	5242.88	5208.29
SB11	02/19/16	34.32	ND	0.00	48.11	5242.88	5208.56
SB11	05/20/16	37.15	ND	0.00	51.54	5245.20	5208.05
SB11	08/12/16	36.65	ND	0.00	51.44	5245.20	5208.55
SB11	11/18/16	36.05	ND	0.00	51.51	5245.20	5209.15
SB11	02/13/17	35.69	ND	0.00	51.44	5245.20	5209.51
SB11	05/09/17	35.29	ND	0.00	51.46	5245.21	5209.92

Table 1-17

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB11	08/22/17	35.19	ND	0.00	51.44	5245.21	5210.02
SB11	11/17/17	34.16	ND	0.00	51.45	5245.21	5211.05
SB11	02/23/18	33.98	ND	0.00	51.50	5245.21	5211.23
SB11	05/18/18	33.62	ND	0.00	51.66	5245.21	5211.59
SB11	08/24/18	33.21	ND	0.00	51.56	5245.21	5212.00
SB11	02/22/19	32.33	ND	0.00	51.42	5245.21	5212.88
SB11	05/17/19	32.05	ND	0.00	51.51	5245.21	5213.16
SB11	08/23/19	31.84	ND	0.00	52.20	5245.21	5213.37
SB12	02/21/14	39.44	ND	0.00	50.50	5243.18	5203.74
SB12	05/16/14	39.31	ND	0.00	50.50	5243.18	5203.87
SB12	08/27/14	39.30	ND	0.00	50.50	5243.18	5203.88
SB12	11/18/14	39.29	ND	0.00	50.50	5243.18	5203.89
SB12	02/11/15	39.14	ND	0.00	50.50	5243.18	5204.04
SB12	05/18/15	38.93	ND	0.00	50.50	5243.18	5204.25
SB12	08/25/15	36.31	ND	0.00	48.60	5241.41	5205.10
SB12	11/20/15	35.10	ND	0.00	48.60	5242.41	5207.31
SB12	02/19/16	34.22	ND	0.00	48.61	5242.41	5208.19
SB12	05/20/16	33.74	ND	0.00	48.61	5242.41	5208.67
SB12	08/12/16	32.90	ND	0.00	48.62	5242.41	5209.51
SB12	11/18/16	31.68	ND	0.00	48.70	5242.41	5210.73
SB12	02/13/17	30.93	ND	0.00	48.63	5242.41	5211.48
SB12	05/09/17	30.51	ND	0.00	48.62	5242.41	5211.90
SB12	08/22/17	34.40	ND	0.00	48.63	5242.41	5208.01
SB12	11/17/17	29.54	ND	0.00	48.64	5242.41	5212.87
SB12	02/23/18	29.00	ND	0.00	48.36	5242.41	5213.41
SB12	05/18/18	28.82	ND	0.00	48.79	5242.41	5213.59
SB12	08/24/18	28.47	ND	0.00	48.75	5242.41	5213.94
SB12	11/06/18	27.59	ND	0.00	48.70	5242.41	5214.82
SB12	02/22/19	27.33	ND	0.00	48.64	5242.41	5215.08
SB12	05/17/19	27.37	ND	0.00	48.70	5242.41	5215.04
SB12	08/23/19	26.87	ND	0.00	49.41	5242.41	5215.54
SB13	02/21/14	42.93	ND	0.00	50.48	5244.13	5201.20
SB13	05/16/14	42.43	ND	0.00	50.48	5244.13	5201.70
SB13	08/27/14	41.30	ND	0.00	50.48	5244.13	5202.83
SB13	11/18/14	40.79	ND	0.00	50.48	5244.13	5203.34
SB13	02/11/15	40.65	ND	0.00	50.48	5244.13	5203.48
SB13	05/18/15	40.26	ND	0.00	50.48	5244.13	5203.87
SB13	08/25/15	36.95	ND	0.00	48.39	5242.18	5205.23
SB13	11/20/15	34.54	ND	0.00	48.39	5243.18	5208.64
SB13	02/19/16	33.83	ND	0.00	48.07	5243.18	5209.35
SB13	05/20/16	37.35	ND	0.00	51.69	5245.47	5208.12
SB13	08/12/16	36.46	ND	0.00	51.69	5245.47	5209.01
SB13	11/18/16	35.98	ND	0.00	51.74	5245.47	5209.49

Table 1-18

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB13	02/13/17	35.74	ND	0.00	51.68	5245.47	5209.73
SB13	05/09/17	35.45	ND	0.00	51.69	5245.47	5210.02
SB13	08/22/17	35.29	ND	0.00	51.68	5245.47	5210.18
SB13	11/17/17	34.64	ND	0.00	49.99	5245.47	5210.83
SB13	02/23/18	34.28	ND	0.00	50.18	5245.47	5211.19
SB13	05/18/18	34.00	ND	0.00	50.57	5245.47	5211.47
SB13	08/24/18	33.65	ND	0.00	50.14	5245.47	5211.82
SB13	11/06/18	32.97	ND	0.00	50.26	5245.47	5212.50
SB13	02/22/19	32.58	ND	0.00	50.19	5245.47	5212.89
SB13	05/17/19	32.51	ND	0.00	50.31	5245.47	5212.96
SB13	08/23/19	32.16	ND	0.00	51.04	5245.47	5213.31
SB13	08/30/19	32.86	ND	0.00	50.10	5245.47	5212.61
SB14	02/21/14	41.04	ND	0.00	50.39	5244.82	5203.78
SB14	05/16/14	40.36	ND	0.00	50.39	5244.82	5204.46
SB14	08/27/14	40.67	ND	0.00	50.39	5244.82	5204.15
SB14	11/18/14	40.36	ND	0.00	50.39	5244.82	5204.46
SB14	02/11/15	40.64	ND	0.00	50.39	5244.82	5204.18
SB14	05/18/15	40.52	ND	0.00	50.39	5244.82	5204.30
SB14	08/25/15	36.86	ND	0.00	48.45	5243.02	5206.16
SB14	11/20/15	35.82	ND	0.00	48.45	5244.02	5208.20
SB14	02/19/16	35.34	ND	0.00	48.45	5244.02	5208.68
SB14	05/20/16	38.42	ND	0.00	51.94	5246.22	5207.80
SB14	08/12/16	38.23	ND	0.00	51.64	5246.22	5207.99
SB14	11/18/16	37.77	ND	0.00	51.69	5246.22	5208.45
SB14	02/13/17	37.41	ND	0.00	51.63	5246.22	5208.81
SB14	05/09/17	37.02	ND	0.00	51.65	5246.22	5209.20
SB14	08/22/17	36.93	ND	0.00	51.65	5246.22	5209.29
SB14	11/17/17	35.99	ND	0.00	51.65	5246.22	5210.23
SB14	02/23/18	35.80	ND	0.00	51.70	5246.22	5210.42
SB14	05/18/18	35.40	ND	0.00	51.80	5246.22	5210.82
SB14	08/24/18	35.03	ND	0.00	51.76	5246.22	5211.19
SB14	11/06/18	34.51	ND	0.00	51.71	5246.22	5211.71
SB14	02/22/19	34.11	ND	0.00	51.62	5246.22	5212.11
SB14	05/17/19	33.77	ND	0.00	51.71	5246.22	5212.45
SB14	08/23/19	33.63	ND	0.00	52.48	5246.22	5212.59
SB14	08/30/19	33.79	ND	0.00	51.68	5246.22	5212.43
SB15	02/21/14	40.67	ND	0.00	45.40	5244.25	5203.58
SB15	05/16/14	40.39	ND	0.00	45.40	5244.25	5203.86
SB15	08/27/14	40.38	ND	0.00	45.40	5244.25	5203.87
SB15	11/18/14	40.10	ND	0.00	45.40	5244.25	5204.15
SB15	02/11/15	40.23	ND	0.00	45.40	5244.25	5204.02
SB15	05/18/15	40.10	ND	0.00	45.10	5244.37	5204.27
SB15	08/25/15	38.88	ND	0.00	45.13	5244.37	5205.49

Table 1-19

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB15	11/20/15	37.37	ND	0.00	45.13	5245.37	5208.00
SB15	02/19/16	37.15	ND	0.00	45.13	5245.37	5208.22
SB15	05/20/16	40.91	ND	0.00	48.72	5247.97	5207.06
SB15	08/12/16	40.86	ND	0.00	48.37	5247.97	5207.11
SB15	11/18/16	40.38	ND	0.00	48.77	5247.97	5207.59
SB15	02/13/17	40.04	ND	0.00	48.45	5247.97	5207.93
SB15	05/09/17	39.56	ND	0.00	48.41	5247.97	5208.41
SB15	08/22/17	39.28	ND	0.00	48.37	5247.97	5208.69
SB15	11/17/17	38.32	ND	0.00	48.38	5247.97	5209.65
SB15	02/23/18	37.73	ND	0.00	48.55	5247.97	5210.24
SB15	05/18/18	37.35	ND	0.00	48.95	5247.97	5210.62
SB15	08/24/18	37.13	ND	0.00	48.38	5247.97	5210.84
SB15	11/06/18	36.74	ND	0.00	48.57	5247.97	5211.23
SB15	02/22/19	36.41	ND	0.00	48.32	5247.97	5211.56
SB15	05/17/19	36.20	ND	0.00	48.56	5247.97	5211.77
SB15	08/23/19	35.96	ND	0.00	48.82	5247.97	5212.01
SB16	02/21/14	42.53	ND	0.00	42.78	5247.56	DRY
SB16	05/16/14	42.53	ND	0.00	42.78	5247.56	DRY
SB16	08/27/14	42.54	ND	0.00	42.78	5247.56	DRY
SB16	11/18/14	42.56	ND	0.00	42.78	5247.56	DRY
SB16	02/11/15	42.55	ND	0.00	42.78	5247.56	DRY
SB16	05/18/15	42.50	ND	0.00	42.78	5247.56	DRY
SB16	08/25/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned					
SB16R	02/21/14	46.69	46.16	0.53	63.30	5247.81	5201.51
SB16R	05/16/14	46.59	ND	0.00	63.30	5247.81	5201.22
SB16R	08/27/14	45.94	45.85	0.09	63.30	5247.81	5201.93
SB16R	11/18/14	46.61	46.58	0.03	63.30	5247.81	5201.22
SB16R	02/11/15	46.85	46.48	0.37	63.30	5247.81	5201.23
SB16R	05/18/15	44.09	43.95	0.14	63.30	5245.56	5201.57
SB16R	08/25/15	42.65	41.29	1.36	60.35	5245.56	5203.93
SB16R	11/20/15	42.82	42.04	0.78	60.35	5246.56	5204.32
SB16R	02/19/16	42.81	41.57	1.24	60.35	5246.56	5204.68
SB16R	05/20/16	ND ²	45.19	> 0.51	45.70	5249.19	DRY ²
SB16R	08/12/16	ND ²	45.29	> 0.66	45.95	5249.19	DRY ²
SB16R	11/18/16	ND ²	45.14	>1.28	46.42	5249.19	DRY ²
SB16R	02/13/17	ND ²	45.34	> 1.42	46.76	5249.19	DRY ²
SB16R	05/09/17	Removed From Groundwater Monitoring Program - Well Casing Damaged					
SB16R2	08/22/17	45.23	ND	0.00	62.42	Not Surveyed	
SB16R2	11/17/17	44.69	44.65	0.04	NM	5248.93	5204.27
SB16R2	02/27/18	44.77	44.57	0.20	NM	5248.93	5204.31
SB16R2	05/18/18	44.80	44.50	0.30	NM	5248.93	5204.36
SB16R2	08/24/18	44.95	44.65	0.30	62.42	5248.93	5204.21
SB16R2	11/06/18	44.99	44.48	0.51	62.49	5248.93	5204.32

Table 1-20

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB16R2	02/22/19	46.07	45.42	0.65	NM	5248.93	5203.35
SB16R2	05/17/19	47.15	46.72	0.43	NM	5248.93	5202.10
SB16R2	08/23/19	47.16	46.99	0.17	62.42	5248.93	5201.90
SB17	02/21/14	43.97	ND	0.00	50.40	5244.55	5200.58
SB17	05/16/14	42.99	ND	0.00	50.40	5244.55	5201.56
SB17	08/27/14	41.19	ND	0.00	50.40	5244.55	5203.36
SB17	11/18/14	40.81	ND	0.00	50.40	5244.55	5203.74
SB17	02/11/15	40.65	ND	0.00	50.40	5244.55	5203.90
SB17	05/18/15	40.40	ND	0.00	50.40	5244.55	5204.15
SB17	08/25/15	38.37	ND	0.00	48.44	5242.72	5204.35
SB17	11/20/15	38.22	ND	0.00	48.44	5243.72	5205.50
SB17	02/19/16	37.59	ND	0.00	48.44	5243.72	5206.13
SB17	05/20/16	36.77	ND	0.00	48.44	5243.72	5206.95
SB17	08/12/16	36.33	ND	0.00	48.43	5243.72	5207.39
SB17	11/18/16	35.52	ND	0.00	48.50	5243.72	5208.20
SB17	02/13/17	34.42	ND	0.00	48.43	5243.72	5209.30
SB17	05/09/17	33.59	ND	0.00	48.42	5243.72	5210.13
SB17	08/22/17	32.97	ND	0.00	48.44	5243.72	5210.75
SB17	11/17/17	32.15	ND	0.00	48.44	5243.72	5211.57
SB17	02/23/18	31.33	ND	0.00	48.50	5243.72	5212.39
SB17	05/18/18	30.76	ND	0.00	49.20	5243.72	5212.96
SB17	08/24/18	30.49	ND	0.00	48.56	5243.72	5213.23
SB17	11/06/18	29.92	ND	0.00	48.51	5243.72	5213.80
SB17	02/22/19	28.89	ND	0.00	48.45	5243.72	5214.83
SB17	05/17/19	28.62	ND	0.00	48.51	5243.72	5215.10
SB17	08/23/19	28.76	ND	0.00	49.20	5243.72	5214.96
SB17	08/30/19	30.65	ND	0.00	48.46	5243.72	5213.07
SB18	02/21/14	40.95	ND	0.00	50.38	5245.80	5204.85
SB18	05/16/14	40.98	ND	0.00	50.38	5245.80	5204.82
SB18	08/27/14	41.22	ND	0.00	50.38	5245.80	5204.58
SB18	11/18/14	41.22	ND	0.00	50.38	5245.80	5204.58
SB18	02/11/15	41.12	ND	0.00	50.38	5245.80	5204.68
SB18	05/18/15	37.38	ND	0.00	48.18	5243.72	5206.34
SB18	08/25/15	38.55	ND	0.00	48.19	5243.72	5205.17
SB18	11/20/15	38.14	ND	0.00	48.19	5244.72	5206.58
SB18	02/19/16	37.44	ND	0.00	48.09	5244.72	5207.28
SB18	05/20/16	36.69	ND	0.00	48.09	5244.72	5208.03
SB18	08/12/16	36.51	ND	0.00	48.22	5244.72	5208.21
SB18	11/18/16	35.87	ND	0.00	48.23	5244.72	5208.85
SB18	02/13/17	34.94	ND	0.00	48.18	5244.72	5209.78
SB18	05/09/17	34.12	ND	0.00	48.20	5244.72	5210.60
SB18	08/22/17	33.60	ND	0.00	48.20	5244.72	5211.12
SB18	11/17/17	32.77	ND	0.00	NM	5244.72	5211.95

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB18	02/23/18	32.01	ND	0.00	NM	5244.72	5212.71
SB18	05/18/18	31.52	ND	0.00	NM	5244.72	5213.20
SB18	08/24/18	31.43	ND	0.00	48.32	5244.72	5213.29
SB18	11/06/18	30.89	ND	0.00	48.27	5244.72	5213.83
SB18	02/22/19	30.03	ND	0.00	48.21	5244.72	5214.69
SB18	05/17/19	29.74	ND	0.00	48.28	5244.72	5214.98
SB18	08/23/19	30.07	ND	0.00	48.28	5244.72	5214.65
SB19	02/21/14	43.53	ND	0.00	50.41	5246.58	5203.05
SB19	05/16/14	42.65	ND	0.00	50.41	5246.58	5203.93
SB19	08/27/14	41.44	ND	0.00	50.41	5246.58	5205.14
SB19	11/18/14	41.08	ND	0.00	50.41	5246.58	5205.50
SB19	02/11/15	40.81	ND	0.00	50.41	5246.58	5205.77
SB19	05/18/15	38.40	ND	0.00	48.37	5244.65	5206.25
SB19	08/25/15	38.30	ND	0.00	48.11	5244.65	5206.35
SB19	11/20/15	38.06	ND	0.00	48.11	5245.65	5207.59
SB19	02/19/16	37.23	ND	0.00	48.11	5245.65	5208.42
SB19	05/20/16	36.50	ND	0.00	48.11	5245.65	5209.15
SB19	08/12/16	36.24	ND	0.00	48.13	5245.65	5209.41
SB19	11/18/16	35.47	ND	0.00	48.25	5245.65	5210.18
SB19	02/13/17	34.29	ND	0.00	48.13	5245.65	5211.36
SB19	05/09/17	33.50	ND	0.00	48.12	5245.65	5212.15
SB19	08/22/17	32.79	ND	0.00	48.14	5245.65	5212.86
SB19	11/17/17	32.16	ND	0.00	48.13	5245.65	5213.49
SB19	02/23/18	31.43	ND	0.00	48.21	5245.65	5214.22
SB19	05/18/18	31.11	ND	0.00	48.32	5245.65	5214.54
SB19	08/24/18	31.13	ND	0.00	48.17	5245.65	5214.52
SB19	11/06/18	30.90	ND	0.00	48.14	5245.65	5214.75
SB19	02/22/19	30.17	ND	0.00	48.15	5245.65	5215.48
SB19	05/17/19	26.92	ND	0.00	48.28	5245.65	5218.73
SB19	08/23/19	30.41	ND	0.00	48.50	5245.65	5215.24
SB20	02/21/14	47.62	ND	0.00	50.33	5247.52	5199.90
SB20	05/16/14	47.13	ND	0.00	50.33	5247.52	5200.39
SB20	08/27/14	46.44	ND	0.00	50.33	5247.52	5201.08
SB20	11/18/14	46.07	ND	0.00	50.33	5247.52	5201.45
SB20	02/11/15	45.94	ND	0.00	50.33	5247.52	5201.58
SB20	05/18/15	43.50	ND	0.00	48.10	5245.40	5201.90
SB20	08/25/15	43.44	ND	0.00	48.10	5245.40	5201.96
SB20	11/20/15	40.08	ND	0.00	48.10	5246.40	5206.32
SB20	02/19/16	34.31	ND	0.00	48.10	5246.40	5212.09
SB20	05/20/16	42.79	ND	0.00	51.31	5248.62	5205.83
SB20	08/12/16	44.06	ND	0.00	51.30	5248.62	5204.56
SB20	11/18/16	44.46	ND	0.00	51.34	5248.62	5204.16
SB20	02/13/17	44.19	ND	0.00	51.29	5248.62	5204.43

Table 1-22

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB20	05/09/17	43.67	ND	0.00	51.30	5248.62	5204.95
SB20	08/22/17	43.10	ND	0.00	51.29	5248.62	5205.52
SB20	11/17/17	42.63	ND	0.00	51.29	5248.62	5205.99
SB20	02/23/18	41.99	ND	0.00	51.33	5248.62	5206.63
SB20	05/18/18	41.58	ND	0.00	51.65	5248.62	5207.04
SB20	08/24/18	41.41	ND	0.00	51.38	5248.62	5207.21
SB20	11/06/18	41.27	ND	0.00	51.36	5248.62	5207.35
SB20	02/22/19	40.96	ND	0.00	51.32	5248.62	5207.66
SB20	05/17/19	40.76	ND	0.00	51.37	5248.62	5207.86
SB20	08/23/19	40.97	ND	0.00	51.42	5248.62	5207.65
SB20R	02/21/14	ND	ND	0.00	61.05	5247.80	DRY
SB20R	05/16/14	ND	ND	0.00	61.05	5247.80	DRY
SB20R	08/27/14	ND	ND	0.00	61.05	5247.80	DRY
SB20R	11/18/14	60.50	ND	0.00	61.05	5247.80	5187.30
SB20R	02/11/15	59.78	ND	0.00	61.05	5247.80	5188.02
SB20R	05/18/15	58.91	ND	0.00	61.05	5247.80	5188.89
SB20R	08/25/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned					
SB21	02/21/14	47.54	46.21	1.33	49.30	5248.31	5201.77
SB21	05/16/14	47.68	45.76	1.92	49.30	5248.31	5202.07
SB21	08/27/14	ND	46.10	> 1.72	47.82	5248.31	DRY
SB21	11/18/14	ND	46.22	> 1.60	47.82	5248.31	DRY
SB21	02/11/15	ND	46.52	> 1.38	47.90	5248.31	DRY
SB21	05/18/15	45.25	44.76	0.49	45.70	5246.33	DRY
SB21	08/25/15	45.39	43.65	1.74	45.70	5246.33	DRY
SB21	11/20/15	44.63	42.25	2.38	45.70	5246.33	5203.48
SB21	02/19/16	42.85	ND	TRACE	45.70	5246.33	5203.48
SB21	05/20/16	47.44	47.01	0.43	49.15	5249.71	5202.59
SB21	08/12/16	47.26	46.26 ³	1.00 ³	49.14	5249.71	5203.20
SB21	11/18/16	48.13	46.96	1.17	NM	5249.71	5203.20
SB21	02/13/17	48.59	46.93	1.66	NM	5249.71	5202.36
SB21	05/09/17	49.23	47.18	2.05	49.59	5250.32	5202.63
SB21	08/22/17	49.39	46.64	2.75	NM	5250.32	5202.99
SB21	11/17/17	47.56	47.45	0.11	NM	5250.32	5202.84
SB21	02/23/18	47.95	47.14	0.81	NM	5250.32	5202.98
SB21	05/18/18	48.19	46.91	1.28	NM	5250.32	5203.09
SB21	08/24/18	48.66	47.01	1.65	49.65	5250.32	5202.90
SB21	11/06/18	49.01	47.01	2.00	49.70	5250.32	5202.81
SB21	02/22/19	48.84	48.64	0.20	NM	5250.32	5201.63
SB21	05/17/19	49.55	49.42	0.13	NM	5250.32	5200.87
SB21	08/23/19	DRY	ND	0.00	49.63	5250.32	DRY
SB22	02/21/14	50.07	ND	0.00	50.30	5250.64	DRY
SB22	05/16/14	50.09	ND	0.00	50.30	5250.64	DRY
SB22	08/27/14	50.05	ND	0.00	50.30	5250.64	DRY

Table 1-23

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB22	11/18/14	49.94	ND	0.00	50.30	5250.64	DRY
SB22	02/11/15	50.10	ND	0.00	50.30	5250.64	DRY
SB22	05/18/15	50.03	ND	0.00	50.30	5250.64	DRY
SB22	08/25/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned					
SB22R	02/21/14	50.03	ND	0.00	63.07	5250.65	5200.62
SB22R	05/16/14	50.07	ND	0.00	63.07	5250.65	5200.58
SB22R	08/27/14	49.94	ND	0.00	63.07	5250.65	5200.71
SB22R	11/18/14	49.92	ND	0.00	63.07	5250.65	5200.73
SB22R	02/11/15	50.32	ND	0.00	63.07	5250.65	5200.33
SB22R	05/18/15	47.15	ND	0.00	59.89	5247.58	5200.43
SB22R	08/25/15	48.92	ND	0.00	59.90	5247.58	5198.66
SB22R	11/20/15	46.44	ND	0.00	59.90	5248.58	5202.14
SB22R	02/19/16	45.63	ND	0.00	59.90	5248.58	5202.95
SB22R	05/20/16	49.55	ND	0.00	63.39	5251.08	5201.53
SB22R	08/12/16	49.76	ND	0.00	63.39	5251.08	5201.32
SB22R	11/18/16	49.58	ND	0.00	63.44	5251.08	5201.50
SB22R	02/13/17	49.86	ND	0.00	63.39	5251.08	5201.22
SB22R	05/09/17	49.55	ND	0.00	63.40	5251.08	5201.53
SB22R	08/22/17	49.47	ND	0.00	63.40	5251.08	5201.61
SB22R	11/17/17	48.96	ND	0.00	63.39	5251.08	5202.12
SB22R	02/23/18	49.07	ND	0.00	63.46	5251.08	5202.01
SB22R	05/18/18	48.87	ND	0.00	63.49	5251.08	5202.21
SB22R	08/24/18	48.90	ND	0.00	63.44	5251.08	5202.18
SB22R	11/06/18	48.78	ND	0.00	63.47	5251.08	5202.30
SB22R	02/22/19	49.29	ND	0.00	63.39	5251.08	5201.79
SB22R	05/17/19	49.32	ND	0.00	63.52	5251.08	5201.76
SB22R	08/23/19	49.44	ND	0.00	63.48	5251.08	5201.64
SB23	02/21/14	48.75	48.70	0.05	50.61	5249.95	5201.24
SB23	05/16/14	48.83	48.75	0.08	50.61	5249.95	5201.18
SB23	08/27/14	49.06	48.64	0.42	50.61	5249.95	5201.21
SB23	11/18/14	49.16	48.62	0.54	50.61	5249.95	5201.20
SB23	02/11/15	49.65	48.81	0.84	50.61	5249.95	5200.93
SB23	05/18/15	45.92	45.35	0.57	47.09	5246.61	5201.12
SB23	08/25/15	ND	ND	0.00	43.30	5246.61	DRY
SB23	11/20/15	ND	ND	0.00	43.30	5247.61	DRY
SB23	02/19/16	ND	ND	0.00	43.30	5247.61	DRY
SB23	05/20/16	ND	ND	0.00	41.38	5249.88	DRY
SB23	08/12/16	ND	ND	0.00	41.37	5249.88	DRY
SB23	11/18/16	ND	ND	0.00	41.41	5249.88	DRY
SB23	02/13/17	ND	ND	0.00	41.38	5249.88	DRY
SB23	05/09/17	Removed From Groundwater Monitoring Program - Plugged and Abandoned					
SB23R	05/09/17	48.23	ND	0.00	60.65	5250.34	5202.11
SB23R	08/22/17	48.42	47.98	0.44	60.66	5250.34	5202.25

Table 1-24

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB23R	11/17/17	47.39	ND	0.00	60.65	5250.34	5202.95
SB23R	02/23/18	47.81	47.50	0.31	NM	5250.34	5202.76
SB23R	05/18/18	47.78	47.35	0.43	NM	5250.34	5202.88
SB23R	08/24/18	47.63	47.16	0.47	60.65	5250.34	5203.06
SB23R	11/06/18	47.73	47.00	0.73	60.77	5250.34	5203.16
SB23R	02/22/19	48.56	47.71	0.85	NM	5250.34	5202.42
SB23R	05/17/19	46.66	46.64	0.02	NM	5250.34	5203.70
SB23R	08/23/19	46.96	46.88	0.08	60.54	5250.34	5203.44
SB24	02/21/14	48.47	ND	0.00	49.82	5249.46	5200.99
SB24	05/16/14	48.35	ND	0.00	49.82	5249.46	5201.11
SB24	08/27/14	48.43	ND	0.00	49.82	5249.46	5201.03
SB24	11/18/14	48.33	ND	0.00	49.82	5249.46	5201.13
SB24	02/11/15	48.61	ND	0.00	49.82	5249.46	5200.85
SB24	05/18/15	48.66	ND	0.00	49.82	5249.46	5200.80
SB24	08/25/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned					
SB24R	02/21/14	49.08	ND	0.00	62.22	5250.04	5200.96
SB24R	05/16/14	48.86	ND	0.00	62.22	5250.04	5201.18
SB24R	08/27/14	48.96	ND	0.00	62.22	5250.04	5201.08
SB24R	11/18/14	48.85	ND	0.00	62.22	5250.04	5201.19
SB24R	02/11/15	49.20	ND	0.00	62.22	5250.04	5200.84
SB24R	05/18/15	46.90	ND	0.00	59.83	5247.80	5200.90
SB24R	08/25/15	46.78	ND	0.00	59.84	5247.80	5201.02
SB24R	11/20/15	46.52	ND	0.00	59.84	5248.80	5202.28
SB24R	02/19/16	46.38	ND	0.00	59.84	5248.80	5202.42
SB24R	05/20/16	46.19	ND	0.00	59.84	5248.80	5202.61
SB24R	08/12/16	46.52	ND	0.00	59.85	5248.80	5202.28
SB24R	11/18/16	46.51	ND	0.00	59.97	5248.80	5202.29
SB24R	02/13/17	46.39	ND	0.00	59.83	5248.80	5202.41
SB24R	05/09/17	46.13	ND	0.00	59.85	5248.80	5202.67
SB24R	08/22/17	46.17	ND	0.00	59.87	5248.80	5202.63
SB24R	11/17/17	45.51	ND	0.00	NM	5248.80	5203.29
SB24R	02/23/18	45.74	ND	0.00	NM	5248.80	5203.06
SB24R	05/18/18	45.55	ND	0.00	60.25	5248.80	5203.25
SB24R	08/24/18	45.40	ND	0.00	59.97	5248.80	5203.40
SB24R	11/06/18	Not Measured - Obstructed Access					
SB24R	02/22/19	Not Measured - Unable to locate well					
SB24R	05/17/19	Not Measured - Unable to locate well					
SB24R	08/23/19	Not Measured - Unable to locate well					
SB25	02/21/14	50.19	ND	0.00	50.41	5249.20	DRY
SB25	05/16/14	50.15	ND	0.00	50.41	5249.20	DRY
SB25	08/27/14	50.20	ND	0.00	50.41	5249.20	DRY
SB25	11/18/14	50.22	ND	0.00	50.41	5249.20	DRY
SB25	02/11/15	50.22	ND	0.00	50.41	5249.20	DRY

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB25	05/18/15	50.20	ND	0.00	50.41	5249.20	DRY
SB25	08/25/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned					
SB25R	02/21/14	51.75	ND	0.00	67.30	5249.39	5197.64
SB25R	05/16/14	51.55	ND	0.00	67.30	5249.39	5197.84
SB25R	08/27/14	51.65	ND	0.00	67.30	5249.39	5197.74
SB25R	11/18/14	51.58	ND	0.00	67.30	5249.39	5197.81
SB25R	02/11/15	51.96	ND	0.00	67.30	5249.39	5197.43
SB25R	05/18/15	49.60	ND	0.00	64.97	5247.15	5197.55
SB25R	08/25/15	49.31	ND	0.00	65.00	5247.15	5197.84
SB25R	11/20/15	48.98	ND	0.00	65.00	5248.15	5199.17
SB25R	02/19/16	48.56	ND	0.00	65.00	5248.15	5199.59
SB25R	05/20/16	48.54	ND	0.00	65.00	5248.15	5199.61
SB25R	08/12/16	48.35	ND	0.00	65.00	5248.15	5199.80
SB25R	11/18/16	47.96	ND	0.00	65.05	5248.15	5200.19
SB25R	02/13/17	48.02	ND	0.00	64.99	5248.15	5200.13
SB25R	05/09/17	47.71	ND	0.00	65.00	5248.15	5200.44
SB25R	08/22/17	47.74	ND	0.00	65.00	5248.15	5200.41
SB25R	11/17/17	47.43	ND	0.00	65.00	5248.15	5200.72
SB25R	02/23/18	47.60	ND	0.00	65.06	5248.15	5200.55
SB25R	05/18/18	47.50	ND	0.00	65.14	5248.15	5200.65
SB25R	08/24/18	47.74	ND	0.00	65.13	5248.15	5200.41
SB25R	11/06/18	47.80	ND	0.00	65.08	5248.15	5200.35
SB25R	02/22/19	47.98	ND	0.00	65.02	5248.15	5200.17
SB25R	05/17/19	47.73	ND	0.00	65.08	5248.15	5200.42
SB25R	08/23/19	47.85	ND	0.00	65.90	5248.15	5200.30
SB26	02/21/14	43.87	ND	0.00	50.35	5246.92	5203.05
SB26	05/16/14	43.65	ND	0.00	50.35	5246.92	5203.27
SB26	08/27/14	43.63	ND	0.00	50.35	5246.92	5203.29
SB26	11/18/14	43.45	ND	0.00	50.35	5246.92	5203.47
SB26	02/11/15	43.68	ND	0.00	50.35	5246.92	5203.24
SB26	05/18/15	43.59	ND	0.00	50.35	5246.92	5203.33
SB26	08/25/15	41.24	ND	0.00	48.38	5245.12	5203.88
SB26	11/20/15	40.29	ND	0.00	48.38	5246.12	5205.83
SB26	02/19/16	39.89	ND	0.00	48.38	5246.12	5206.23
SB26	05/20/16	39.62	ND	0.00	48.38	5246.12	5206.50
SB26	08/12/16	39.43	ND	0.00	48.36	5246.12	5206.69
SB26	11/18/16	38.80	ND	0.00	48.45	5246.12	5207.32
SB26	02/13/17	38.39	ND	0.00	48.28	5246.12	5207.73
SB26	05/09/17	37.94	ND	0.00	48.34	5246.12	5208.18
SB26	08/22/17	37.75	ND	0.00	48.32	5246.12	5208.37
SB26	11/17/17	36.85	ND	0.00	NM	5246.12	5209.27
SB26	02/23/18	36.57	ND	0.00	NM	5246.12	5209.55
SB26	05/18/18	36.15	ND	0.00	48.69	5246.12	5209.97

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB26	08/24/18	35.75	ND	0.00	48.48	5246.12	5210.37
SB26	11/06/18	35.22	ND	0.00	48.22	5246.12	5210.90
SB26	02/22/19	34.76	ND	0.00	48.30	5246.12	5211.36
SB26	05/17/19	34.29	ND	0.00	48.41	5246.12	5211.83
SB26	08/23/19	34.15	ND	0.00	49.04	5246.12	5211.97
SB27	02/21/14	50.27	ND	0.00	50.52	5250.91	DRY
SB27	05/16/14	50.29	ND	0.00	50.52	5250.91	DRY
SB27	08/27/14	50.30	ND	0.00	50.52	5250.91	DRY
SB27	11/18/14	50.30	ND	0.00	50.52	5250.91	DRY
SB27	02/11/15	50.31	ND	0.00	50.52	5250.91	DRY
SB27	05/18/15	50.29	ND	0.00	50.52	5250.91	DRY
SB27	08/25/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned					
SB27R	02/21/14	53.59	ND	0.00	67.51	5251.23	5197.64
SB27R	05/16/14	53.36	ND	0.00	67.51	5251.23	5197.87
SB27R	08/27/14	53.48	ND	0.00	67.51	5251.23	5197.75
SB27R	11/18/14	53.39	ND	0.00	67.51	5251.23	5197.84
SB27R	02/11/15	53.79	ND	0.00	67.51	5251.23	5197.44
SB27R	05/18/15	51.35	ND	0.00	65.11	5248.92	5197.57
SB27R	08/25/15	51.22	ND	0.00	65.13	5248.92	5197.70
SB27R	11/20/15	50.98	ND	0.00	65.13	5249.92	5198.94
SB27R	02/19/16	50.83	ND	0.00	65.13	5249.92	5199.09
SB27R	05/20/16	50.62	ND	0.00	65.13	5249.92	5199.30
SB27R	08/12/16	50.84	ND	0.00	65.00	5249.92	5199.08
SB27R	11/18/16	50.82	ND	0.00	65.14	5249.92	5199.10
SB27R	02/13/17	50.52	ND	0.00	64.99	5249.92	5199.40
SB27R	05/09/17	50.27	ND	0.00	64.96	5249.92	5199.65
SB27R	08/22/17	54.10	ND	0.00	64.93	5249.92	5195.82
SB27R	11/17/17	49.72	ND	0.00	64.92	5249.92	5200.20
SB27R	02/23/18	50.05	ND	0.00	65.17	5249.92	5199.87
SB27R	05/18/18	49.96	ND	0.00	65.20	5249.92	5199.96
SB27R	08/24/18	50.03	ND	0.00	64.84	5249.92	5199.89
SB27R	11/06/18	50.02	ND	0.00	65.19	5249.92	5199.90
SB27R	02/22/19	49.96	ND	0.00	64.82	5249.92	5199.96
SB27R	05/17/19	49.60	ND	0.00	66.39	5249.92	5200.32
SB27R	08/23/19	50.00	ND	0.00	66.14	5249.92	5199.92
SB28	02/21/14	50.34	ND	0.00	50.56	5251.71	DRY
SB28	05/16/14	50.35	ND	0.00	50.56	5251.71	DRY
SB28	08/27/14	50.36	ND	0.00	50.56	5251.71	DRY
SB28	11/18/14	50.36	ND	0.00	50.56	5251.71	DRY
SB28	02/11/15	50.36	ND	0.00	50.56	5251.71	DRY
SB28	05/18/15	50.34	ND	0.00	50.56	5251.71	DRY
SB28	08/25/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned					
SB28R	02/21/14	50.98	ND	0.00	63.10	5251.40	5200.42

Table 1-27

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB28R	05/16/14	50.84	ND	0.00	63.10	5251.40	5200.56
SB28R	08/27/14	50.95	ND	0.00	63.10	5251.40	5200.45
SB28R	11/18/14	50.88	ND	0.00	63.10	5251.40	5200.52
SB28R	02/11/15	51.14	ND	0.00	63.10	5251.40	5200.26
SB28R	05/18/15	48.72	ND	0.00	60.67	5249.05	5200.33
SB28R	08/25/15	48.74	ND	0.00	60.68	5249.05	5200.31
SB28R	11/20/15	48.45	ND	0.00	60.68	5250.05	5201.60
SB28R	02/19/16	48.31	ND	0.00	60.68	5250.05	5201.74
SB28R	05/20/16	48.15	ND	0.00	60.68	5250.05	5201.90
SB28R	08/12/16	48.44	ND	0.00	60.68	5250.05	5201.61
SB28R	11/18/16	ND	ND	0.00	25.22	5250.05	DRY
SB28R	02/13/17	48.36	ND	0.00	60.66	5250.05	5201.69
SB28R	05/09/17	48.12	ND	0.00	60.68	5250.05	5201.93
SB28R	08/22/17	48.18	ND	0.00	60.69	5250.05	5201.87
SB28R	11/17/17	47.59	ND	0.00	60.69	5250.05	5202.46
SB28R	02/23/18	47.79	ND	0.00	60.80	5250.05	5202.26
SB28R	05/18/18	47.56	ND	0.00	60.97	5250.05	5202.49
SB28R	08/24/18	47.47	ND	0.00	60.46	5250.05	5202.58
SB28R	11/06/18	47.40	ND	0.00	60.81	5250.05	5202.65
SB28R	02/22/19	47.41	ND	0.00	60.69	5250.05	5202.64
SB28R	05/17/19	47.12	ND	0.00	60.75	5250.05	5202.93
SB28R	08/23/19	47.25	ND	0.00	61.64	5250.05	5202.80
SB29	02/21/14	45.24	ND	0.00	60.46	5248.09	5202.85
SB29	05/16/14	45.10	ND	0.00	60.46	5248.09	5202.99
SB29	08/27/14	45.02	ND	0.00	60.46	5248.09	5203.07
SB29	11/18/14	44.89	ND	0.00	60.46	5248.09	5203.20
SB29	02/11/15	45.09	ND	0.00	60.46	5248.09	5203.00
SB29	05/18/15	42.69	ND	0.00	58.05	5245.86	5203.17
SB29	08/25/15	42.40	ND	0.00	57.79	5245.86	5203.46
SB29	11/20/15	41.67	ND	0.00	57.79	5246.86	5205.19
SB29	02/19/16	41.16	ND	0.00	57.79	5246.86	5205.70
SB29	05/20/16	40.92	ND	0.00	57.79	5246.86	5205.94
SB29	08/12/16	41.00	ND	0.00	57.54	5246.86	5205.86
SB29	11/18/16	40.59	ND	0.00	57.69	5246.86	5206.27
SB29	02/13/17	40.28	ND	0.00	57.63	5246.86	5206.58
SB29	05/09/17	39.81	ND	0.00	57.63	5246.86	5207.05
SB29	08/22/17	39.72	ND	0.00	57.65	5246.86	5207.14
SB29	11/17/17	38.90	ND	0.00	NM	5246.86	5207.96
SB29	02/23/18	38.76	ND	0.00	NM	5246.86	5208.10
SB29	05/18/18	38.37	ND	0.00	57.94	5246.86	5208.49
SB29	08/24/18	38.03	ND	0.00	57.83	5246.86	5208.83
SB29	11/06/18	37.62	ND	0.00	57.71	5246.86	5209.24
SB29	02/22/19	37.25	ND	0.00	57.62	5246.86	5209.61

Table 1-28

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB29	05/17/19	36.75	ND	0.00	57.70	5246.86	5210.11
SB29	08/23/19	36.69	ND	0.00	58.43	5246.86	5210.17
SB30	02/21/14	47.77	44.80	2.97	61.00	5246.27	5200.73
SB30	05/16/14	47.19	44.70	2.49	61.00	5246.27	5200.95
SB30	08/27/14	46.24	44.82	1.42	61.00	5246.27	5201.10
SB30	11/18/14	46.02	45.79	0.23	61.00	5246.27	5200.43
SB30	02/11/15	47.22	45.82	1.40	61.00	5246.27	5200.10
SB30	05/18/15	47.58	45.28	2.30	61.00	5246.27	5200.42
SB30	08/25/15	48.56	40.95	7.61	59.65	5245.33	5202.48
SB30	11/20/15	48.14	40.07	8.07	59.65	5246.33	5204.24
SB30	02/19/16	39.60	39.59	0.01	59.65	5246.33	5206.74
SB30	05/20/16	52.25	44.05	8.20	63.68	5249.32	5203.22
SB30	08/12/16	52.21	44.35	7.86	63.66	5249.32	5203.01
SB30	11/18/16	51.74	44.42	7.32	NM	5249.32	5203.07
SB30	02/13/17	51.19	44.70	6.49	NM	5249.32	5203.00
SB30	05/09/17	NM	NM	NM	NM	5249.32	NM
SB30	08/22/17	48.59	46.15	2.44	NM	5249.32	5202.56
SB30	11/17/17	45.35	45.22	0.13	NM	5249.32	5204.07
SB30	02/23/18	48.80	44.47	4.33	NM	5249.32	5203.77
SB30	05/18/18	49.64	45.16	4.48	NM	5249.32	5203.04
SB30	08/24/18	48.59	44.38	4.21	63.67	5249.32	5203.89
SB30	11/06/18	45.64	45.49	0.15	63.76	5249.32	5203.79
SB30	02/22/19	49.71	46.05	3.66	NM	5249.32	5202.36
SB30	05/17/19	49.43	48.34	1.09	NM	5249.32	5200.71
SB30	08/23/19	49.06	48.87	0.19	63.68	5249.32	5200.40
SB31	02/21/14	50.11	48.01	2.10	64.30	5249.60	5201.06
SB31	05/16/14	51.47	48.07	3.40	64.30	5249.60	5200.68
SB31	08/27/14	49.65	47.72	1.93	64.30	5249.60	5201.40
SB31	11/18/14	50.76	50.36	0.40	64.30	5249.60	5199.14
SB31	02/11/15	49.88	48.94	0.94	64.30	5249.60	5200.42
SB31	05/18/15	50.22	48.44	1.78	64.30	5249.60	5200.71
SB31	08/25/15	49.39	42.84	6.55	59.26	5245.93	5201.45
SB31	11/20/15	49.95	41.61	8.34	59.26	5246.93	5203.24
SB31	02/19/16	41.09	40.96	0.13	59.26	5246.93	5205.94
SB31	05/20/16	54.20	45.00	9.20	63.13	5249.81	5202.51
SB31	08/12/16	53.61	45.16	8.45	63.10	5249.81	5202.54
SB31	11/18/16	53.22	45.13	8.09	NM	5249.81	5202.66
SB31	02/13/17	53.89	45.36	8.53	NM	5249.81	5202.32
SB31	05/09/17	NM	NM	NM	NM	5249.81	NM
SB31	08/22/17	48.38	47.62	0.76	NM	5249.81	5202.00
SB31	11/17/17	47.87	45.86	2.01	NM	5249.81	5203.45
SB31	02/23/18	47.77	47.24	0.53	NM	5249.81	5202.44
SB31	05/18/18	48.72	45.50	3.22	NM	5249.81	5203.51

Table 1-29

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB31	08/24/18	46.50	46.33	0.17	63.14	5249.81	5203.44
SB31	11/06/18	48.14	45.98	2.16	63.27	5249.81	5203.29
SB31	02/22/19	50.01	47.79	2.22	NM	5249.81	5201.47
SB31	05/17/19	50.43	49.13	1.30	NM	5249.81	5200.36
SB31	08/23/19	51.96	48.96	3.00	62.83	5249.81	5200.10
SB32	02/21/14	48.27	ND	0.00	62.39	5249.31	5201.04
SB32	05/16/14	48.18	ND	0.00	62.39	5249.31	5201.13
SB32	08/27/14	48.19	ND	0.00	62.39	5249.31	5201.12
SB32	11/18/14	48.38	ND	0.00	62.39	5249.31	5200.93
SB32	02/11/15	48.83	ND	0.00	62.39	5249.31	5200.48
SB32	05/18/15	45.90	ND	0.00	59.62	5246.64	5200.74
SB32	08/25/15	ND	ND	0.00	41.08	5246.64	DRY
SB32	11/20/15	ND	ND	0.00	41.08	5247.64	DRY
SB32	02/19/16	ND	ND	0.00	41.08	5247.64	DRY
SB32	05/20/16	ND	ND	0.00	42.05	5250.72	DRY
SB32	08/12/16	ND	ND	0.00	42.06	5250.72	DRY
SB32	11/18/16	ND	ND	0.00	42.14	5250.72	DRY
SB32	02/13/17	ND	ND	0.00	42.06	5250.72	DRY
SB32	05/09/17	ND	ND	0.00	42.07	5250.72	DRY
SB32	08/22/17	ND	ND	0.00	42.09	5250.72	DRY
SB32	11/17/17	ND	ND	0.00	42.07	5250.72	DRY
SB32	02/23/18	ND	ND	0.00	42.15	5250.72	DRY
SB32	05/18/18	ND	ND	0.00	42.10	5250.72	DRY
SB32	08/24/18	ND	ND	0.00	NM	5250.72	DRY
SB32	11/06/18	ND	ND	0.00	42.12	5250.72	DRY
SB32	02/22/19	ND	ND	0.00	42.10	5250.72	DRY
SB32	05/17/19	ND	ND	0.00	42.26	5250.72	DRY
SB32	08/23/19	DRY	ND	0.00	42.19	5250.72	DRY
SB33	02/21/14	62.26	ND	0.00	62.55	5246.16	DRY
SB33	05/16/14	62.02	ND	0.00	62.55	5246.16	5184.14
SB33	08/27/14	59.51	ND	0.00	62.55	5246.16	5186.65
SB33	11/18/14	57.49	ND	0.00	62.55	5246.16	5188.67
SB33	02/11/15	55.64	ND	0.00	62.55	5246.16	5190.52
SB33	05/18/15	53.86	ND	0.00	60.39	5246.16	5192.30
SB33	08/25/15	50.35	ND	0.00	60.69	5244.21	5193.86
SB33	11/20/15	49.16	ND	0.00	60.69	5245.21	5196.05
SB33	02/19/16	47.69	ND	0.00	60.69	5245.21	5197.52
SB33	05/20/16	46.33	ND	0.00	60.69	5245.21	5198.88
SB33	08/12/16	44.47	ND	0.00	60.60	5245.21	5200.74
SB33	11/18/16	41.65	ND	0.00	60.67	5245.21	5203.56
SB33	02/13/17	39.69	ND	0.00	60.60	5245.21	5205.52
SB33	05/09/17	38.56	ND	0.00	60.60	5245.21	5206.65
SB33	08/22/17	37.57	ND	0.00	60.60	5245.21	5207.64

Table 1-30

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB33	11/17/17	37.32	ND	0.00	NM	5245.21	5207.89
SB33	02/23/18	37.38	ND	0.00	NM	5245.21	5207.83
SB33	05/18/18	37.22	ND	0.00	60.62	5245.21	5207.99
SB33	08/24/18	37.34	ND	0.00	60.70	5245.21	5207.87
SB33	11/06/18	37.30	ND	0.00	60.66	5245.21	5207.91
SB33	02/22/19	37.15	ND	0.00	60.62	5245.21	5208.06
SB33	05/17/19	36.92	ND	0.00	60.65	5245.21	5208.29
SB33	08/23/19	36.83	ND	0.00	61.50	5245.21	5208.38
SB34	02/21/14	54.88	ND	0.00	62.80	5252.59	5197.71
SB34	05/16/14	54.72	ND	0.00	62.80	5252.59	5197.87
SB34	08/27/14	54.78	ND	0.00	62.80	5252.59	5197.81
SB34	11/18/14	54.65	ND	0.00	62.80	5252.59	5197.94
SB34	02/11/15	55.04	ND	0.00	62.80	5252.59	5197.55
SB34	05/18/15	52.58	ND	0.00	60.36	5250.19	5197.61
SB34	08/25/15	52.47	ND	0.00	60.40	5250.19	5197.72
SB34	11/20/15	52.19	ND	0.00	60.40	5251.19	5199.00
SB34	02/19/16	52.13	ND	0.00	60.40	5251.19	5199.06
SB34	05/20/16	51.95	ND	0.00	60.40	5251.19	5199.24
SB34	08/12/16	52.22	ND	0.00	60.38	5251.19	5198.97
SB34	11/18/16	52.17	ND	0.00	60.45	5251.19	5199.02
SB34	02/13/17	52.02	ND	0.00	60.38	5251.19	5199.17
SB34	05/09/17	51.71	ND	0.00	60.39	5251.19	5199.48
SB34	08/22/17	51.86	ND	0.00	63.80	5251.19	5199.33
SB34	11/17/17	51.17	ND	0.00	NM	5251.19	5200.02
SB34	02/23/18	51.53	ND	0.00	NM	5251.19	5199.66
SB34	05/18/18	51.40	ND	0.00	60.15	5251.19	5199.79
SB34	08/24/18	51.44	ND	0.00	60.48	5251.19	5199.75
SB34	11/06/18	51.42	ND	0.00	60.13	5251.19	5199.77
SB34	02/22/19	51.36	ND	0.00	60.40	5251.19	5199.83
SB34	05/17/19	51.05	ND	0.00	60.14	5251.19	5200.14
SB34	08/23/19	51.36	ND	0.00	61.35	5251.19	5199.83
SB35	02/21/14	53.18	ND	0.00	63.40	5250.71	5197.53
SB35	05/16/14	52.97	ND	0.00	63.40	5250.71	5197.74
SB35	08/27/14	53.02	ND	0.00	63.40	5250.71	5197.69
SB35	11/18/14	52.93	ND	0.00	63.40	5250.71	5197.78
SB35	02/11/15	53.35	ND	0.00	63.40	5250.71	5197.36
SB35	05/18/15	50.25	ND	0.00	60.34	5247.79	5197.54
SB35	08/25/15	49.92	ND	0.00	63.40	5247.79	5197.87
SB35	11/20/15	49.67	ND	0.00	63.40	5248.79	5199.12
SB35	02/19/16	49.45	ND	0.00	63.40	5248.79	5199.34
SB35	05/20/16	49.22	ND	0.00	63.40	5248.79	5199.57
SB35	08/12/16	49.22	ND	0.00	60.32	5248.79	5199.57
SB35	11/18/16	49.10	ND	0.00	60.35	5248.79	5199.69

Table 1-31

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB35	02/13/17	48.87	ND	0.00	60.34	5248.79	5199.92
SB35	05/09/17	48.51	ND	0.00	60.35	5248.79	5200.28
SB35	08/22/17	48.64	ND	0.00	63.50	5248.79	5200.15
SB35	11/17/17	48.04	ND	0.00	NM	5248.79	5200.75
SB35	02/23/18	48.40	ND	0.00	NM	5248.79	5200.39
SB35	05/18/18	48.31	ND	0.00	60.49	5248.79	5200.48
SB35	08/24/18	48.50	ND	0.00	60.47	5248.79	5200.29
SB35	11/06/18	48.56	ND	0.00	60.42	5248.79	5200.23
SB35	02/22/19	48.66	ND	0.00	60.36	5248.79	5200.13
SB35	05/17/19	48.30	ND	0.00	60.42	5248.79	5200.49
SB35	08/23/19	48.50	ND	0.00	61.45	5248.79	5200.29
SB36	02/21/14	42.65	ND	0.00	63.05	5243.07	5200.42
SB36	05/16/14	42.40	ND	0.00	63.05	5243.07	5200.67
SB36	08/27/14	41.97	ND	0.00	63.05	5243.07	5201.10
SB36	11/18/14	41.76	ND	0.00	63.05	5243.07	5201.31
SB36	02/11/15	41.71	ND	0.00	63.05	5243.07	5201.36
SB36	05/18/15	41.45	ND	0.00	63.05	5243.07	5201.62
SB36	08/25/15	34.09	ND	0.00	59.72	5239.97	5205.88
SB36	11/20/15	32.82	ND	0.00	59.72	5240.97	5208.15
SB36	02/19/16	32.76	ND	0.00	59.75	5240.97	5208.21
SB36	05/20/16	31.31	ND	0.00	59.75	5240.97	5209.66
SB36	08/12/16	30.21	ND	0.00	59.78	5240.97	5210.76
SB36	11/18/16	29.05	ND	0.00	59.89	5240.97	5211.92
SB36	02/13/17	28.62	ND	0.00	59.68	5240.97	5212.35
SB36	05/09/17	32.32	ND	0.00	63.69	5243.94	5211.62
SB36	08/22/17	31.82	ND	0.00	63.66	5243.94	5212.12
SB36	11/17/17	30.84	ND	0.00	63.65	5243.94	5213.10
SB36	02/23/18	30.59	ND	0.00	63.73	5243.94	5213.35
SB36	05/18/18	30.52	ND	0.00	64.26	5243.94	5213.42
SB36	08/24/18	29.58	ND	0.00	63.72	5243.94	5214.36
SB36	11/06/18	29.40	ND	0.00	63.74	5243.94	5214.54
SB36	02/22/19	29.63	ND	0.00	63.64	5243.94	5214.31
SB36	05/17/19	29.78	ND	0.00	63.72	5243.94	5214.16
SB36	08/23/16	29.75	ND	0.00	64.64	5243.94	5214.19
SB37	02/21/14	63.00	ND	0.00	66.40	5249.25	5186.25
SB37	05/16/14	51.38	ND	0.00	66.40	5249.25	5197.87
SB37	08/27/14	48.05	ND	0.00	66.40	5249.25	5201.20
SB37	11/18/14	48.09	ND	0.00	66.40	5249.25	5201.16
SB37	02/11/15	48.36	ND	0.00	66.40	5249.25	5200.89
SB37	05/18/15	48.20	ND	0.00	66.40	5249.25	5201.05
SB37	08/25/15	46.33	ND	0.00	64.81	5246.31	5199.98
SB37	11/20/15	45.58	ND	0.00	64.81	5247.31	5201.73
SB37	02/19/16	45.44	ND	0.00	64.81	5247.31	5201.87

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB37	05/20/16	47.92	47.85	0.07	66.81	5249.79	5201.93
SB37	08/12/16	47.81	47.72	0.09	66.84	5249.79	5202.05
SB37	11/18/16	47.65	47.43	0.22	NM	5249.79	5202.31
SB37	02/13/17	48.35	47.90	0.45	NM	5249.79	5201.78
SB37	05/09/17	47.70	47.38	0.32	66.85	5249.79	5202.33
SB37	08/22/17	47.47	47.15	0.32	NM	5249.79	5202.56
SB37	11/17/17	47.06	46.87	0.19	NM	5249.79	5202.88
SB37	02/23/18	47.20	46.72	0.48	NM	5249.79	5202.95
SB37	05/18/18	47.08	46.65	0.43	NM	5249.79	5203.04
SB37	08/24/18	47.00	46.48	0.52	66.83	5249.79	5203.18
SB37	11/06/18	46.76	46.29	0.47	66.91	5249.79	5203.39
SB37	02/22/19	47.65	47.22	0.43	NM	5249.79	5202.46
SB37	05/17/19	46.40	45.96	0.44	NM	5249.79	5203.72
SB37	08/23/19	46.18	45.83	0.35	66.82	5249.79	5203.87
SB38	02/21/14	40.48	ND	0.00	63.58	5243.61	5203.13
SB38	05/16/14	40.16	ND	0.00	63.58	5243.61	5203.45
SB38	08/27/14	40.32	ND	0.00	63.58	5243.61	5203.29
SB38	11/18/14	40.08	ND	0.00	63.58	5243.61	5203.53
SB38	02/11/15	40.35	ND	0.00	63.58	5243.61	5203.26
SB38	05/18/15	40.31	ND	0.00	63.58	5243.61	5203.30
SB38	08/25/15	35.63	ND	0.00	60.51	5240.73	5205.10
SB38	11/20/15	34.68	ND	0.00	60.51	5241.73	5207.05
SB38	02/19/16	34.39	ND	0.00	60.42	5241.73	5207.34
SB38	05/20/16	33.19	ND	0.00	60.42	5241.73	5208.54
SB38	08/12/16	31.54	ND	0.00	60.34	5241.73	5210.19
SB38	11/18/16	30.69	ND	0.00	60.61	5241.73	5211.04
SB38	02/13/17	29.97	ND	0.00	60.28	5241.73	5211.76
SB38	05/09/17	33.85	ND	0.00	64.49	5244.87	5211.02
SB38	08/22/17	33.49	ND	0.00	64.45	5244.87	5211.38
SB38	11/17/17	32.34	ND	0.00	64.46	5244.87	5212.53
SB38	02/23/18	32.12	ND	0.00	64.75	5244.87	5212.75
SB38	05/18/18	31.97	ND	0.00	64.55	5244.87	5212.90
SB38	08/24/18	31.23	ND	0.00	64.51	5244.87	5213.64
SB38	11/06/18	30.89	ND	0.00	64.48	5244.87	5213.98
SB38	02/22/19	30.90	ND	0.00	64.39	5244.87	5213.97
SB38	05/17/19	30.93	ND	0.00	64.79	5244.87	5213.94
SB38	08/23/19	30.92	ND	0.00	65.69	5244.87	5213.95
SB38	08/30/19	31.02	ND	0.00	64.39	5244.87	5213.85
SB39	02/21/14	50.54	ND	0.00	61.57	5241.88	5191.34
SB39	05/16/14	45.38	ND	0.00	61.57	5241.88	5196.50
SB39	08/27/14	44.19	ND	0.00	61.57	5241.88	5197.69
SB39	11/18/14	43.98	ND	0.00	61.57	5241.88	5197.90
SB39	02/11/15	44.01	ND	0.00	61.57	5241.88	5197.87

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB39	05/18/15	43.74	ND	0.00	61.57	5241.88	5198.14
SB39	08/25/15	36.44	ND	0.00	59.14	5239.65	5203.21
SB39	11/20/15	36.68	ND	0.00	59.14	5240.65	5203.97
SB39	02/19/16	36.05	ND	0.00	59.11	5240.65	5204.60
SB39	05/20/16	31.67	ND	0.00	59.11	5240.65	5208.98
SB39	08/12/16	30.51	ND	0.00	59.12	5240.65	5210.14
SB39	11/18/16	29.46	ND	0.00	59.15	5240.65	5211.19
SB39	02/13/17	28.66	ND	0.00	59.04	5240.65	5211.99
SB39	05/09/17	32.64	ND	0.00	63.23	5243.84	5211.20
SB39	08/22/17	32.38	ND	0.00	63.13	5243.84	5211.46
SB39	11/17/17	31.64	ND	0.00	63.20	5243.84	5212.20
SB39	02/23/18	31.53	ND	0.00	63.39	5243.84	5212.31
SB39	05/18/18	31.53	ND	0.00	63.95	5243.84	5212.31
SB39	08/24/18	30.48	ND	0.00	63.27	5243.84	5213.36
SB39	11/06/18	30.54	ND	0.00	63.36	5243.84	5213.30
SB39	02/22/19	30.91	ND	0.00	63.15	5243.84	5212.93
SB39	05/17/19	30.99	ND	0.00	63.34	5243.84	5212.85
SB39	08/23/19	30.92	ND	0.00	64.31	5243.84	5212.92
SB40	02/21/14	54.94	ND	0.00	62.83	5240.63	5185.69
SB40	05/16/14	45.58	ND	0.00	62.83	5240.63	5195.05
SB40	08/27/14	40.55	ND	0.00	62.83	5240.63	5200.08
SB40	11/18/14	40.14	ND	0.00	62.83	5240.63	5200.49
SB40	02/11/15	39.79	ND	0.00	62.83	5240.63	5200.84
SB40	05/18/15	38.77	ND	0.00	62.83	5240.63	5201.86
SB40	08/25/15	32.11	ND	0.00	59.71	5237.59	5205.48
SB40	11/20/15	30.30	ND	0.00	59.71	5238.59	5208.29
SB40	02/19/16	28.98	ND	0.00	59.04	5238.59	5209.61
SB40	05/20/16	27.41	ND	0.00	59.04	5238.59	5211.18
SB40	08/12/16	25.87	ND	0.00	58.95	5238.59	5212.72
SB40	11/18/16	25.24	ND	0.00	58.98	5238.59	5213.35
SB40	02/13/17	24.98	ND	0.00	58.82	5238.59	5213.61
SB40	05/09/17	29.16	ND	0.00	62.89	5241.74	5212.58
SB40	08/22/17	28.02	ND	0.00	62.82	5241.74	5213.72
SB40	11/17/17	26.90	ND	0.00	NM	5241.74	5214.84
SB40	02/23/18	27.26	ND	0.00	NM	5241.74	5214.48
SB40	05/18/18	27.10	ND	0.00	63.25	5241.74	5214.64
SB40	08/24/18	25.66	ND	0.00	62.86	5241.74	5216.08
SB40	11/06/18	26.09	ND	0.00	62.94	5241.74	5215.65
SB40	02/22/19	26.68	ND	0.00	62.71	5241.74	5215.06
SB40	05/17/19	27.12	ND	0.00	62.88	5241.74	5214.62
SB40	08/23/19	27.44	ND	0.00	63.68	5241.74	5214.30
SB41	02/21/14	39.90	ND	0.00	62.96	5242.91	5203.01
SB41	05/16/14	39.66	ND	0.00	62.96	5242.91	5203.25

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TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
SB41	08/27/14	39.75	ND	0.00	62.96	5242.91	5203.16
SB41	11/18/14	39.59	ND	0.00	62.96	5242.91	5203.32
SB41	02/11/15	39.79	ND	0.00	62.96	5242.91	5203.12
SB41	05/18/15	39.77	ND	0.00	62.96	5242.91	5203.14
SB41	08/25/15	35.69	ND	0.00	59.89	5239.96	5204.27
SB41	11/20/15	34.89	ND	0.00	59.89	5240.96	5206.07
SB41	02/19/16	34.51	ND	0.00	59.84	5240.96	5206.45
SB41	05/20/16	33.31	ND	0.00	59.84	5240.96	5207.65
SB41	08/12/16	31.29	ND	0.00	59.60	5240.96	5209.67
SB41	11/18/16	30.45	ND	0.00	59.74	5240.96	5210.51
SB41	02/13/17	29.82	ND	0.00	59.60	5240.96	5211.14
SB41	05/09/17	33.68	ND	0.00	63.80	5244.16	5210.48
SB41	08/22/17	33.34	ND	0.00	63.80	5244.16	5210.82
SB41	11/17/17	32.09	ND	0.00	NM	5244.16	5212.07
SB41	02/23/18	31.85	ND	0.00	NM	5244.16	5212.31
SB41	05/18/18	31.67	ND	0.00	63.97	5244.16	5212.49
SB41	08/24/18	30.98	ND	0.00	64.00	5244.16	5213.18
SB41	11/06/18	30.60	ND	0.00	63.94	5244.16	5213.56
SB41	02/22/19	30.55	ND	0.00	63.79	5244.16	5213.61
SB41	05/17/19	30.52	ND	0.00	63.96	5244.16	5213.64
SB41	08/23/19	30.59	ND	0.00	64.53	5244.16	5213.57
SB42	02/21/14	41.20	ND	0.00	60.60	5244.36	5203.16
SB42	05/16/14	40.68	ND	0.00	60.60	5244.36	5203.68
SB42	08/27/14	40.80	ND	0.00	60.60	5244.36	5203.56
SB42	11/18/14	40.57	ND	0.00	60.60	5244.36	5203.79
SB42	02/11/15	40.78	ND	0.00	60.60	5244.36	5203.58
SB42	05/18/15	40.74	ND	0.00	60.60	5244.36	5203.62
SB42	08/25/15	38.61	ND	0.00	59.23	5243.19	5204.58
SB42	11/20/15	37.53	ND	0.00	59.23	5244.19	5206.66
SB42	02/19/16	37.18	ND	0.00	59.21	5244.19	5207.01
SB42	05/20/16	36.85	ND	0.00	59.21	5244.19	5207.34
SB42	08/12/16	36.35	ND	0.00	59.22	5244.19	5207.84
SB42	11/18/16	35.59	ND	0.00	59.30	5244.19	5208.60
SB42	02/13/17	35.15	ND	0.00	59.23	5244.19	5209.04
SB42	05/09/17	34.69	ND	0.00	59.22	5244.19	5209.50
SB42	08/22/17	34.40	ND	0.00	59.22	5244.19	5209.79
SB42	11/17/17	33.53	ND	0.00	NM	5244.19	5210.66
SB42	02/23/18	33.13	ND	0.00	NM	5244.19	5211.06
SB42	05/18/18	32.64	ND	0.00	59.43	5244.19	5211.55
SB42	08/24/18	32.21	ND	0.00	59.34	5244.19	5211.98
SB42	11/06/18	31.60	ND	0.00	59.31	5244.19	5212.59
SB42	02/22/19			Not Measured - Unable to locate well			
SB42	05/17/19			Not Measured - Unable to locate well			
SB42	08/23/19	30.59	ND	0.00	59.98	5244.19	5213.60

TABLE 1
GROUNDWATER AND LNAPL ELEVATION DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	DTW (ft. BTOC)	DTP (ft. BTOC)	LNAPL Thickness (ft.)	TD ⁴ (ft. BTOC)	Top of Casing Elevation (ft. AMSL)	Groundwater Elevation* (ft. AMSL)
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Notes:

DTW = Depth to water

DTP = Depth to Product (LNAPL)

ft. BTOC = Feet below top of well casing

ft. AMSL = Feet above mean sea level

TD = Total depth of well below top of well casing (based on the most recent measurement)

LNAPL = Light non-aqueous phase liquid

ND = Not detected

NM = Not measured

DRY = Well contained less than 0.5 feet of water

* Groundwater elevation was corrected for product thickness when present using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water) + (LNAPL Thickness x LNAPL Relative Density)

LNAPL relative density was measured to be approximately 0.75

¹ LNAPL detected in groundwater sample collected on 02/22/16

² Well SB16R obstructed above oil/water interface, groundwater not encountered above obstruction

³ LNAPL thickness is approximate, checked with bailer

⁴ Total Depth of Well is only measured for wells that are to be sampled.

This table presents data collected by Tasman Geosciences. Historical data is presented in Attachment A of the Form 27 Site Assessment Report (COGCC Document #2148980)

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
PR01	03/07/14 ¹	10.98	6.960	6.63	-132.0	14.60
PR01	05/19/14	Removed From Groundwater Monitoring Program - LNAPL Recovery Well				
PR02	03/07/14 ¹	10.09	5.560	6.71	-72.9	11.56
PR02	05/19/14	Removed From Groundwater Monitoring Program - LNAPL Recovery Well				
PR03	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR04	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR05	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR06	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR07	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR08	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR09	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR10	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR11	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR12	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR13	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR14	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR15	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR16	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR17	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR18	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR19	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR20	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR21	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR22	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR23	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR24	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR25	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
PR26	11/21/14	Not in Groundwater Monitoring Program - LNAPL Recovery Well				
SB01	02/24/14	12.41	5.240	7.16	92.2	0.56
SB01	05/19/14	Removed From Groundwater Monitoring Program - Submerged Well Screen				
SB01	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned				
SB02	02/24/14	12.52	3.222	7.25	47.1	0.25
SB02	05/19/14	Removed From Groundwater Monitoring Program - Submerged Well Screen				
SB02	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned				
SB03	02/24/14	12.55	1.941	7.44	70.0	0.21
SB03	05/19/14	12.57	2.135	7.00	207.5	1.61
SB03	08/29/14	12.41	2.004	7.39	126.0	0.03
SB03	11/21/14	12.53	2.188	8.08	-182.9	0.96
SB03	02/13/15	12.34	1.881	7.30	27.6	0.60
SB03	05/21/15	12.20	1.814	7.09	158.8	0.55
SB03	08/27/15	12.61	2.068	7.28	12.0	0.20

Table 2- 1

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB03	11/24/15	12.01	2.139	6.65	-15.4	0.47
SB03	02/22/16	12.22	2.363	7.68	-49.4	0.23
SB03	05/23/16	12.46	2.380	7.06	-36.4	0.28
SB03	08/15/16	13.21	2.151	7.33	100.1	0.22
SB03	11/21/16	12.20	2.394	7.31	-1.8	0.93
SB03	02/16/17	12.40	3.026	7.34	112.6	0.50
SB03	05/09/17	16.55	3.030	6.68	96.6	2.13
SB03	08/24/17	13.52	2.980	7.72	97.6	0.03
SB03	11/20/17	13.40	3.100	6.96	125.6	4.72
SB03	02/26/18	11.67	3.290	7.28	39.0	4.90
SB03	05/21/18	15.41	2.870	7.21	68.4	3.56
SB03	08/27/18	13.98	2.620	6.97	47.2	3.29
SB03	11/09/18	12.51	1.880	7.37	4.0	20.70
SB03	02/25/19	11.64	2.580	7.79	190.4	1.93
SB03	05/20/19	11.28	3.010	7.32	88.0	3.03
SB03	08/26/19	16.81	2.587	7.38	225.2	0.36
SB04	02/24/14	12.00	3.138	7.29	71.3	0.16
SB04	05/19/14	12.81	3.097	7.08	224.5	0.45
SB04	08/29/14	12.37	3.083	7.65	155.6	0.16
SB04	11/21/14	12.29	3.076	7.60	-7.6	0.47
SB04	02/13/15	12.34	3.018	7.34	50.5	0.99
SB04	05/21/15	12.24	2.953	7.06	120.8	0.36
SB04	08/27/15	12.69	3.054	7.84	52.7	0.13
SB04	11/24/15	12.11	2.198	6.77	-64.4	0.27
SB04	02/22/16	12.15	2.317	7.31	-120.9	0.23
SB04	05/23/16	12.55	2.363	6.56	-166.8	1.07
SB04	08/15/16	12.45	2.597	7.33	-58.5	0.81
SB04	11/21/16	12.16	2.131	7.20	-112.0	0.25
SB04	02/16/17	12.30	3.003	7.40	-76.4	0.60
SB04	05/09/17	17.47	1.830	7.28	-90.4	0.56
SB04	08/24/17	13.40	2.070	7.69	-184.2	0.03
SB04	11/20/17	13.50	2.170	7.29	-160.9	0.25
SB04	02/26/18	11.22	2.350	7.41	55.0	0.14
SB04	05/21/18	17.43	2.120	7.50	-111.7	0.31
SB04	08/27/18	14.92	2.560	7.01	-131.1	0.17
SB04	11/09/18	12.06	1.625	7.53	-69.2	0.77
SB04	02/25/19	10.88	2.280	7.91	-174.8	0.78
SB04	05/20/19	10.90	2.410	7.43	-187.6	0.02
SB04	08/26/19	16.25	2.195	7.54	-27.5	0.21
SB05	03/07/14 ¹	11.20	6.192	6.43	-152.9	3.55
SB05	05/19/14	Not Measured - LNAPL Present				

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB05	08/29/14				Not Measured - LNAPL Present	
SB05	11/21/14				Not Measured - LNAPL Present	
SB05	02/13/15				Not Measured - LNAPL Present	
SB05	05/21/15				Not Measured - LNAPL Present	
SB05	08/27/15				Not Measured - LNAPL Present	
SB05	11/24/15				Not Measured - LNAPL Present	
SB05	02/22/16				Not Measured - LNAPL Present	
SB05	05/23/16				Not Measured - LNAPL Present	
SB05	08/15/16				Not Measured - LNAPL Present	
SB05	11/21/16				Not Measured - LNAPL Present	
SB05	02/16/17				Not Measured - LNAPL Present	
SB05	05/09/17				Not Measured - LNAPL Present	
SB05	08/24/17				Not Measured - LNAPL Present	
SB05	11/20/17				Not Measured - LNAPL Present	
SB05	02/26/18				Not Measured - LNAPL Present	
SB05	05/21/18				Not Measured - LNAPL Present	
SB05	08/27/18				Not Measured - LNAPL Present	
SB05	11/09/18				Not Measured - LNAPL Present	
SB05	02/25/19				Not Measured - LNAPL Present	
SB05	05/20/19				Not Measured - LNAPL Present	
SB05	08/26/19				Not Measured - LNAPL Present	
SB06	02/24/14	12.57	3.446	7.20	144.4	0.34
SB06	05/19/14	12.74	3.933	6.99	268.9	0.19
SB06	08/29/14	12.54	3.952	7.22	156.0	0.04
SB06	11/21/14	12.46	3.767	7.60	153.6	2.25
SB06	02/13/15	12.48	3.879	6.99	54.2	0.22
SB06	05/21/15	12.52	3.765	6.91	3.4	0.08
SB06	08/27/15	12.51	5.039	7.17	101.4	0.12
SB06	11/24/15	12.19	5.367	6.62	1.2	0.38
SB06	02/22/16	12.31	5.379	7.03	-10.6	3.50
SB06	05/23/16	12.47	5.721	6.41	113.8	0.73
SB06	08/15/16	12.98	5.983	6.81	147.5	0.26
SB06	11/21/16	12.22	5.782	6.77	12.8	0.70
SB06	02/16/17	12.40	5.896	6.83	165.4	0.28
SB06	05/09/17	17.13	5.090	6.86	91.9	1.10
SB06	08/24/17	14.84	5.480	7.22	135.8	0.69
SB06	11/20/17	13.14	5.510	6.80	42.8	0.36
SB06	02/26/18	12.10	5.520	6.94	36.8	0.53
SB06	05/21/18	16.30	5.230	6.90	77.9	0.66
SB06	08/27/18	13.52	5.240	6.66	33.5	0.40
SB06	11/09/18	12.51	3.798	7.12	43.4	1.76

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB06	02/25/19	11.66	4.890	7.62	83.6	2.01
SB06	05/20/19	11.80	5.120	7.12	40.7	0.41
SB06	08/26/19	16.02	4.484	7.41	198.0	2.25
SB07	02/24/14	12.85	5.639	6.64	-101.3	0.57
SB07	05/19/14	13.19	5.564	6.68	-97.3	0.19
SB07	08/29/14	12.99	5.318	7.18	-68.5	0.05
SB07	11/21/14	12.88	5.280	7.10	-238.1	1.22
SB07	02/13/15	12.71	5.083	7.11	-76.8	1.69
SB07	05/21/15	12.85	5.033	7.01	-175.8	0.09
SB07	08/27/15	12.92	4.059	8.47	-216.8	0.16
SB07	11/24/15	12.70	2.305	12.49 ²	-248.3	0.19
SB07	02/22/16	12.80	1.896	6.99	-264.9	-0.40 ³
SB07	05/23/16	13.25	2.450	7.12	-241.0	-0.1 ³
SB07	08/15/16	13.64	2.511	7.03	-126.6	0.17
SB07	11/21/16	12.74	3.010	7.05	-86.8	0.19
SB07	02/16/17	12.90	3.980	7.20	-108.9	0.33
SB07	05/09/17	17.76	2.710	6.90	-87.5	0.35
SB07	08/24/17	16.15	3.040	7.31	-176.2	0.02
SB07	11/20/17	14.18	3.480	6.81	-169.2	0.08
SB07	02/26/18	11.33	4.020	7.18	-60.3	0.46
SB07	05/21/18	17.62	4.020	6.95	-130.1	0.08
SB07	08/27/18	13.84	4.430	6.93	-124.9	0.12
SB07	11/09/18	12.77	3.901	7.49	-66.6	0.59
SB07	02/25/19	12.39	5.190	7.72	-159.9	0.06
SB07	05/20/19	12.10	5.630	7.17	-228.9	0.00
SB07	08/26/19	18.18	5.363	7.57	-83.8	0.58
SB08	03/07/14 ¹	11.12	4.866	6.29	-170.9	3.95
SB08	05/19/14	13.39	5.197	6.80	-153.5	0.33
SB08	08/29/14	12.92	5.358	6.68	-74.4	0.34
SB08	11/21/14		Not Measured - LNAPL Present			
SB08	02/13/15		Not Measured - LNAPL Present			
SB08	05/21/15		Not Measured - LNAPL Present			
SB08	08/27/15	13.05	3.466	8.00	-187.6	0.07
SB08	11/24/15		Not Measured - LNAPL Present			
SB08	02/22/16	12.67	0.577	6.85	-197.4	-0.34 ³
SB08	05/23/16	13.23	1.630	6.73	-220.2	0.23
SB08	08/15/16	12.84	1.574	6.93	-97.7	0.25
SB08	11/21/16	12.69	2.008	6.80	-88.8	0.34
SB08	02/16/17	12.90	4.557	7.00	-175.9	0.33
SB08	05/09/17	18.69	1.870	6.81	-84.63	0.32
SB08	08/24/17	16.18	2.090	7.25	-153.2	0.06

Table 2- 4

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB08	11/20/17	14.23	2.150	6.87	-134.0	0.05
SB08	02/26/18	11.39	3.050	6.90	-61.9	0.34
SB08	05/21/18	16.45	2.570	6.94	-114.6	0.13
SB08	08/27/18	14.89	4.200	6.65	-197.8	0.11
SB08	11/09/18	12.89	3.720	7.43	-134.4	0.66
SB08	02/25/19	13.03	2.740	7.80	-156.3	0.00
SB08	05/20/19	11.84	5.360	7.18	-297.0	0.06
SB08	08/26/19	21.45	2.440	7.27	56.3	1.07
SB09	03/07/14 ¹	10.00	4.415	6.64	-123.5	8.81
SB09	05/19/14		Not Measured - LNAPL Present			
SB09	08/29/14		Not Measured - LNAPL Present			
SB09	11/21/14		Not Measured - LNAPL Present			
SB09	02/13/15		Not Measured - LNAPL Present			
SB09	05/21/15		Not Measured - LNAPL Present			
SB09	08/27/15		Not Measured - LNAPL Present			
SB09	11/24/15		Not Measured - LNAPL Present			
SB09	02/22/16		Not Measured - LNAPL Present			
SB09	05/23/16		Not Measured - LNAPL Present			
SB09	08/15/16		Not Measured - LNAPL Present			
SB09	11/21/16		Not Measured - LNAPL Present			
SB09	02/16/17		Not Measured - LNAPL Present			
SB09	05/09/17		Not Measured - LNAPL Present			
SB09	08/24/17		Not Measured - LNAPL Present			
SB09	11/20/17		Not Measured - LNAPL Present			
SB09	02/26/18		Not Measured - LNAPL Present			
SB09	05/21/18		Not Measured - LNAPL Present			
SB09	08/27/18		Not Measured - LNAPL Present			
SB09	11/09/18		Not Measured - LNAPL Present			
SB09	02/25/19	12.74	5.28	7.52	-117.7	0.55
SB09	05/20/19		Not Measured - LNAPL Present			
SB09	08/26/19		Not Measured - LNAPL Present			
SB10	03/07/14 ¹	11.48	8.344	6.31	-183.9	5.90
SB10	05/19/14	13.26	9.942	6.35	-158.5	0.14
SB10	08/29/14		Not Measured - LNAPL Present			
SB10	11/21/14	12.85	11.050	6.57	-136.7	0.38
SB10	02/13/15	12.91	11.395	6.51	-7.3	0.72
SB10	05/21/15		Not Measured - LNAPL Present			
SB10	08/27/15	13.90	12.480	7.85	-134.40	0.28
SB10	11/24/15	12.79	13.700	11.82 ²	-215.20	0.11
SB10	02/22/16	12.80	1.982	6.77	-249.90	-0.70 ³
SB10	05/23/16	13.33	5.112	6.56	-192.50	0.16

Table 2- 5

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB10	08/15/16	14.06	7.100	6.66	-87.70	0.17
SB10	11/21/16	12.84	8.444	6.47	-100.8	0.29
SB10	02/16/17	12.90	9.152	6.61	-128.3	0.39
SB10	05/09/17	18.69	7.950	6.55	-72.8	0.43
SB10	08/24/17	15.75	8.750	6.93	-186.1	0.01
SB10	11/20/17	13.62	9.120	6.65	-195.4	0.03
SB10	02/26/18	11.37	9.950	6.74	-91.5	0.35
SB10	05/21/18	17.91	5.420	6.57	-171.2	0.27
SB10	08/27/18	15.07	8.520	6.93	-262.3	0.13
SB10	11/09/18	12.99	4.622	7.16	-148.3	0.91
SB10	02/25/19	13.01	6.150	7.55	-216.7	0.05
SB10	05/20/19	12.43	6.670	7.02	-304.8	0.02
SB10	08/26/19	17.29	5.842	7.29	-105.9	0.08
SB11	02/24/14	12.60	2.218	7.38	20.2	0.49
SB11	05/19/14	13.03	2.312	7.25	130.9	6.69
SB11	08/29/14	12.65	2.423	7.49	118.1	0.10
SB11	11/21/14	12.49	2.524	7.39	-104.9	0.65
SB11	02/13/15	12.54	2.548	7.23	28.2	0.30
SB11	05/21/15	12.57	2.712	7.07	-2.5	0.11
SB11	08/27/15	12.55	2.787	8.21	-117.6	0.11
SB11	11/24/15	12.23	2.778	6.87	-35.7	0.26
SB11	02/22/16	12.37	2.840	7.25	-79.9	0.40
SB11	05/23/16	12.55	2.953	5.10 ²	134.2	0.31
SB11	08/15/16	12.64	2.953	7.09	51.2	0.26
SB11	11/21/16	12.27	2.852	7.02	-11.6	0.92
SB11	02/16/17	12.40	2.838	7.16	-77.3	0.40
SB11	05/09/17	16.51	2.350	6.84	95.8	1.09
SB11	08/24/17	18.76	2.320	7.72	73.2	0.20
SB11	11/20/17	14.22	2.690	7.06	38.0	0.29
SB11	02/26/18	11.63	2.870	7.26	18.0	0.55
SB11	05/21/18	17.35	2.730	7.33	26.0	1.52
SB11	08/27/18	14.92	2.870	6.89	-65.2	0.25
SB11	11/09/18	12.56	2.150	7.47	-23.4	0.98
SB11	02/25/19	11.59	2.920	7.86	-135.3	0.42
SB11	05/20/19	10.81	3.310	7.21	1.3	0.15
SB11	08/26/19	14.39	2.986	7.92	79.7	1.24
SB12	02/24/14	12.86	5.748	7.17	70.2	2.79
SB12	05/19/14	12.68	5.941	7.31	137.2	0.20
SB12	08/29/14	12.46	5.920	7.46	159.6	0.17
SB12	11/21/14	12.41	5.969	7.75	177.3	1.22
SB12	02/13/15	12.33	5.842	7.35	53.5	0.33

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB12	05/21/15	12.35	5.566	7.13	17.6	0.39
SB12	08/27/15	12.47	5.864	7.52	87.4	0.33
SB12	11/24/15	11.96	5.667	6.74	44.1	0.56
SB12	02/22/16	12.14	5.649	7.52	16.5	0.34
SB12	05/23/16	12.35	5.561	7.15	87.9	4.5
SB12	08/15/16	12.63	5.643	7.36	167.5	0.19
SB12	11/21/16	12.09	5.682	7.40	-11.0	0.09
SB12	02/16/17	12.20	5.709	7.49	166.7	0.60
SB12	05/09/17	Not Measured - Removed From Groundwater Monitoring Program				
SB12	08/24/17	16.02	7.720	7.92	8.10	0.51
SB12	11/20/17	14.45	3.610	6.89	-138.0	0.14
SB12	02/26/18	12.21	4.430	7.56	-14.1	0.15
SB12	05/21/18	14.94	5.550	7.43	-69.3	0.02
SB12	08/27/18	13.58	5.720	7.11	-111.3	0.13
SB12	11/09/18	12.36	3.293	7.67	-16.9	1.09
SB12	02/25/19	12.33	4.430	8.12	-192.8	0.05
SB12	05/20/19	10.82	5.220	7.44	-179.2	0.08
SB12	08/26/19	14.75	4.707	7.93	-77.2	0.16
SB13	02/24/14	12.72	3.556	7.98	23.5	0.16
SB13	05/19/14	13.75	4.699	7.52	202.2	0.14
SB13	08/29/14	12.89	4.605	7.58	154.6	0.10
SB13	11/21/14	12.75	4.651	7.83	164.4	1.37
SB13	02/13/15	12.65	4.861	7.35	42.9	0.41
SB13	05/21/15	12.72	4.708	7.10	-10.9	0.10
SB13	08/27/15	12.70	4.958	7.54	44.1	0.07
SB13	11/24/15	12.41	5.028	6.54	59.7	0.45
SB13	02/22/16	12.59	4.902	7.15	-29.5	0.25
SB13	05/23/16	13.14	5.040	7.10	-154.3	0.14
SB13	08/15/16	13.90	4.547	6.87	76.5	0.39
SB13	11/21/16	12.49	4.885	6.85	-9.5	0.42
SB13	02/16/17	12.60	5.213	7.30	-30.4	0.64
SB13	05/09/17	17.65	4.350	6.97	-36.7	1.04
SB13	08/24/17	14.22	4.790	7.36	-94.4	0.18
SB13	11/20/17	13.24	5.110	6.92	-106.0	0.27
SB13	02/26/18	11.83	5.420	7.12	-22.7	0.26
SB13	05/21/18	16.55	5.170	7.05	-61.1	0.15
SB13	08/27/18	14.02	5.230	6.83	-63.7	0.13
SB13	11/09/18	12.62	3.844	7.36	-13.8	1.00
SB13	02/25/19	11.67	5.380	7.80	-156.0	0.19
SB13	05/20/19	11.73	5.690	7.17	-177.3	0.00
SB13	08/26/19	13.57	5.452	7.72	-8.2	0.86

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB14	02/24/14	12.91	2.000	7.29	63.6	0.15
SB14	05/19/14	12.99	2.071	6.96	62.0	0.13
SB14	08/29/14	12.87	2.051	7.17	5.2	0.22
SB14	11/21/14	12.72	2.063	7.48	-122.5	0.51
SB14	02/13/15	12.77	1.977	7.10	-52.0	0.50
SB14	05/21/15	12.83	1.979	7.01	-122.2	0.18
SB14	08/27/15	12.78	2.079	8.30	-148.2	0.08
SB14	11/24/15	12.65	1.896	10.77 ²	-125.3	0.51
SB14	02/22/16	12.66	1.890	7.25	-234.1	0.33
SB14	05/23/16	13.15	1.985	6.95	-228.7	0.05
SB14	08/15/16	13.88	2.674	7.09	-83.5	0.20
SB14	11/21/16	12.61	2.154	6.87	-56.4	1.91
SB14	02/16/17	12.70	2.245	7.00	-81.4	0.60
SB14	05/09/17	16.54	1.950	6.69	-35.6	0.38
SB14	08/24/17	17.38	1.990	7.51	-133.5	0.03
SB14	11/20/17	13.22	2.240	7.06	-123.2	0.11
SB14	02/26/18	11.30	2.500	7.07	-9.8	0.30
SB14	05/21/18	19.46	2.430	7.03	-35.4	0.87
SB14	08/27/18	16.39	2.400	6.76	-85.9	0.25
SB14	11/09/18	12.67	1.902	7.49	-17.6	1.00
SB14	02/25/19	11.63	2.650	7.67	21.6	1.24
SB14	05/20/19	11.96	2.930	7.22	-110.4	0.00
SB14	08/26/19	15.22	2.611	7.74	203.2	2.92
SB15	02/24/14	12.50	3.080	6.97	-204.4	0.33
SB15	05/19/14	13.42	2.698	6.67	-46.9	0.60
SB15	08/29/14	12.91	2.588	6.92	17.6	0.57
SB15	11/21/14	12.55	2.404	6.97	-156.4	0.81
SB15	02/13/15	12.13	2.526	6.97	-47.2	1.12
SB15	05/21/15	12.74	1.857	6.98	-124.0	0.13
SB15	08/27/15	13.06	0.025	7.56	-62.2	9.29
SB15	11/24/15	12.55	1.124	10.12 ²	-88.3	0.29
SB15	02/22/16	12.52	1.089	7.54	-79.5	0.20
SB15	05/23/16	12.87	2.028	6.83	-178.8	0.12
SB15	08/15/16	13.03	2.481	6.88	-8.6	0.20
SB15	11/21/16	12.61	2.891	6.79	-30.2	0.22
SB15	02/16/17	13.00	3.557	6.94	-3.1	0.16
SB15	05/09/17	16.39	3.490	6.86	95.7	0.20
SB15	08/24/17	18.43	2.860	7.36	-94.0	0.07
SB15	11/20/17	13.90	4.130	6.81	86.9	0.47
SB15	02/26/18	11.51	4.410	6.77	43.2	1.12
SB15	05/21/18	16.61	4.180	6.70	73.4	0.74

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB15	08/27/18	14.77	4.170	6.49	48.6	0.20
SB15	11/09/18	12.71	3.227	7.21	-11.4	0.66
SB15	02/25/19	11.97	4.480	7.61	26.3	0.35
SB15	05/20/19	11.63	4.740	7.07	36.8	0.10
SB15	08/26/19	17.15	4.228	7.65	169.2	0.20
SB16	02/24/14	Not Measured - Insufficient Water				
SB16	05/19/14	Not Measured - Insufficient Water				
SB16	08/29/14	Not Measured - Insufficient Water				
SB16	11/21/14	Not Measured - Insufficient Water				
SB16	02/13/15	Not Measured - Insufficient Water				
SB16	05/21/15	Not Measured - Insufficient Water				
SB16	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned				
SB16R	03/07/14 ¹	10.84	3.736	6.84	-97.4	9.04
SB16R	05/19/14	12.95	4.355	7.15	-28.9	0.60
SB16R	08/29/14	Not Measured - LNAPL Present				
SB16R	11/21/14	Not Measured - LNAPL Present				
SB16R	02/13/15	Not Measured - LNAPL Present				
SB16R	05/21/15	Not Measured - LNAPL Present				
SB16R	08/27/15	Not Measured - LNAPL Present				
SB16R	11/24/15	Not Measured - LNAPL Present				
SB16R	02/22/16	Not Measured - LNAPL Present				
SB16R	05/23/16	Not Measured - LNAPL Present				
SB16R	08/15/16	Not Measured - LNAPL Present				
SB16R	11/21/16	Not Measured - LNAPL Present				
SB16R	02/16/17	Not Measured - LNAPL Present				
SB16R	05/09/07	Not Measured - Well Damaged and Removed from Monitoring Program				
SB16R2	08/24/17	19.10	4.18	7.66	-56.3	0.03
SB16R2	11/20/17	Not Measured - LNAPL Present				
SB16R2	02/27/18	Not Measured - LNAPL Present				
SB16R2	05/21/18	Not Measured - LNAPL Present				
SB16R2	08/27/18	Not Measured - LNAPL Present				
SB16R2	11/09/18	Not Measured - LNAPL Present				
SB16R2	02/25/19	Not Measured - LNAPL Present				
SB16R2	05/20/19	Not Measured - LNAPL Present				
SB16R2	08/26/19	Not Measured - LNAPL Present				
SB17	02/24/14	12.27	5.859	7.17	49.0	1.01
SB17	05/19/14	13.08	5.904	7.15	155.9	0.38
SB17	08/29/14	12.79	5.908	7.49	158.3	0.27
SB17	11/21/14	12.68	5.913	7.53	135.9	0.99
SB17	02/13/15	12.57	5.832	7.19	38.5	0.32
SB17	05/21/15	12.67	5.643	7.06	-13.9	0.67

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB17	08/27/15	12.67	5.729	7.57	51.0	0.95
SB17	11/24/15	12.29	5.647	6.77	52.5	2.33
SB17	02/22/16	12.38	5.734	7.37	9.6	0.26
SB17	05/23/16	12.83	5.683	7.20	38.7	0.20
SB17	08/15/16	12.99	5.710	7.30	171.8	0.63
SB17	11/21/16	12.40	5.724	7.34	8.4	0.41
SB17	02/16/17	12.50	5.834	7.34	112.0	0.31
SB17	05/09/17	16.96	4.930	7.16	49.3	0.35
SB17	08/24/17	18.35	5.300	7.62	10.5	0.02
SB17	11/20/17	13.90	5.360	7.05	-34.3	0.10
SB17	02/26/18	11.33	5.920	7.36	35.9	0.19
SB17	05/21/18	16.45	5.590	7.29	-49.5	0.07
SB17	08/27/18	13.62	5.860	7.07	26.4	0.12
SB17	11/09/18	12.43	4.163	7.58	3.0	1.10
SB17	02/25/19	12.47	5.610	8.01	-175.3	0.19
SB17	05/20/19	11.66	6.040	7.34	-44.8	0.00
SB17	08/26/19	14.81	5.611	7.75	150.6	2.83
SB18	02/24/14	12.56	5.622	7.18	59.6	0.50
SB18	05/19/14	12.84	5.669	7.13	169.2	0.41
SB18	08/29/14	12.98	5.644	7.38	13.4	0.07
SB18	11/21/14	12.54	5.812	7.43	-72.9	0.95
SB18	02/13/15	12.53	5.597	7.19	24.8	0.37
SB18	05/21/15	12.49	2.299	7.08	-69.0	0.16
SB18	08/27/15	12.72	4.188	8.15	-129.6	0.14
SB18	11/24/15	12.28	5.283	6.68	20.9	0.29
SB18	02/22/16	12.33	5.263	7.33	-46.8	0.21
SB18	05/23/16	12.80	5.221	7.11	-19.7	0.68
SB18	08/15/16	12.95	5.464	7.13	117.1	0.81
SB18	11/21/16	12.39	5.533	7.20	6.9	0.17
SB18	02/16/17	12.50	5.620	7.31	17.6	0.38
SB18	05/09/17	17.17	4.600	6.88	-58.5	0.45
SB18	08/24/17	Not Measured - Removed From Groundwater Monitoring Program				
SB19	02/24/14	12.24	5.457	7.16	19.5	0.91
SB19	05/19/14	13.17	5.473	7.18	82.7	0.30
SB19	08/29/14	12.68	5.376	7.34	-2.2	0.11
SB19	11/21/14	12.47	5.578	7.31	-101.9	1.20
SB19	02/13/15	12.45	5.469	7.04	25.5	1.80
SB19	05/21/15	12.44	5.145	7.00	-49.4	0.33
SB19	08/27/15	12.61	5.408	8.12	-119.5	0.20
SB19	11/24/15	12.15	5.243	6.63	-14.9	0.80
SB19	02/22/16	12.25	5.290	7.31	-111.8	0.21

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB19	05/23/16	12.75	5.209	7.18	-109.4	0.13
SB19	08/15/16	12.76	5.301	7.16	7.4	0.56
SB19	11/21/16	12.28	5.298	7.18	-31.2	0.70
SB19	02/16/17	12.40	5.398	7.30	52.7	0.96
SB19	05/09/17	16.85	4.500	7.02	-50.2	0.45
SB19	08/24/17	14.15	1.950	7.90	-154.7	0.03
SB19	11/20/17	13.15	2.260	7.22	-95.8	0.34
SB19	02/26/18	12.27	2.760	7.54	-20.1	0.11
SB19	05/21/18	Not Measured - Well Obstructed ⁴				
SB19	08/27/18	Not Measured - Well Obstructed ⁴				
SB19	11/09/18	Not Measured - Well Obstructed ⁴				
SB19	02/25/19	Not Measured - Well Obstructed ⁴				
SB19	05/20/19	Not Measured - Well Obstructed ⁴				
SB19	08/26/19	17.57	0.3716	8.32	190.8	1.37
SB20	02/24/14	Not Measured - Insufficient Water				
SB20	05/19/14	13.97	4.530	7.17	181.4	0.95
SB20	08/29/14	12.72	4.834	7.27	43.4	0.15
SB20	11/21/14	12.41	4.888	7.41	-6.2	1.86
SB20	02/13/15	12.41	4.802	6.74	50.0	1.08
SB20	05/21/15	12.54	4.722	6.97	71.5	1.61
SB20	08/27/15	13.78	0.045	7.77	-26.8	10.71
SB20	11/24/15	12.39	3.669	11.22 ²	-203.2	0.11
SB20	02/22/16	12.44	0.903	7.34	-82.8	0.73
SB20	05/23/16	12.98	1.720	7.36	-110.4	0.19
SB20	08/15/16	12.88	1.716	7.37	-29.8	0.42
SB20	11/21/16	12.42	2.671	7.15	-28.4	0.41
SB20	02/16/17	12.50	3.913	7.13	-71.4	0.55
SB20	05/09/17	16.64	3.520	6.92	-2.8	0.45
SB20	08/24/17	14.44	3.530	7.55	-87.9	0.16
SB20	11/20/17	13.07	2.580	7.21	-76.4	0.09
SB20	02/26/18	11.42	3.540	7.22	-10.2	0.20
SB20	05/21/18	16.52	4.590	7.10	-37.4	0.16
SB20	08/27/18	14.47	4.540	6.90	-118.1	0.10
SB20	11/09/18	12.67	2.302	7.36	-12.1	1.14
SB20	02/25/19	11.36	2.870	7.60	0.3	0.56
SB20	05/20/19	11.68	4.880	7.31	-73.5	0.05
SB20	08/26/19	15.40	2.793	7.72	-37.1	0.19
SB20R	02/24/14	Not Measured - Insufficient Water				
SB20R	05/19/14	Not Measured - Insufficient Water				
SB20R	08/29/14	Not Measured - Insufficient Water				
SB20R	11/21/14	Not Measured - Insufficient Water				

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB20R	02/13/15	Not Measured - Insufficient Water				
SB20R	05/21/15	Not Measured - Insufficient Water				
SB20R	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned				
SB21	02/24/14	Not Measured - Insufficient Water				
SB21	05/19/14	Not Measured - LNAPL Present				
SB21	08/29/14	Not Measured - LNAPL Present				
SB21	11/21/14	Not Measured - LNAPL Present				
SB21	02/13/15	Not Measured - LNAPL Present				
SB21	05/21/15	Not Measured - LNAPL Present				
SB21	08/27/15	Not Measured - LNAPL Present				
SB21	11/24/15	Not Measured - LNAPL Present				
SB21	02/22/16	Not Measured - LNAPL Present				
SB21	05/23/16	Not Measured - LNAPL Present				
SB21	08/15/16	Not Measured - LNAPL Present				
SB21	11/21/16	Not Measured - LNAPL Present				
SB21	02/16/17	Not Measured - LNAPL Present				
SB21	05/09/17	Not Measured - LNAPL Present				
SB21	08/24/17	Not Measured - LNAPL Present				
SB21	11/20/17	Not Measured - LNAPL Present				
SB21	02/26/18	Not Measured - LNAPL Present				
SB21	05/21/18	Not Measured - LNAPL Present				
SB21	08/27/18	Not Measured - LNAPL Present				
SB21	11/09/18	Not Measured - LNAPL Present				
SB21	02/25/19	Not Measured - LNAPL Present				
SB21	05/20/19	Not Measured - LNAPL Present				
SB21	08/26/19	Not Measured - Insufficient Water				
SB22	02/24/14	Not Measured - Insufficient Water				
SB22	05/19/14	Not Measured - Insufficient Water				
SB22	08/29/14	Not Measured - Insufficient Water				
SB22	11/21/14	Not Measured - Insufficient Water				
SB22	02/13/15	Not Measured - Insufficient Water				
SB22	05/21/15	Not Measured - Insufficient Water				
SB22	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned				
SB22R	02/24/14	12.29	3.073	7.19	83.1	0.20
SB22R	05/19/14	12.83	3.560	7.05	118.9	0.20
SB22R	08/29/14	12.53	2.767	6.99	-70.0	0.12
SB22R	11/21/14	12.48	3.792	7.45	12.6	1.53
SB22R	02/13/15	12.32	3.100	6.95	41.0	0.24
SB22R	05/21/15	12.32	2.598	7.06	-142.2	0.17
SB22R	08/27/15	12.77	3.703	7.83	-101.5	0.27
SB22R	11/24/15	12.31	2.760	9.79	-55.3	0.31

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TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB22R	02/22/16	12.19	1.353	7.09	-167.8	0.22
SB22R	05/23/16	12.64	1.731	7.07	-172.7	0.17
SB22R	08/15/16	12.54	2.838	6.97	-46.5	0.14
SB22R	11/21/16	12.35	1.536	7.04	-46.9	0.18
SB22R	02/16/17	12.40	4.735	7.00	-42.7	0.29
SB22R	05/09/17	17.35	1.430	6.99	-66.8	0.42
SB22R	08/24/17	17.87	1.530	7.38	-159.6	0.01
SB22R	11/20/17	13.28	2.030	6.99	-166.7	0.21
SB22R	02/26/18	12.56	2.280	7.34	-46.3	0.03
SB22R	05/21/18	16.71	1.590	6.94	-156.9	0.12
SB22R	08/27/18	13.57	2.640	7.06	-108.0	0.12
SB22R	11/09/18	12.45	2.055	7.43	11.1	0.74
SB22R	02/25/19	11.19	1.990	7.70	-144.8	0.23
SB22R	05/20/19	11.52	2.400	7.43	-218.5	0.04
SB22R	08/26/19	18.18	1.755	7.94	-68.9	0.79
SB23	03/07/14 ¹	11.26	1.978	7.07	-162.2	4.18
SB23	05/19/14		Not Measured - LNAPL Present			
SB23	08/29/14		Not Measured - LNAPL Present			
SB23	11/21/14		Not Measured - LNAPL Present			
SB23	02/13/15		Not Measured - LNAPL Present			
SB23	05/21/15		Not Measured - LNAPL Present			
SB23	08/27/15		Not Measured - Insufficient Water			
SB23	11/24/15		Not Measured - Insufficient Water			
SB23	02/22/16		Not Measured - Insufficient Water			
SB23	05/23/16		Not Measured - Insufficient Water			
SB23	08/15/16		Not Measured - Insufficient Water			
SB23	11/21/16		Not Measured - Insufficient Water			
SB23	02/16/17		Not Measured - Insufficient Water			
SB23	05/09/17	Not Measured - Removed from Groundwater Monitoring Program				
SB23R	08/24/17		Not Measured - LNAPL Present			
SB23R	11/20/17	13.43	2.22	7.17	-205.8	0.04
SB23R	02/26/18		Not Measured - LNAPL Present			
SB23R	05/21/18		Not Measured - LNAPL Present			
SB23R	08/27/18		Not Measured - LNAPL Present			
SB23R	11/09/18		Not Measured - LNAPL Present			
SB23R	02/25/19		Not Measured - LNAPL Present			
SB23R	05/20/19		Not Measured - LNAPL Present			
SB23R	08/26/19		Not Measured - LNAPL Present			
SB24	02/24/14		Not Measured - Insufficient Water			
SB24	05/19/14		Not Measured - Insufficient Water			
SB24	08/29/14		Not Measured - Insufficient Water			

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB24	11/21/14	Not Measured - Insufficient Water				
SB24	02/13/15	Not Measured - Insufficient Water				
SB24	05/21/15	Not Measured - Insufficient Water				
SB24	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned				
SB24R	02/24/14	12.29	2.768	7.19	129.5	0.37
SB24R	05/19/14	12.75	3.496	6.88	226.0	0.21
SB24R	08/29/14	12.39	3.007	7.49	108.5	0.36
SB24R	11/21/14	12.30	4.164	7.45	152.4	1.49
SB24R	02/13/15	12.24	3.734	7.15	70.8	6.50
SB24R	05/21/15	12.27	2.891	7.13	10.7	0.20
SB24R	08/27/15	12.30	4.031	7.71	12.2	0.10
SB24R	11/24/15	12.22	2.667	8.45	-11.4	0.47
SB24R	02/22/16	12.07	2.758	7.55	59.5	0.34
SB24R	05/23/16	12.56	2.661	7.42	-108.2	0.49
SB24R	08/15/16	12.29	3.303	7.23	110.6	0.18
SB24R	11/21/16	12.20	3.962	7.01	19.6	0.35
SB24R	02/16/17	12.20	4.113	7.12	153.4	0.58
SB24R	05/09/17	Not Measured - Removed From Groundwater Monitoring Program				
SB25	02/24/14	Not Measured - Insufficient Water				
SB25	05/19/14	Not Measured - Insufficient Water				
SB25	08/29/14	Not Measured - Insufficient Water				
SB25	11/21/14	Not Measured - Insufficient Water				
SB25	02/13/15	Not Measured - Insufficient Water				
SB25	05/21/15	Not Measured - Insufficient Water				
SB25	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned				
SB25R	02/24/14	12.16	3.008	7.22	174.2	2.00
SB25R	05/19/14	12.65	3.214	7.11	219.5	0.18
SB25R	08/29/14	12.47	3.054	7.50	135.1	0.04
SB25R	11/21/14	12.38	3.195	7.55	22.9	0.85
SB25R	02/13/15	12.25	3.180	7.12	44.6	1.00
SB25R	05/21/15	12.41	2.960	7.09	38.8	0.14
SB25R	08/27/15	12.62	3.412	7.82	-52.2	0.10
SB25R	11/24/15	12.35	3.095	6.73	0.3	0.62
SB25R	02/22/16	12.12	0.317	7.22	-80.6	0.35
SB25R	05/23/16	12.53	2.652	7.18	-115.4	0.30
SB25R	08/15/16	12.60	0.585	7.55	-20.7	0.30
SB25R	11/21/16	12.31	1.002	7.56	-46.5	0.33
SB25R	02/16/17	12.30	0.816	7.65	-110.6	0.11
SB25R	05/09/17	16.01	1.200	7.19	-13.1	0.39
SB25R	08/24/17	14.31	1.240	8.08	-113.6	0.06
SB25R	11/20/17	12.94	1.840	7.24	-18.7	0.61

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TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB25R	02/26/18	11.18	2.290	7.51	18.6	0.50
SB25R	05/21/18	16.77	1.770	7.51	-55.0	0.30
SB25R	08/27/18	13.75	1.250	7.20	-75.3	0.77
SB25R	11/09/18	12.47	2.116	7.59	11.6	0.85
SB25R	02/25/19	11.25	1.780	7.62	-54.2	0.23
SB25R	05/20/19	11.90	3.090	7.45	-23.3	0.04
SB25R	08/26/19	15.60	1.414	7.99	-35.9	0.25
SB26	02/24/14	12.80	2.212	7.60	171.0	0.56
SB26	05/19/14	12.89	1.999	7.75	216.9	0.62
SB26	08/29/14	12.51	2.026	7.85	96.0	0.10
SB26	11/21/14	12.20	2.260	7.99	86.4	1.81
SB26	02/13/15	12.23	1.836	7.59	140.6	0.77
SB26	05/21/15	12.39	1.753	7.35	20.5	0.30
SB26	08/27/15	12.43	1.833	7.74	65.3	0.15
SB26	11/24/15	12.20	1.025	9.87	-63.2	0.34
SB26	02/22/16	12.13	0.663	7.96	-69.5	0.23
SB26	05/23/16	12.64	0.637	7.62	-149.1	0.22
SB26	08/15/16	12.41	1.075	7.33	166.0	0.18
SB26	11/21/16	12.13	1.523	7.65	4.0	0.35
SB26	02/16/17	12.30	1.836	6.67	156.2	0.71
SB26	05/09/17	Not Measured - Removed From Groundwater Monitoring Program				
SB27	02/24/14	Not Measured - Insufficient Water				
SB27	05/19/14	Not Measured - Insufficient Water				
SB27	08/29/14	Not Measured - Insufficient Water				
SB27	11/21/14	Not Measured - Insufficient Water				
SB27	02/13/15	Not Measured - Insufficient Water				
SB27	05/21/15	Not Measured - Insufficient Water				
SB27	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned				
SB27R	02/24/14	11.95	3.014	7.35	152.0	4.99
SB27R	05/19/14	12.68	3.275	7.08	245.3	0.22
SB27R	08/29/14	12.41	3.053	7.59	103.5	0.06
SB27R	11/21/14	12.31	3.329	7.54	199.7	1.84
SB27R	02/13/15	12.26	3.157	7.25	25.6	0.44
SB27R	05/21/15	12.34	2.955	7.08	59.3	0.33
SB27R	08/27/15	12.45	3.411	7.58	9.8	0.39
SB27R	11/24/15	12.31	2.981	6.89	47.2	2.00
SB27R	02/22/16	12.17	3.030	7.38	17.3	0.22
SB27R	05/23/16	12.57	2.913	7.33	-76.6	1.65
SB27R	08/15/16	12.56	2.931	7.22	17.2	0.42
SB27R	11/21/16	12.30	3.021	7.19	-2.5	0.35
SB27R	02/16/17	12.30	3.449	7.12	36.8	0.45

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB27R	05/09/17	15.65	2.620	6.81	104.7	1.61
SB27R	08/24/17	17.43	2.670	7.92	174.2	0.32
SB27R	11/20/17	13.25	2.950	7.29	62.7	1.41
SB27R	02/26/18	11.44	3.290	7.31	31.5	0.08
SB27R	05/21/18	16.21	2.940	7.32	66.7	0.42
SB27R	08/27/18	14.07	3.500	6.82	-1.2	0.12
SB27R	11/09/18	12.37	2.191	7.50	44.5	1.62
SB27R	02/25/19	11.95	3.040	7.97	38.1	1.15
SB27R	05/20/19	11.50	3.340	7.40	13.3	0.02
SB27R	08/26/19	15.98	2.989	7.84	137.3	0.49
SB28	02/24/14	Not Measured - Insufficient Water				
SB28	05/19/14	Not Measured - Insufficient Water				
SB28	08/29/14	Not Measured - Insufficient Water				
SB28	11/21/14	Not Measured - Insufficient Water				
SB28	02/13/15	Not Measured - Insufficient Water				
SB28	05/21/15	Not Measured - Insufficient Water				
SB28	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned				
SB28R	02/24/14	12.41	2.326	7.25	135.9	0.47
SB28R	05/19/14	12.49	3.130	7.50	254.3	0.83
SB28R	08/29/14	12.47	2.725	7.49	74.8	0.16
SB28R	11/21/14	12.35	3.429	7.60	153.4	2.06
SB28R	02/13/15	12.30	2.971	7.25	73.9	0.67
SB28R	05/21/15	12.32	2.204	7.22	23.5	0.17
SB28R	08/27/15	12.85	1.927	7.74	6.1	1.16
SB28R	11/24/15	12.25	2.276	8.32	-3.2	0.54
SB28R	02/22/16	12.17	2.809	7.43	44.3	0.36
SB28R	05/23/16	12.45	2.618	7.35	-99.8	0.32
SB28R	08/15/16	12.59	1.937	7.38	38.7	1.20
SB28R	11/21/16	Not Measured - Insufficient Water				
SB28R	02/16/17	Not Measured - Well Obstructed ⁴				
SB28R	05/09/17	Not Measured - Well Obstructed ⁴				
SB28R	08/24/17	Not Measured - Well Obstructed ⁴				
SB28R	11/20/17	Not Measured - Well Obstructed ⁴				
SB28R	02/26/18	Not Measured - Well Obstructed ⁴				
SB28R	05/21/18	Not Measured - Well Obstructed ⁴				
SB28R	08/27/18	Not Measured - Well Obstructed ⁴				
SB28R	11/09/18	Not Measured - Well Obstructed ⁴				
SB28R	02/25/19	Not Measured - Well Obstructed ⁴				
SB28R	05/20/19	Not Measured - Well Obstructed ⁴				
SB28R	08/26/19	Not Measured - Well Obstructed ⁴				
SB29	02/24/14	12.59	2.630	7.22	75.8	0.56

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB29	05/19/14	12.73	3.306	7.32	526.9	0.46
SB29	08/29/14	12.69	2.328	7.61	90.9	0.31
SB29	11/21/14	12.41	3.778	7.70	118.9	0.86
SB29	02/13/15	12.37	3.586	7.38	143.2	0.50
SB29	05/21/15	12.41	2.242	7.24	-28.0	0.20
SB29	08/27/15	12.50	3.900	7.67	-11.7	0.06
SB29	11/24/15	12.21	2.435	9.68	-50.3	0.69
SB29	02/22/16	12.21	1.198	7.57	24.5	0.16
SB29	05/23/16	12.58	1.616	7.44	-147.6	0.50
SB29	08/15/16	12.50	1.626	7.54	-19.8	0.21
SB29	11/21/16	12.26	1.995	7.76	5.0	0.34
SB29	02/16/17	12.40	3.075	7.48	191.5	0.59
SB29	05/09/17	Not Measured - Removed From Groundwater Monitoring Program				
SB30	03/07/14 ¹	9.64	3.415	6.83	-57.1	15.51
SB30	05/19/14	Not Measured - LNAPL Present				
SB30	08/29/14	Not Measured - LNAPL Present				
SB30	11/21/14	Not Measured - LNAPL Present				
SB30	02/13/15	Not Measured - LNAPL Present				
SB30	05/21/15	Not Measured - LNAPL Present				
SB30	08/27/15	Not Measured - LNAPL Present				
SB30	11/24/15	Not Measured - LNAPL Present				
SB30	02/22/16	Not Measured - LNAPL Present				
SB30	05/23/16	Not Measured - LNAPL Present				
SB30	08/15/16	Not Measured - LNAPL Present				
SB30	11/21/16	Not Measured - LNAPL Present				
SB30	02/16/17	Not Measured - LNAPL Present				
SB30	05/09/17	Not Measured -Spill Buster Present				
SB30	08/24/17	Not Measured - LNAPL Present				
SB30	11/20/17	Not Measured - LNAPL Present				
SB30	02/26/18	Not Measured - LNAPL Present				
SB30	05/21/18	Not Measured - LNAPL Present				
SB30	08/27/18	Not Measured - LNAPL Present				
SB30	11/09/18	Not Measured - LNAPL Present				
SB30	02/25/19	Not Measured - LNAPL Present				
SB30	05/20/19	Not Measured - LNAPL Present				
SB30	08/26/19	Not Measured - LNAPL Present				
SB31	03/07/14 ¹	9.15	3.096	6.85	-47.2	14.40
SB31	05/19/14	Not Measured - LNAPL Present				
SB31	08/29/14	Not Measured - LNAPL Present				
SB31	11/21/14	Not Measured - LNAPL Present				

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB31	02/13/15					
SB31	05/21/15					
SB31	08/27/15					
SB31	11/24/15					
SB31	02/22/16					
SB31	05/23/16					
SB31	08/15/16					
SB31	11/21/16					
SB31	02/16/17					
SB31	05/09/17					
SB31	08/24/17					
SB31	11/20/17					
SB31	02/26/18					
SB31	05/21/18					
SB31	08/27/18					
SB31	11/09/18					
SB31	02/25/19					
SB31	05/20/19					
SB31	08/26/19					
SB32	02/24/14	12.42	2.781	7.15	107.8	0.36
SB32	03/31/14	12.54	2.934	6.82	109.5	0.25
SB32	05/19/14	12.89	3.511	7.39	174.1	0.40
SB32	08/29/14	12.66	2.750	6.99	35.0	0.45
SB32	11/21/14	12.61	4.066	7.18	-145.9	1.22
SB32	02/13/15	12.47	3.926	6.92	-53.3	0.28
SB32	05/21/15	12.51	2.637	6.99	-82.0	0.11
SB32	08/27/15					
SB32	11/24/15					
SB32	02/22/16					
SB32	05/23/16					
SB32	08/15/16					
SB32	11/21/16					
SB32	02/16/17					
SB32	05/09/17					
SB32	08/24/17					
SB32	11/20/17					
SB32	02/26/18					
SB32	05/21/18					
SB32	08/27/18					
SB32	11/09/18					
SB32	02/25/19					

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TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB32	05/20/19	Not Measured - Insufficient Water				
SB32	08/26/19	Not Measured - Insufficient Water				
SB33	02/24/14	Not Measured - Insufficient Water				
SB33	05/19/14	Not Measured - Insufficient Water				
SB33	08/29/14	12.37	6.177	7.08	131.8	0.11
SB33	11/21/14	12.28	6.165	7.18	-11.5	1.73
SB33	02/13/15	12.16	6.050	7.02	54.9	0.35
SB33	05/21/15	12.30	5.910	6.75	79.0	0.27
SB33	08/27/15	12.40	6.035	7.78	-98.4	0.12
SB33	11/24/15	12.22	5.976	6.65	-23.4	0.32
SB33	02/22/16	12.18	6.032	7.06	-42.7	0.20
SB33	05/23/16	12.48	5.933	6.92	-52.9	0.15
SB33	08/15/16	12.29	5.925	6.85	170.8	1.50
SB33	11/21/16	12.10	5.913	6.95	-3.9	0.12
SB33	02/16/17	12.10	5.920	7.07	32.3	0.65
SB33	05/09/17	Not Measured - Removed From Groundwater Monitoring Program				
SB34	02/24/14	12.36	2.316	7.14	188.9	0.72
SB34	05/19/14	12.99	2.366	7.31	245.1	0.34
SB34	08/29/14	12.61	2.328	7.20	127.4	0.30
SB34	11/21/14	12.32	2.393	7.72	176.6	1.77
SB34	02/13/15	12.17	2.308	7.10	64.4	4.30
SB34	05/21/15	12.49	2.247	7.07	33.6	0.15
SB34	08/27/15	12.57	2.298	7.60	18.9	0.23
SB34	11/24/15	12.30	2.303	8.13	26.5	1.08
SB34	02/22/16	12.21	2.292	7.34	37.7	0.20
SB34	05/23/16	12.63	2.283	7.20	-91.0	0.33
SB34	08/15/16	12.43	2.310	7.08	128.6	0.11
SB34	11/21/16	12.29	2.308	7.19	2.2	1.94
SB34	02/16/17	12.30	2.466	7.25	-59.8	0.51
SB34	05/09/17	Not Measured - Removed From Groundwater Monitoring Program				
SB35	03/31/14	12.42	2.861	6.69	118.3	0.39
SB35	05/19/14	12.56	2.905	4.38	184.8	0.30
SB35	08/29/14	12.46	2.887	7.55	107.5	0.11
SB35	11/21/14	12.44	3.078	7.69	89.1	1.40
SB35	02/13/15	12.29	2.897	7.26	31.9	0.72
SB35	05/21/15	12.38	2.787	7.06	46.1	0.14
SB35	08/27/15	12.54	3.036	7.75	-15.3	8.30
SB35	11/24/15	12.31	1.763	6.99	-16.9	0.41
SB35	02/22/16	12.18	1.881	7.40	-95.9	0.18
SB35	05/23/16	12.47	2.132	7.27	-103.7	0.20
SB35	08/15/16	12.44	2.261	7.17	-40.9	0.22

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB35	11/21/16	12.30	2.610	7.26	-16.0	0.46
SB35	02/16/17	12.30	2.990	7.30	19.0	0.35
SB35	05/09/17	16.19	2.410	7.03	89.7	0.49
SB35	08/24/17	Not Measured - Removed From Groundwater Monitoring Program				
SB36	03/31/14	12.56	3.638	6.95	86.3	0.19
SB36	05/19/14	12.42	4.010	7.39	250.8	0.32
SB36	08/29/14	12.37	3.134	7.13	26.0	0.17
SB36	11/21/14	12.32	3.121	7.68	145.8	1.63
SB36	02/13/15	12.01	3.096	6.84	156.7	0.75
SB36	05/21/15	12.17	2.926	7.06	77.2	0.30
SB36	08/27/15	12.13	5.125	7.27	79.2	0.18
SB36	11/24/15	11.96	4.449	6.31	90.8	0.40
SB36	02/22/16	12.15	4.534	6.97	-14.8	0.32
SB36	05/23/16	12.33	3.978	6.58	-59.2	0.45
SB36	08/15/16	12.48	3.383	6.94	168.0	0.23
SB36	11/21/16	12.08	3.701	6.93	-78.8	0.13
SB36	02/16/17	12.20	4.224	6.89	-83.2	0.64
SB36	05/09/17	14.42	2.809	7.03	-112.7	0.16
SB36	08/24/17	13.14	3.640	7.45	-125.2	0.07
SB36	11/20/17	13.49	3.610	6.73	-207.0	0.16
SB36	02/26/18	12.52	3.700	7.18	-24.0	0.11
SB36	05/21/18	14.62	3.615	7.15	-197.9	0.06
SB36	08/27/18	13.67	3.400	6.90	-159.2	0.15
SB36	11/09/18	12.53	2.493	7.52	-92.0	1.37
SB36	02/25/19	12.00	3.370	7.90	27.3	0.19
SB36	05/20/19	8.33	3.710	7.41	53.0	3.88
SB36	08/26/19	13.58	3.382	7.55	232.0	4.49
SB37	03/31/14	Not Measured - Insufficient Water				
SB37	05/19/14	12.92	3.378	6.97	245.5	0.22
SB37	08/29/14	12.69	2.263	7.09	-48.9	0.09
SB37	11/21/14	12.51	3.562	7.22	-30.0	1.57
SB37	02/13/15	12.54	3.581	6.88	47.3	0.24
SB37	05/21/15	12.53	2.066	7.18	-166.9	0.04
SB37	08/27/15	12.71	1.964	8.26	-203.4	0.29
SB37	11/24/15	12.48	1.874	8.70	-40.6	0.28
SB37	02/22/16	12.40	2.040	7.39	-205.9	0.04
SB37	05/23/16	Not Measured - LNAPL Present				
SB37	08/15/16	Not Measured - LNAPL Present				
SB37	11/21/16	Not Measured - LNAPL Present				
SB37	02/16/17	Not Measured - LNAPL Present				
SB37	05/09/17	Not Measured - LNAPL Present				

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB37	08/24/17					Not Measured - LNAPL Present
SB37	11/20/17					Not Measured - LNAPL Present
SB37	02/26/18					Not Measured - LNAPL Present
SB37	05/21/18					Not Measured - LNAPL Present
SB37	08/27/18					Not Measured - LNAPL Present
SB37	11/09/18					Not Measured - LNAPL Present
SB37	02/25/19					Not Measured - LNAPL Present
SB37	05/20/19					Not Measured - LNAPL Present
SB37	08/26/19					Not Measured - LNAPL Present
SB38	03/31/14	12.49	2.701	7.03	77.0	2.09
SB38	05/19/14	12.60	2.728	7.45	250.8	0.22
SB38	08/29/14	12.33	2.378	7.47	27.3	0.19
SB38	11/21/14	12.32	2.658	7.69	151.3	0.41
SB38	02/13/15	12.22	2.640	7.37	167.3	2.17
SB38	05/21/15	12.21	2.286	6.98	215.5	0.36
SB38	08/27/15	12.69	2.596	7.55	90.0	0.90
SB38	11/24/15	12.04	2.417	6.66	88.6	0.83
SB38	02/22/16	12.14	2.550	7.58	23.1	0.40
SB38	05/23/16	12.35	2.017	6.89	128.6	0.33
SB38	08/15/16	12.45	2.230	7.18	241.9	0.25
SB38	11/21/16	12.09	2.491	7.17	-18.8	0.16
SB38	02/16/17	12.30	2.648	7.20	2.6	0.49
SB38	05/09/17	15.84	2.028	6.86	54.0	0.44
SB38	08/24/17	14.08	2.080	7.62	125.4	0.60
SB38	11/20/17	14.19	2.320	6.80	99.3	0.54
SB38	02/26/18	12.51	2.760	7.27	48.3	0.16
SB38	05/21/18	13.85	2.840	7.24	72.5	0.03
SB38	08/27/18	14.20	2.580	7.03	58.6	0.44
SB38	11/09/18	53.18	1.758	7.40	34.5	1.94
SB38	02/25/19	11.73	2.220	7.98	72.8	0.85
SB38	05/20/19	11.08	2.710	7.32	81.2	0.07
SB38	08/26/19	13.37	2.480	7.77	147.5	0.67
SB39	04/18/14	13.52	6.588	6.98	160.8	2.90
SB39	05/19/14	12.51	6.540	7.19	258.0	0.35
SB39	08/29/14	12.30	6.203	7.51	126.6	0.07
SB39	11/21/14	12.22	6.402	7.53	216.0	2.12
SB39	02/13/15	12.15	6.336	7.00	65.1	0.61
SB39	05/21/15	12.10	5.814	6.77	226.3	0.23
SB39	08/27/15	12.41	4.085	7.23	94.9	0.59
SB39	11/24/15	11.72	4.033	6.27	91.6	1.32
SB39	02/22/16	11.90	3.954	7.08	23.2	0.31

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB39	05/23/16	Not Measured - Probe Malfunction				
SB39	08/15/16	12.36	3.704	7.05	280.1	3.48
SB39	11/21/16	11.86	3.846	6.97	111.5	2.52
SB39	02/16/17	12.00	3.862	6.93	411.2	1.79
SB39	05/09/17	16.37	2.920	6.75	94.83	1.36
SB39	08/24/17	14.40	2.980	7.52	220.2	7.70
SB39	11/20/17	13.21	3.740	6.93	28.4	0.71
SB39	02/26/18	11.93	4.380	7.10	40.5	1.94
SB39	05/21/18	16.68	4.167	7.06	50.6	1.20
SB39	08/27/18	15.67	4.020	6.77	47.2	2.99
SB39	11/09/18	12.24	2.739	7.42	-55	2.13
SB39	02/25/19	11.29	3.810	7.75	70.2	2.31
SB39	05/20/19	11.21	4.290	7.23	91.4	1.46
SB39	08/26/19	15.15	3.752	7.39	211.6	0.94
SB40	04/18/14	12.58	3.878	7.22	140.1	1.17
SB40	05/19/14	12.36	3.888	7.54	232.0	0.58
SB40	08/29/14	12.14	3.561	7.61	88.0	3.20
SB40	11/21/14	11.49	3.553	7.60	88.4	2.20
SB40	02/13/15	12.11	3.559	7.13	76.0	2.01
SB40	05/21/15	12.12	3.485	6.50	250.1	0.90
SB40	08/27/15	12.22	3.721	7.34	116.2	0.12
SB40	11/24/15	11.91	2.703	6.65	108.7	4.74
SB40	02/22/16	12.03	2.260	7.24	192.0	0.41
SB40	05/23/16	12.03	2.281	6.64	108.8	5.43
SB40	08/15/16	12.43	2.111	7.50	263.8	7.10
SB40	11/21/16	11.96	2.012	7.28	142.4	1.89
SB40	02/16/17	12.20	2.363	7.27	414.0	0.71
SB40	05/09/17	Not Measured - Removed From Groundwater Monitoring Program				
SB41	04/18/14	12.92	2.001	7.54	115.8	3.36
SB41	05/19/14	12.51	2.419	7.39	208.1	0.25
SB41	08/29/14	12.30	2.012	7.76	43.3	0.22
SB41	11/21/14	11.97	1.980	8.10	122.2	2.05
SB41	02/13/15	12.14	2.094	7.47	109.0	0.45
SB41	05/21/15	12.19	1.910	7.09	217.0	0.34
SB41	08/27/15	12.53	1.945	7.49	118.3	0.10
SB41	11/24/15	11.97	1.932	6.70	97.8	1.95
SB41	02/22/16	12.05	0.868	7.63	-68.5	0.38
SB41	05/23/16	12.28	1.846	6.97	105.0	0.53
SB41	08/15/16	12.48	2.570	7.38	250.9	0.22
SB41	11/21/16	12.04	2.546	7.17	240.9	1.39
SB41	02/16/17	12.20	2.379	7.43	421.4	0.54

TABLE 2
GROUNDWATER GEOCHEMICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Temp (°C)	EC (mS/cm)	pH	ORP (mV)	DO (mg/L)
SB41	05/09/17	Not Measured - Removed From Groundwater Monitoring Program				
SB42	04/18/14	12.61	2.645	7.37	205.9	6.44
SB42	05/19/14	12.66	3.096	7.23	250.0	0.44
SB42	08/29/14	12.54	2.304	7.64	143.0	0.54
SB42	11/21/14	12.42	2.259	7.84	58.6	0.84
SB42	02/13/15	12.44	3.195	7.22	37.3	0.69
SB42	05/21/15	12.29	2.030	7.21	128.8	0.25
SB42	08/27/15	12.56	2.059	7.56	84.0	0.08
SB42	11/24/15	12.20	2.034	6.75	8.5	0.25
SB42	02/22/16	12.17	1.923	7.65	-59.8	0.28
SB42	05/23/16	12.56	1.888	7.52	-145.9	0.42
SB42	08/15/16	12.65	1.884	7.47	48.5	0.43
SB42	11/21/16	12.15	1.941	7.42	-15.5	1.65
SB42	02/16/17	12.30	2.520	7.58	117.9	0.31
SB42	05/09/17	Not Measured - Removed From Groundwater Monitoring Program				

NOTES:

Temp (°C) = Temperature in degrees Celsius (°C)

EC (mS/cm) = Electrical conductivity in millisiemens per centimeter (mS/cm)

pH = Acidity or alkalinity in standard units

ORP (mV) = Oxidation reduction potential in millivolts (mV)

DO (mg/L) = Dissolved oxygen concentration in milligrams per liter (mg/L)

LNAPL = Light non-aqueous phase liquid

¹ Measured ex-situ due to the presence of LNAPL

² pH values appear anomalous for wells SB07, SB10, SB14, SB15, SB20 measured on 11/24/15, and for well SB11 on 5/23/16.

³ DO values appear anomalous for wells SB07, SB08, SB10 measured on 02/22/16, and for well SB07 measured on 5/23/16.

⁴ Obstruction in well large enough to block meter sensor, but did not block hydrasleeve deployment.

This table presents data collected by Tasman Geosciences. Historical data is presented in Attachment A of the Form 27 Site Assessment Report (COGCC Document #2148980)

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB01	02/24/14	1.5	13.5	1.2	33.8
SB01	05/19/14	Removed From Groundwater Monitoring Program - Submerged Well Screen			
SB01	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned			
SB02	02/24/14	25.1	<4.0	<4.0	<4.0
SB02	05/19/14	Removed From Groundwater Monitoring Program - Submerged Well Screen			
SB02	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned			
SB03	02/24/14	<1.0	<1.0	<1.0	<1.0
SB03	05/19/14	<1.0	<5.0	<1.0	<3.0
SB03	08/29/14	<1.0	<5.0	<1.0	<3.0
SB03	11/21/14	<1.0	<5.0	<1.0	<3.0
SB03	02/13/15	<1.0	<5.0	<1.0	<3.0
SB03	05/21/15	<1.0	<5.0	<1.0	<3.0
SB03	08/27/15	<1.0	<5.0	<1.0	<3.0
SB03	11/24/15	1.45	<5.0	1.33	<3.0
SB03	02/22/16	2.57	<5.0	5.53	<3.0
SB03	05/23/16	3.2	<1.0	6.2	2.5
SB03	08/15/16	<1.0	<1.0	<1.0	<1.0
SB03	11/21/16	<1.0	<1.0	<1.0	<1.0
SB03	02/16/17	<1.0	<1.0	<1.0	<1.0
SB03	05/12/17	<1.0	<1.0	<1.0	<2.0
SB03	08/24/17	<1.0	<1.0	<1.0	<2.0
SB03	11/20/17	<1.0	<1.0	<1.0	<2.0
SB03	02/26/18	<1.0	<1.0	<1.0	<2.0
SB03	05/21/18	<1.0	<1.0	<1.0	<2.0
SB03	08/27/18	<1.0	<1.0	<1.0	<2.0
SB03	11/09/18	<1.0	<1.0	<1.0	<2.0
SB03	02/25/19	<1.0	<1.0	<1.0	<2.0
SB03	05/20/19	<1.0	<1.0	<1.0	<2.0
SB03	08/26/19	<1.0	<1.0	<1.0	<2.0
SB04	02/24/14	72.3	<1.0	<1.0	<1.0
SB04	05/19/14	6.4	<5.0	<1.0	<3.0
SB04	08/29/14	42	<5.0	<1.0	<3.0
SB04	11/21/14	7.9	<5.0	<1.0	<3.0
SB04	02/13/15	8.8	<5.0	<1.0	<3.0
SB04	05/21/15	100	<5.0	6.1	4.8
SB04	08/27/15	174	<5.0	3.26	3.28
SB04	11/24/15	1,760	<125	543	371
SB04	02/22/16	1,010	<5.0	223	366
SB04	05/23/16	490	<1.0	300	150

Table 3-1

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB04	08/15/16	910	<1.0	640	150
SB04	11/21/16	970	1.4	1,100	<1.0
SB04	02/16/17	770	1.3	1,100	22
SB04	05/12/17	620	1.5	930	64
SB04	08/24/17	36	1.9	150	31
SB04 ³	11/20/17	53	<1.0	110	<2.0
SB04	02/26/18	280	13	560	23
SB04	05/21/18	<1.0	<1.0	<1.0	<2.0
SB04	08/27/18	21	<1.0	2.7	2.5
SB04	11/09/18	180	<1.0	<1.0	<2.0
SB04	02/25/19	110	<1.0	<1.0	<2.0
SB04	05/20/19	<1.0	<1.0	<1.0	<2.0
SB04	08/26/19	1.8	<1.0	<1.0	<2.0
SB05	02/24/14	Not Sampled - LNAPL Present			
SB05	05/19/14	Not Sampled - LNAPL Present			
SB05	08/29/14	Not Sampled - LNAPL Present			
SB05	11/21/14	Not Sampled - LNAPL Present			
SB05	02/13/15	Not Sampled - LNAPL Present			
SB05	05/21/15	Not Sampled - LNAPL Present			
SB05	08/27/15	Not Sampled - LNAPL Present			
SB05	11/24/15	Not Sampled - LNAPL Present			
SB05	02/22/16	Not Sampled - LNAPL Present			
SB05	05/23/16	Not Sampled - LNAPL Present			
SB05	08/15/16	Not Sampled - LNAPL Present			
SB05	11/21/16	Not Sampled - LNAPL Present			
SB05	02/16/17	Not Sampled - LNAPL Present			
SB05	05/12/17	Not Sampled - LNAPL Present			
SB05	08/24/17	Not Sampled - LNAPL Present			
SB05	11/20/17	Not Sampled - LNAPL Present			
SB05	02/26/18	Not Sampled - LNAPL Present			
SB05	05/18/18	Not Sampled - LNAPL Present			
SB05	08/27/18	Not Sampled - LNAPL Present			
SB05	11/06/18	Not Sampled - LNAPL Present			
SB05	02/25/19	Not Sampled - LNAPL Present			
SB05	05/20/19	Not Sampled - LNAPL Present			
SB05	08/26/19	Not Sampled - LNAPL Present			
SB06	02/24/14	<1.0	<1.0	<1.0	<1.0
SB06	05/19/14	<1.0	<5.0	<1.0	<3.0
SB06	08/29/14	<1.0	<5.0	<1.0	<3.0

Table 3-2

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB06	11/21/14	<1.0	<5.0	<1.0	<3.0
SB06	02/13/15	<1.0	<5.0	<1.0	<3.0
SB06	05/21/15	<1.0	<5.0	<1.0	<3.0
SB06	08/27/15	23.2	<5.0	<1.0	4.97
SB06	11/24/15	2.39	<5.0	<1.0	<3.0
SB06	02/22/16	2.48	<5.0	<1.0	<3.0
SB06	05/23/16	2.6	<1.0	<1.0	2.7
SB06	08/15/16	<1.0	<1.0	<1.0	<1.0
SB06	11/21/16	<1.0	<1.0	<1.0	<1.0
SB06	02/16/17	2.0	<1.0	2.1	<1.0
SB06	05/12/17	<1.0	<1.0	<1.0	<2.0
SB06	08/24/17	<1.0	<1.0	<1.0	2.3
SB06	11/20/17	<1.0	<1.0	<1.0	<2.0
SB06	02/26/18	<1.0	<1.0	<1.0	<2.0
SB06	05/21/18	<1.0	<1.0	<1.0	<2.0
SB06	08/27/18	<1.0	<1.0	<1.0	<2.0
SB06	11/09/18	<1.0	<1.0	<1.0	<2.0
SB06	02/25/19	<1.0	<1.0	<1.0	<2.0
SB06	05/20/19	<1.0	<1.0	<1.0	<2.0
SB06	09/03/19	<1.0	<1.0	<1.0	<2.0
SB07	02/24/14	8,600	9,910	54.0	1,800
SB07	05/19/14	7,800	9,900	88	3,200
SB07	08/29/14	5,900	<2,500	<500	<1,500
SB07	11/21/14	8,600	6,000	<500	3,600
SB07	02/13/15	2,200	<250	<50	310
SB07	05/21/15	4,400	720	<50	430
SB07	08/27/15	642	784	<50	336
SB07	11/24/15	9,560	27,000	445	8,730
SB07	02/22/16	7,860	10,400	304	6,720
SB07	05/23/16	9,900	2,000	500	6,200
SB07	08/15/16	4,200	350	220	2,100
SB07	11/21/16	1,100	110	60	560
SB07	02/16/17	3,500	230	270	5,800
SB07	05/12/17	2,700	66	200	5,400
SB07	08/24/17	2,300	300	160	3,700
SB07	11/20/17	1,800	160	170	2,700
SB07	02/26/18	1,900	140	250	1,600
SB07	05/21/18	700	19	82	980
SB07	08/27/18	450	<1.0	110	590

Table 3-3

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB07	11/09/18	1,200	2.0	150	750
SB07	02/25/19	<1.0	<1.0	1.4	470
SB07	05/20/19	1,100	<1.0	150	610
SB07	08/26/19	1,300	<1.0	190	810
SB08	02/24/14	Not Sampled - LNAPL Present			
SB08	05/19/14	5,500	12,000	480	10,000
SB08	08/29/14	5,000	4,100	600	12,000
SB08	11/21/14	Not Sampled - LNAPL Present			
SB08	02/13/15	Not Sampled - LNAPL Present			
SB08	05/21/15	Not Sampled - LNAPL Present			
SB08	08/27/15	4,710	7,120	252	8,720
SB08	11/24/15	Not Sampled - LNAPL Present			
SB08	02/22/16	3,600	5,950	459	10,100
SB08	05/23/16	5,200	5,000	920	16,000
SB08	08/15/16	6,400	5,300	780	17,000
SB08	11/21/16	6,500	6,100	840	13,000
SB08	02/16/17	4,600	5,000	750	13,000
SB08	05/12/17	5,400	4,800	530	12,000
SB08	08/24/17	4,800	3,000	770	12,000
SB08	11/20/17	6,200	750	440	10,000
SB08	02/26/18	6,100	630	540	9,100
SB08	05/21/18	5,100	500	220	9,700
SB08	08/27/18	4,400	1,200	520	8,500
SB08	11/09/18	3,900	190	320	5,800
SB08	02/25/19	1,300	130	160	2,400
SB08	05/20/19	1,400	91	540	5,900
SB08	08/26/19	1,900	300	410	7,200
SB09	02/24/14	Not Sampled - LNAPL Present			
SB09	05/19/14	Not Sampled - LNAPL Present			
SB09	08/29/14	Not Sampled - LNAPL Present			
SB09	11/21/14	Not Sampled - LNAPL Present			
SB09	02/13/15	Not Sampled - LNAPL Present			
SB09	05/21/15	Not Sampled - LNAPL Present			
SB09	08/27/15	Not Sampled - LNAPL Present			
SB09	11/24/15	Not Sampled - LNAPL Present			
SB09	02/22/16	Not Sampled - LNAPL Present			
SB09	05/23/16	Not Sampled - LNAPL Present			
SB09	08/15/16	Not Sampled - LNAPL Present			
SB09	11/21/16	Not Sampled - LNAPL Present			

Table 3-4

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB09	02/16/17	Not Sampled - LNAPL Present			
SB09	05/12/17	Not Sampled - LNAPL Present			
SB09	08/24/17	Not Sampled - LNAPL Present			
SB09	11/20/17	Not Sampled - LNAPL Present			
SB09	02/26/18	Not Sampled - LNAPL Present			
SB09	05/18/18	Not Sampled - LNAPL Present			
SB09	08/27/18	Not Sampled - LNAPL Present			
SB09	11/06/18	Not Sampled - LNAPL Present			
SB09	02/25/19	6,600	15,000	460	7,700
SB09	05/20/19	Not Sampled - LNAPL Present			
SB09	08/26/19	Not Sampled - LNAPL Present			
SB10	02/24/14	Not Sampled - LNAPL Present			
SB10	05/19/14	14,000	18,000	640	12,000
SB10	08/29/14	Not Sampled - LNAPL Present			
SB10	11/21/14	15,000	24,000	1,100	21,000
SB10	02/13/15	15,000	33,000	620	13,000
SB10	05/21/15	Not Sampled - LNAPL Present			
SB10	08/27/15	14,900	32,900	713	11,300
SB10	11/24/15	9,920	20,700	<1,000	9,280
SB10	02/22/16	3,520	6,670	458	9,620
SB10	05/23/16	7,200	16,000	1,200	18,000
SB10	08/15/16	6,700	14,000	710	18,000
SB10	11/21/16	6,900	5,600	1,000	13,000
SB10	02/16/17	4,800	2,600	790	10,000
SB10	05/12/17	5,700	2,700	590	10,000
SB10	08/24/17	4,900	1,300	880	8,900
SB10	11/20/17	3,500	140	450	6,400
SB10	02/26/18	1,800	16	380	3,200
SB10	05/21/18	560	2	30	850
SB10	08/27/18	370	3.2	75	380
SB10	11/09/18	410	<1.0	150	230
SB10	02/25/19	680	370	160	740
SB10	05/20/19	470	<1.0	190	110
SB10	08/26/19	230	<1.0	36	37
SB11	02/24/14	1,550	<1.0	127	<1.0
SB11	05/19/14	49	<5.0	<1.0	<3.0
SB11	08/29/14	170	<5.0	20	<3.0
SB11	11/21/14	250	<5.0	22	<3.0
SB11	02/13/15	94	<5.0	28	<3.0

Table 3-5

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB11	05/21/15	120	<5.0	16	<3.0
SB11	08/27/15	48.2	<5.0	<1.0	3.61
SB11	11/24/15	50.6	<5.0	111	<3.0
SB11	02/22/16	11.5	<5.0	59.4	<3.0
SB11	05/23/16	64	<1.0	38	<1.0
SB11	08/15/16	<1.0	<1.0	<1.0	<1.0
SB11	11/21/16	2.1	<1.0	14	<1.0
SB11	02/16/17	<1.0	<1.0	<1.0	<1.0
SB11	05/12/17	<1.0	<1.0	<1.0	<2.0
SB11	08/24/17	<1.0	<1.0	<1.0	<2.0
SB11	11/20/17	<1.0	<1.0	<1.0	<2.0
SB11	02/26/18	1.6	<1.0	1.1	7.4
SB11	05/21/18	<1.0	<1.0	<1.0	<2.0
SB11	08/27/18	<1.0	<1.0	<1.0	<2.0
SB11	11/09/18	<1.0	<1.0	<1.0	<2.0
SB11	02/25/19	<1.0	<1.0	<1.0	<2.0
SB11	05/20/19	<1.0	<1.0	<1.0	<2.0
SB11	08/26/19	<1.0	<1.0	<1.0	<2.0
SB12	02/24/14	<1.0	<1.0	<1.0	<1.0
SB12	05/19/14	<1.0	<5.0	<1.0	<3.0
SB12	08/29/14	<1.0	<5.0	<1.0	<3.0
SB12	11/21/14	<1.0	<5.0	<1.0	<3.0
SB12	02/13/15	<1.0	<5.0	<1.0	<3.0
SB12	05/21/15	<1.0	<5.0	<1.0	<3.0
SB12	08/27/15	<1.0	<5.0	<1.0	<3.0
SB12	11/24/15	<1.0	<5.0	<1.0	<3.0
SB12	02/22/16	<1.0	<5.0	<1.0	<3.0
SB12	05/23/16	<1.0	<1.0	<1.0	<1.0
SB12	08/15/16	<1.0	<1.0	<1.0	<1.0
SB12	11/21/16	<1.0	<1.0	<1.0	<1.0
SB12	02/16/17	<1.0	<1.0	<1.0	<1.0
SB12	05/12/17		Well Not Sampled This Event ²		
SB12	08/24/17	<1.0	<1.0	<1.0	<2.0
SB12	11/20/17	<1.0	<1.0	<1.0	<2.0
SB12	02/26/18	<1.0	<1.0	<1.0	<2.0
SB12	05/21/18	<1.0	<1.0	<1.0	<2.0
SB12	08/27/18	<1.0	<1.0	<1.0	<2.0
SB12	11/09/18	<1.0	<1.0	<1.0	<2.0
SB12	02/25/19	<1.0	<1.0	<1.0	<2.0

Table 3-6

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB12	05/20/19	<1.0	<1.0	<1.0	<2.0
SB12	08/26/19	<1.0	<1.0	<1.0	<2.0
SB13	02/24/14	<1.0	<1.0	<1.0	1.4
SB13	05/19/14	<1.0	<5.0	<1.0	<3.0
SB13	08/29/14	1.3	<5.0	<1.0	<3.0
SB13	11/21/14	<1.0	<5.0	<1.0	<3.0
SB13	02/13/15	<1.0	<5.0	<1.0	<3.0
SB13	05/21/15	<1.0	<5.0	<1.0	<3.0
SB13	08/27/15	<1.0	<5.0	<1.0	<3.0
SB13	11/24/15	1.15	<5.0	<1.0	<3.0
SB13	02/22/16	10.6	<5.0	8.85	16
SB13	05/23/16	14	7.0	40	40
SB13	08/15/16	<1.0	<1.0	<1.0	<1.0
SB13	11/21/16	30	2.8	31	57
SB13	02/16/17	51	1.6	61	42
SB13	05/12/17	21	<1.0	48	<2.0
SB13	08/24/17	<1.0	<1.0	<1.0	<2.0
SB13	11/20/17	<1.0	<1.0	6.2	<2.0
SB13	02/26/18	1.4	<1.0	<1.0	<2.0
SB13	05/21/18	<1.0	<1.0	<1.0	<2.0
SB13	08/27/18	<1.0	<1.0	<1.0	<2.0
SB13	11/09/18	1.1	<1.0	<1.0	<2.0
SB13	02/25/19	<1.0	<1.0	<1.0	<2.0
SB13	05/20/19	<1.0	<1.0	<1.0	<2.0
SB13	09/03/19	3.3	<1.0	<1.0	<2.0
SB14	02/24/14	1,220	62.4	88.3	314
SB14	05/19/14	140	<5.0	1.4	4.8
SB14	08/29/14	2,600	<5.0	130	50
SB14	11/21/14	2,100	<500	120	<300
SB14	02/13/15	1,700	<100	210	<60
SB14	05/21/15	1,400	<100	310	<60
SB14	08/27/15	2,570	<100	394	<60
SB14	11/24/15	5,070	334	978	797
SB14	02/22/16	4,390	648	717	1,080
SB14	05/23/16	2,600	8.8	1,200	170
SB14	08/15/16	1,700	<1.0	1.9	48
SB14	11/21/16	400	1.6	680	53
SB14	02/16/17	<1.0	<1.0	<1.0	<1.0
SB14	05/12/17	15	<1.0	180	<2.0

Table 3-7

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB14	08/24/17	<1.0	<1.0	<1.0	<2.0
SB14	11/20/17	1.8	<1.0	<1.0	<2.0
SB14	02/26/18	3.2	<1.0	<1.0	<2.0
SB14	05/21/18	<1.0	<1.0	<1.0	<2.0
SB14	08/27/18	2.2	<1.0	<1.0	<2.0
SB14	11/09/18	1.2	<1.0	<1.0	<2.0
SB14	02/25/19	<1.0	<1.0	<1.0	<2.0
SB14	05/20/19	<1.0	<1.0	<1.0	<2.0
SB14	09/03/19	1.7	<1.0	<1.0	<2.0
SB15	02/24/14	4,610	8,690	553	10,900
SB15	05/19/14	3,900	2,500	530	9,700
SB15	08/29/14	2,000	<120	700	4,100
SB15	11/21/14	480	<120	190	880
SB15	02/13/15	100	<25	70	420
SB15	05/21/15	64	<25	30	230
SB15	08/27/15	91.7	<25	40.8	379
SB15	11/24/15	8.84	<5.0	<1.0	5.11
SB15	02/22/16	10.8	<5.0	<1.0	8.21
SB15	05/23/16	4.1	<1.0	5.7	26
SB15	08/15/16	<1.0	<1.0	<1.0	<1.0
SB15	11/21/16	<1.0	<1.0	<1.0	<1.0
SB15	02/16/17	<1.0	<1.0	<1.0	<1.0
SB15	05/12/17	14	<1.0	<1.0	2.1
SB15	08/24/17	<1.0	<1.0	<1.0	<2.0
SB15	11/20/17	<1.0	<1.0	<1.0	<2.0
SB15	02/26/18	<1.0	<1.0	<1.0	<2.0
SB15	05/21/18	<1.0	<1.0	<1.0	<2.0
SB15	08/27/18	21	<1.0	<1.0	<2.0
SB15	11/09/18	45	<1.0	<1.0	<2.0
SB15	02/25/19	13	<1.0	<1.0	<2.0
SB15	05/20/19	15	<1.0	<1.0	<2.0
SB15	08/26/19	4.4	<1.0	<1.0	<2.0
SB16	02/24/14	Not Sampled - Insufficient Water			
SB16	05/19/14	Not Sampled - Insufficient Water			
SB16	08/29/14	Not Sampled - Insufficient Water			
SB16	11/21/14	Not Sampled - Insufficient Water			
SB16	02/13/15	Not Sampled - Insufficient Water			
SB16	05/21/15	Not Sampled - Insufficient Water			
SB16	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned			

Table 3-8

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB16R	02/24/14	6,000	Not Sampled - LNAPL Present		
SB16R	05/19/14		26,000	770	14,000
SB16R	08/29/14		Not Sampled - LNAPL Present		
SB16R	11/21/14		Not Sampled - LNAPL Present		
SB16R	02/13/15		Not Sampled - LNAPL Present		
SB16R	05/21/15		Not Sampled - LNAPL Present		
SB16R	08/27/15		Not Sampled - LNAPL Present		
SB16R	11/24/15		Not Sampled - LNAPL Present		
SB16R	02/22/16		Not Sampled - LNAPL Present		
SB16R	05/23/16		Not Sampled - LNAPL Present		
SB16R	08/15/16		Not Sampled - LNAPL Present		
SB16R	11/21/16		Not Sampled - LNAPL Present		
SB16R	02/16/17		Not Sampled - LNAPL Present		
SB16R	05/12/17	Not Sampled - Monitoring Well Damaged and Removed from Monitoring Program			
SB16R2	08/24/17	1,200	3,100	45	2,300
SB16R2	11/20/17	Not Sampled - LNAPL Present	Not Sampled - LNAPL Present		
SB16R2	02/27/18		Not Sampled - LNAPL Present		
SB16R2	05/18/18		Not Sampled - LNAPL Present		
SB16R2	08/27/18		Not Sampled - LNAPL Present		
SB16R2	11/06/18		Not Sampled - LNAPL Present		
SB16R2	02/25/19		Not Sampled - LNAPL Present		
SB16R2	05/20/19		Not Sampled - LNAPL Present		
SB16R2	08/26/19		Not Sampled - LNAPL Present		
SB17	02/24/14	<1.0	<1.0	<1.0	<1.0
SB17	05/19/14	<1.0	<5.0	<1.0	<3.0
SB17	08/29/14	<1.0	<5.0	<1.0	<3.0
SB17	11/21/14	<1.0	<5.0	<1.0	<3.0
SB17	02/13/15	<1.0	<5.0	<1.0	<3.0
SB17	05/21/15	<1.0	<5.0	<1.0	<3.0
SB17	08/27/15	<1.0	<5.0	<1.0	<3.0
SB17	11/24/15	<1.0	<5.0	<1.0	<3.0
SB17	02/22/16	<1.0	<5.0	<1.0	<3.0
SB17	05/23/16	<1.0	<1.0	<1.0	<1.0
SB17	08/15/16	<1.0	<1.0	<1.0	<1.0
SB17	11/21/16	<1.0	<1.0	<1.0	<1.0
SB17	02/16/17	<1.0	<1.0	<1.0	<1.0
SB17	05/12/17	<1.0	<1.0	<1.0	<2.0
SB17	08/24/17	<1.0	<1.0	<1.0	<2.0
SB17	11/20/17	<1.0	<1.0	<1.0	<2.0

Table 3-9

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB17	02/26/18	<1.0	<1.0	<1.0	<2.0
SB17	05/21/18	<1.0	<1.0	<1.0	<2.0
SB17	08/27/18	<1.0	<1.0	<1.0	<2.0
SB17	11/09/18	<1.0	<1.0	<1.0	<2.0
SB17	02/25/19	<1.0	<1.0	<1.0	<2.0
SB17	05/20/19	<1.0	<1.0	<1.0	<2.0
SB17	09/03/19	<1.0	<1.0	<1.0	<2.0
SB18	02/24/14	<1.0	<1.0	<1.0	<1.0
SB18	05/19/14	<1.0	<5.0	<1.0	<3.0
SB18	08/29/14	<1.0	<5.0	<1.0	<3.0
SB18	11/21/14	<1.0	<5.0	<1.0	<3.0
SB18	02/13/15	<1.0	<5.0	<1.0	<3.0
SB18	05/21/15	<1.0	<5.0	<1.0	<3.0
SB18	08/27/15	<1.0	<5.0	<1.0	<3.0
SB18	11/24/15	<1.0	<5.0	<1.0	<3.0
SB18	02/22/16	<1.0	<5.0	<1.0	<3.0
SB18	05/23/16	1.9	<1.0	<1.0	<1.0
SB18	08/15/16	<1.0	<1.0	<1.0	<1.0
SB18	11/21/16	<1.0	<1.0	<1.0	<1.0
SB18	02/16/17	<1.0	<1.0	<1.0	<1.0
SB18	05/12/17	<1.0	<1.0	<1.0	<2.0
SB18	08/24/17	Not Sampled - Removed From Groundwater Monitoring Program			
SB19	02/24/14	<1.0	<1.0	<1.0	<1.0
SB19	05/19/14	<1.0	<5.0	<1.0	<3.0
SB19	08/29/14	<1.0	<5.0	<1.0	3.4
SB19	11/21/14	<1.0	<5.0	<1.0	<3.0
SB19	02/13/15	<1.0	<5.0	<1.0	<3.0
SB19	05/21/15	<1.0	<5.0	<1.0	<3.0
SB19	08/27/15	<1.0	<5.0	<1.0	<3.0
SB19	11/24/15	<1.0	<5.0	<1.0	<3.0
SB19	02/22/16	<1.0	<5.0	<1.0	<3.0
SB19	05/23/16	<1.0	<1.0	<1.0	<1.0
SB19	08/15/16	<1.0	<1.0	<1.0	<1.0
SB19	11/21/16	<1.0	<1.0	<1.0	<1.0
SB19	02/16/17	<1.0	<1.0	<1.0	<1.0
SB19	05/12/17	<1.0	<1.0	<1.0	<2.0
SB19	08/24/17	<1.0	<1.0	<1.0	<2.0
SB19	11/20/17	<1.0	<1.0	<1.0	<2.0
SB19	02/26/18	<1.0	<1.0	<1.0	<2.0

Table 3-10

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB19	05/21/18	<1.0	<1.0	<1.0	<2.0
SB19	08/27/18	<1.0	<1.0	<1.0	<2.0
SB19	11/09/18	<1.0	<1.0	<1.0	<2.0
SB19	02/25/19	<1.0	<1.0	<1.0	<2.0
SB19	05/20/19	<1.0	<1.0	<1.0	<2.0
SB19	08/26/19	<1.0	<1.0	<1.0	<2.0
SB20	02/24/14	Not Sampled - Insufficient Water			
SB20	05/19/14	<1.0	<5.0	<1.0	<3.0
SB20	08/29/14	<1.0	<5.0	<1.0	3.5
SB20	11/21/14	<1.0	<5.0	<1.0	<3.0
SB20	02/13/15	<1.0	<5.0	<1.0	<3.0
SB20	05/21/15	<1.0	<5.0	<1.0	<3.0
SB20	08/27/15	<1.0	<5.0	<1.0	<3.0
SB20	11/24/15	<1.0	<5.0	<1.0	<3.0
SB20	02/22/16	<1.0	<5.0	<1.0	<3.0
SB20	05/23/16	<1.0	<1.0	<1.0	<1.0
SB20	08/15/16	<1.0	<1.0	<1.0	<1.0
SB20	11/21/16	<1.0	<1.0	<1.0	<1.0
SB20	02/16/17	<1.0	<1.0	<1.0	<1.0
SB20	05/12/17	<1.0	<1.0	<1.0	<2.0
SB20	08/24/17	<1.0	<1.0	<1.0	<2.0
SB20	11/20/17	<1.0	<1.0	<1.0	<2.0
SB20	02/26/18	<1.0	<1.0	<1.0	<2.0
SB20	05/21/18	1.3	<1.0	<1.0	<2.0
SB20	08/27/18	<1.0	<1.0	<1.0	<2.0
SB20	11/09/18	<1.0	<1.0	<1.0	<2.0
SB20	02/25/19	<1.0	<1.0	<1.0	8.0
SB20	05/20/19	<1.0	<1.0	<1.0	<2.0
SB20	08/26/19	<1.0	<1.0	<1.0	4.0
SB20R	02/24/14	Not Sampled - Insufficient Water			
SB20R	05/19/14	Not Sampled - Insufficient Water			
SB20R	08/29/14	Not Sampled - Insufficient Water			
SB20R	11/21/14	Not Sampled - Insufficient Water			
SB20R	02/13/15	Not Sampled - Insufficient Water			
SB20R	05/21/15	Not Sampled - Insufficient Water			
SB20R	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned			
SB21	02/24/14	Not Sampled - LNAPL Present			
SB21	05/19/14	Not Sampled - LNAPL Present			
SB21	08/29/14	Not Sampled - LNAPL Present			

Table 3-11

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB21	11/21/14	Not Sampled - LNAPL Present			
SB21	02/13/15	Not Sampled - LNAPL Present			
SB21	05/21/15	Not Sampled - LNAPL Present			
SB21	08/27/15	Not Sampled - LNAPL Present			
SB21	11/24/15	Not Sampled - LNAPL Present			
SB21	02/22/16	Not Sampled - LNAPL Present			
SB21	05/23/16	Not Sampled - LNAPL Present			
SB21	08/15/16	Not Sampled - LNAPL Present			
SB21	11/21/16	Not Sampled - LNAPL Present			
SB21	02/16/17	Not Sampled - LNAPL Present			
SB21	05/12/17	Not Sampled - LNAPL Present			
SB21	08/24/17	Not Sampled - LNAPL Present			
SB21	11/20/17	Not Sampled - LNAPL Present			
SB21	02/26/18	Not Sampled - LNAPL Present			
SB21	05/18/18	Not Sampled - LNAPL Present			
SB21	08/27/18	Not Sampled - LNAPL Present			
SB21	11/06/18	Not Sampled - LNAPL Present			
SB21	02/25/19	Not Sampled - LNAPL Present			
SB21	05/20/19	Not Sampled - LNAPL Present			
SB21	08/26/19	Not Sampled - Insufficient Water			
SB22	02/24/14	Not Sampled - Insufficient Water			
SB22	05/19/14	Not Sampled - Insufficient Water			
SB22	08/29/14	Not Sampled - Insufficient Water			
SB22	11/21/14	Not Sampled - Insufficient Water			
SB22	02/13/15	Not Sampled - Insufficient Water			
SB22	05/21/15	Not Sampled - Insufficient Water			
SB22	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned			
SB22R	02/24/14	270	1,190	6.9	598
SB22R	05/19/14	110	1,900	5.0	1,600
SB22R	08/29/14	270	730	19	2,100
SB22R	11/21/14	110	220	<10	1,100
SB22R	02/13/15	22	5.5	2.4	110
SB22R	05/21/15	31	<5.0	<1.0	140
SB22R	08/27/15	<1.0	<5.1	<1.1	8.46
SB22R	11/24/15	2.34	<5.2	<1.2	21.8
SB22R	02/22/16	86.4	829	31.0	2,380
SB22R	05/23/16	190	150	43	750
SB22R	08/15/16	<1.0	<1.0	<1.0	<1.0
SB22R	11/21/16	2.2	2.7	2.5	<1.0

Table 3-12

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB22R	02/16/17	4.4	<1.0	2.0	1.1
SB22R	05/12/17	1.5	1.6	<1.0	<2.0
SB22R	08/24/17	<1.0	<1.0	<1.0	<2.0
SB22R	11/20/17	1.1	2.0	<1.0	3.8
SB22R	02/26/18	18	44	6.5	140
SB22R	05/21/18	14	5.8	2.6	56
SB22R	08/27/18	2.4	<1.0	<1.0	<2.0
SB22R	11/09/18	2.2	1.8	<1.0	3.4
SB22R	02/25/19	2.1	<1.0	<1.0	<2.0
SB22R	05/20/19	1.4	<1.0	<1.0	<2.0
SB22R	08/26/19	3.0	<1.0	2.2	12
SB23	02/24/14	Not Sampled - LNAPL Present			
SB23	05/19/14	Not Sampled - LNAPL Present			
SB23	08/29/14	Not Sampled - LNAPL Present			
SB23	11/21/14	Not Sampled - LNAPL Present			
SB23	02/13/15	Not Sampled - LNAPL Present			
SB23	05/21/15	Not Sampled - LNAPL Present			
SB23	08/27/15	Not Sampled - Insufficient Water			
SB23	11/24/15	Not Sampled - Insufficient Water			
SB23	02/22/16	Not Sampled - Insufficient Water			
SB23	05/23/16	Not Sampled - Insufficient Water			
SB23	08/15/16	Not Sampled - Insufficient Water			
SB23	11/21/16	Not Sampled - Insufficient Water			
SB23	02/16/17	Not Sampled - Insufficient Water			
SB23	05/12/17	Not Sampled - Removed From Groundwater Monitoring Program			
SB23R	08/24/17	Not Sampled - LNAPL Present			
SB23R	11/20/17	6,500	24,000	540	18,000
SB23R	02/26/18	Not Sampled - LNAPL Present			
SB23R	05/18/18	Not Sampled - LNAPL Present			
SB23R	08/27/18	Not Sampled - LNAPL Present			
SB23R	11/06/18	Not Sampled - LNAPL Present			
SB23R	02/25/19	Not Sampled - LNAPL Present			
SB23R	05/20/19	Not Sampled - LNAPL Present			
SB23R	08/26/19	Not Sampled - LNAPL Present			
SB24	02/24/14	Not Sampled - Insufficient Water			
SB24	05/19/14	Not Sampled - Insufficient Water			
SB24	08/29/14	Not Sampled - Insufficient Water			
SB24	11/21/14	Not Sampled - Insufficient Water			
SB24	02/13/15	Not Sampled - Insufficient Water			

Table 3-13

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB24	05/21/15	Not Sampled - Insufficient Water			
SB24	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned			
SB24R	02/24/14	<1.0	<1.0	<1.0	<1.0
SB24R	05/19/14	1.3	<5.0	<1.0	<3.0
SB24R	08/29/14	<1.0	<5.0	<1.0	<3.0
SB24R	11/21/14	<1.0	<5.0	<1.0	<3.0
SB24R	02/13/15	<1.0	<5.0	<1.0	4.0
SB24R	05/21/15	<1.0	<5.0	<1.0	<3.0
SB24R	08/27/15	<1.0	<5.0	<1.0	<3.0
SB24R	11/24/15	<1.0	<5.0	<1.0	<3.0
SB24R	02/22/16	<1.0	<5.0	<1.0	<3.0
SB24R	05/23/16	<1.0	<1.0	<1.0	<1.0
SB24R	08/15/16	<1.0	<1.0	<1.0	<1.0
SB24R	11/21/16	<1.0	<1.0	<1.0	<1.0
SB24R	02/16/17	<1.0	<1.0	<1.0	<1.0
SB24R	05/12/17	Not Sampled - Removed From Groundwater Monitoring Program			
SB25	02/24/14	Not Sampled - Insufficient Water			
SB25	05/19/14	Not Sampled - Insufficient Water			
SB25	08/29/14	Not Sampled - Insufficient Water			
SB25	11/21/14	Not Sampled - Insufficient Water			
SB25	02/13/15	Not Sampled - Insufficient Water			
SB25	05/21/15	Not Sampled - Insufficient Water			
SB25	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned			
SB25R	02/24/14	<1.0	<1.0	<1.0	<1.0
SB25R	05/19/14	<1.0	<5.0	<1.0	<3.0
SB25R	08/29/14	<1.0	<5.0	<1.0	<3.0
SB25R	11/21/14	<1.0	<5.0	<1.0	<3.0
SB25R	02/13/15	<1.0	<5.0	<1.0	<3.0
SB25R	05/21/15	<1.0	<5.0	<1.0	<3.0
SB25R	08/27/15	<1.0	<5.0	<1.0	<3.0
SB25R	11/24/15	<1.0	<5.0	<1.0	<3.0
SB25R	02/22/16	<1.0	<5.0	<1.0	<3.0
SB25R	05/23/16	<1.0	<1.0	<1.0	<1.0
SB25R	08/15/16	<1.0	<1.0	<1.0	<1.0
SB25R	11/21/16	<1.0	<1.0	<1.0	<1.0
SB25R	02/16/17	<1.0	<1.0	<1.0	<1.0
SB25R	05/12/17	<1.0	<1.0	<1.0	<2.0

Table 3-14

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB25R	08/24/17	<1.0	<1.0	<1.0	<2.0
SB25R	11/20/17	<1.0	<1.0	<1.0	<2.0
SB25R	02/26/18	<1.0	<1.0	<1.0	<2.0
SB25R	05/21/18	<1.0	<1.0	<1.0	<2.0
SB25R	08/27/18	<1.0	<1.0	<1.0	<2.0
SB25R	11/09/18	<1.0	<1.0	<1.0	<2.0
SB25R	02/25/19	<1.0	<1.0	<1.0	<2.0
SB25R	05/20/19	<1.0	<1.0	<1.0	<2.0
SB25R	08/26/19	<1.0	<1.0	<1.0	<2.0
SB26	02/24/14	<1.0	<1.0	<1.0	<1.0
SB26	05/19/14	3.0	<5.0	<1.0	<3.0
SB26	08/29/14	<1.0	<5.0	<1.0	<3.0
SB26	11/21/14	<1.0	<5.0	<1.0	<3.0
SB26	02/13/15	<1.0	<5.0	<1.0	<3.0
SB26	05/21/15	<1.0	<5.0	<1.0	<3.0
SB26	08/27/15	<1.0	<5.0	<1.0	<3.0
SB26	11/24/15	<1.0	<5.0	<1.0	<3.0
SB26	02/22/16	<1.0	<5.0	<1.0	<3.0
SB26	05/23/16	<1.0	<1.0	<1.0	<1.0
SB26	08/15/16	<1.0	<1.0	<1.0	<1.0
SB26	11/21/16	<1.0	<1.0	<1.0	<1.0
SB26	02/16/17	<1.0	<1.0	<1.0	<1.0
SB26	05/12/17	Not Sampled - Removed From Groundwater Monitoring Program			
SB27	02/24/14	Not Sampled - Insufficient Water			
SB27	05/19/14	Not Sampled - Insufficient Water			
SB27	08/29/14	Not Sampled - Insufficient Water			
SB27	11/21/14	Not Sampled - Insufficient Water			
SB27	02/13/15	Not Sampled - Insufficient Water			
SB27	05/21/15	Not Sampled - Insufficient Water			
SB27	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned			
SB27R	02/24/14	<1.0	<1.0	<1.0	<1.0
SB27R	05/19/14	16	<5.0	<1.0	<3.0
SB27R	08/29/14	<1.0	<5.0	<1.0	<3.0
SB27R	11/21/14	<1.0	<5.0	<1.0	<3.0
SB27R	02/13/15	<1.0	<5.0	<1.0	<3.0
SB27R	05/21/15	<1.0	<5.0	<1.0	<3.0
SB27R	08/27/15	<1.00	<5.00	<1.00	<3.00

Table 3-15

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB27R	11/24/15	<1.00	<5.00	<1.00	<3.00
SB27R	02/22/16	<1.00	<5.00	<1.00	<3.00
SB27R	05/23/16	<1.0	<1.0	<1.0	<1.0
SB27R	08/15/16	<1.0	<1.0	<1.0	<1.0
SB27R	11/21/16	<1.0	<1.0	<1.0	<1.0
SB27R	02/16/17	<1.0	<1.0	<1.0	<1.0
SB27R	05/12/17	<1.0	<1.0	<1.0	<2.0
SB27R	08/24/17	<1.0	<1.0	<1.0	<2.0
SB27R	11/20/17	<1.0	<1.0	<1.0	11
SB27R	02/26/18	<1.0	<1.0	<1.0	<2.0
SB27R	05/21/18	<1.0	<1.0	<1.0	<2.0
SB27R	08/27/18	<1.0	<1.0	<1.0	<2.0
SB27R	11/09/18	<1.0	<1.0	<1.0	<2.0
SB27R	02/25/19	<1.0	<1.0	<1.0	<2.0
SB27R	05/20/19	<1.0	<1.0	<1.0	<2.0
SB27R	08/26/19	<1.0	<1.0	<1.0	<2.0
SB28	02/24/14	Not Sampled - Insufficient Water			
SB28	05/19/14	Not Sampled - Insufficient Water			
SB28	08/29/14	Not Sampled - Insufficient Water			
SB28	11/21/14	Not Sampled - Insufficient Water			
SB28	02/13/15	Not Sampled - Insufficient Water			
SB28	05/21/15	Not Sampled - Insufficient Water			
SB28	08/27/15	Removed From Groundwater Monitoring Program - Plugged and Abandoned			
SB28R	02/24/14	<1.0	<1.0	<1.0	3.01
SB28R	05/19/14	<1.0	<5.0	<1.0	<3.0
SB28R	08/29/14	<1.0	<5.0	<1.0	<3.0
SB28R	11/21/14	<1.0	<5.0	<1.0	<3.0
SB28R	02/13/15	<1.0	<5.0	<1.0	<3.0
SB28R	05/21/15	<1.0	<5.0	<1.0	<3.0
SB28R	08/27/15	<1.0	<5.0	<1.0	<3.0
SB28R	11/24/15	<1.0	<5.0	<1.0	<3.0
SB28R	02/22/16	<1.0	<5.0	<1.0	<3.0
SB28R	05/23/16	<1.0	<1.0	<1.0	<1.0
SB28R	08/15/16	<1.0	<1.0	<1.0	<1.0
SB28R	11/21/16	Not Sampled - Insufficient Water			
SB28R	02/16/17	<1.0	<1.0	<1.0	<1.0
SB28R	05/12/17	<1.0	<1.0	<1.0	<2.0

Table 3-16

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB28R ¹	08/24/17	<1.0	<1.0	<1.0	<2.0
SB28R ¹	11/20/17	<1.0	<1.0	<1.0	<2.0
SB28R ¹	02/26/18	<1.0	<1.0	<1.0	<2.0
SB28R	05/21/18	<1.0	<1.0	<1.0	<2.0
SB28R	08/27/18	<1.0	<1.0	<1.0	<2.0
SB28R	11/09/18	<1.0	<1.0	<1.0	<2.0
SB28R	02/25/19	<1.0	<1.0	<1.0	<2.0
SB28R	05/20/19	<1.0	<1.0	<1.0	<2.0
SB28R	08/26/19	<1.0	<1.0	<1.0	<2.0
SB29	02/24/14	<1.0	<1.0	<1.0	<1.0
SB29	05/19/14	<1.0	<5.0	<1.0	<3.0
SB29	08/29/14	<1.0	<5.0	<1.0	<3.0
SB29	11/21/14	<1.0	<5.0	<1.0	<3.0
SB29	02/13/15	<1.0	<5.0	<1.0	<3.0
SB29	05/21/15	<1.0	<5.0	<1.0	<3.0
SB29	08/27/15	<1.0	<5.0	<1.0	<3.0
SB29	11/24/15	<1.0	<5.0	<1.0	<3.0
SB29	02/22/16	<1.0	<5.0	<1.0	<3.0
SB29	05/23/16	<1.0	<1.0	<1.0	<1.0
SB29	08/15/16	<1.0	<1.0	<1.0	<1.0
SB29	11/21/16	<1.0	<1.0	<1.0	<1.0
SB29	02/16/17	<1.0	<1.0	<1.0	<1.0
SB29	05/12/17	Not Sampled - Removed From Groundwater Monitoring Program			
SB30	02/24/14	Not Sampled - LNAPL Present			
SB30	05/19/14	Not Sampled - LNAPL Present			
SB30	08/29/14	Not Sampled - LNAPL Present			
SB30	11/21/14	Not Sampled - LNAPL Present			
SB30	02/13/15	Not Sampled - LNAPL Present			
SB30	05/21/15	Not Sampled - LNAPL Present			
SB30	08/27/15	Not Sampled - LNAPL Present			
SB30	11/24/15	Not Sampled - LNAPL Present			
SB30	02/22/16	Not Sampled - LNAPL Present			
SB30	02/22/16	Not Sampled - LNAPL Present			
SB30	08/15/16	Not Sampled - LNAPL Present			
SB30	11/21/16	Not Sampled - LNAPL Present			
SB30	02/16/17	Not Sampled - LNAPL Present			
SB30	05/12/17	Not Sampled - Spill Buster Present			

Table 3-17

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB30	08/24/17	Not Sampled - LNAPL Present			
SB30	11/20/17	Not Sampled - LNAPL Present			
SB30	02/26/18	Not Sampled - LNAPL Present			
SB30	05/18/18	Not Sampled - LNAPL Present			
SB30	08/27/18	Not Sampled - LNAPL Present			
SB30	11/06/18	Not Sampled - LNAPL Present			
SB30	02/25/19	Not Sampled - LNAPL Present			
SB30	05/20/19	Not Sampled - LNAPL Present			
SB30	08/26/19	Not Sampled - LNAPL Present			
SB31	02/24/14	Not Sampled - LNAPL Present			
SB31	05/19/14	Not Sampled - LNAPL Present			
SB31	08/29/14	Not Sampled - LNAPL Present			
SB31	11/21/14	Not Sampled - LNAPL Present			
SB31	02/13/15	Not Sampled - LNAPL Present			
SB31	05/21/15	Not Sampled - LNAPL Present			
SB31	08/27/15	Not Sampled - LNAPL Present			
SB31	02/22/16	Not Sampled - LNAPL Present			
SB31	02/22/16	Not Sampled - LNAPL Present			
SB31	05/23/16	Not Sampled - LNAPL Present			
SB31	08/15/16	Not Sampled - LNAPL Present			
SB31	11/21/16	Not Sampled - LNAPL Present			
SB31	02/16/17	Not Sampled - LNAPL Present			
SB31	05/12/17	Not Sampled - Spill Buster Present			
SB31	08/24/17	Not Sampled - LNAPL Present			
SB31	11/20/17	Not Sampled - LNAPL Present			
SB31	02/26/18	Not Sampled - LNAPL Present			
SB31	05/18/18	Not Sampled - LNAPL Present			
SB31	08/27/18	Not Sampled - LNAPL Present			
SB31	11/06/18	Not Sampled - LNAPL Present			
SB31	02/25/19	Not Sampled - LNAPL Present			
SB31	05/20/19	Not Sampled - LNAPL Present			
SB31	08/26/19	Not Sampled - LNAPL Present			
SB32	02/24/14	1.1	6.2	<1.0	7.3
SB32	03/31/14	3.6	15	<1.0	18
SB32	05/19/14	5.2	38	1.2	91
SB32	08/29/14	4.9	30	1.8	220
SB32	11/21/14	<1.0	<5.0	<1.0	7.1

Table 3-18

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION



Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB32	02/13/15	<1.0	<5.0	<1.0	<3.0
SB32	05/21/15	<1.0	<5.0	<1.0	3.3
SB32	08/27/15	Not Sampled - Insufficient Water			
SB32	11/24/15	Not Sampled - Insufficient Water			
SB32	02/22/16	Not Sampled - Insufficient Water			
SB32	05/23/16	Not Sampled - Insufficient Water			
SB32	08/15/16	Not Sampled - Insufficient Water			
SB32	11/21/16	Not Sampled - Insufficient Water			
SB32	02/16/17	Not Sampled - Insufficient Water			
SB32	05/12/17	Not Sampled - Insufficient Water			
SB32	08/24/17	Not Sampled - Dry			
SB32	11/20/17	Not Sampled - Insufficient Water			
SB32	02/26/18	Not Sampled - Insufficient Water			
SB32	05/18/18	Not Sampled - Insufficient Water			
SB32	08/27/18	Not Sampled - Insufficient Water			
SB32	11/06/18	Not Sampled - Insufficient Water			
SB32	02/25/19	Not Sampled - Insufficient Water			
SB32	05/20/19	Not Sampled - Insufficient Water			
SB32	08/26/19	Not Sampled - Insufficient Water			
SB33	02/24/14	Not Sampled - Insufficient Water			
SB33	05/19/14	Not Sampled - Insufficient Water			
SB33	08/29/14	<1.0	<5.0	<1.0	<3.0
SB33	11/21/14	<1.0	<5.0	<1.0	<3.0
SB33	02/13/15	<1.0	<5.0	<1.0	6.2
SB33	05/21/15	<1.0	<5.0	<1.0	<3.0
SB33	08/27/15	<1.0	<5.0	<1.0	<3.0
SB33	11/24/15	<1.0	<5.0	<1.0	<3.0
SB33	02/22/16	<1.0	<5.0	<1.0	<3.0
SB33	05/23/16	<1.0	<1.0	<1.0	<1.0
SB33	08/15/16	<1.0	<1.0	<1.0	<1.0
SB33	11/21/16	<1.0	<1.0	<1.0	<1.0
SB33	02/16/17	<1.0	<1.0	<1.0	<1.0
SB33	05/12/17	Not Sampled - Removed From Groundwater Monitoring Program			
SB34	02/24/14	<1.0	<1.0	<1.0	<1.0
SB34	05/19/14	1.1	<5.0	<1.0	<3.0
SB34	08/29/14	<1.0	<5.0	<1.0	<3.0
SB34	11/21/14	<1.0	<5.0	<1.0	<3.0

Table 3-19

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB34	02/13/15	<1.0	<5.0	<1.0	<3.0
SB34	05/21/15	<1.0	<5.0	<1.0	<3.0
SB34	08/27/15	<1.0	<5.0	<1.0	<3.0
SB34	11/24/15	<1.0	<5.0	<1.0	<3.0
SB34	02/22/16	<1.0	<5.0	<1.0	<3.0
SB34	05/23/16	<1.0	<1.0	<1.0	<1.0
SB34	08/15/16	<1.0	<1.0	<1.0	<1.0
SB34	11/21/16	<1.0	<1.0	<1.0	<1.0
SB34	02/16/17	<1.0	<1.0	<1.0	<1.0
SB34	05/12/17	Not Sampled - Removed From Groundwater Monitoring Program			
SB35	03/31/14	<1.0	<5.0	<1.0	<3.0
SB35	05/19/14	<1.0	<5.0	<1.0	<3.0
SB35	08/29/14	<1.0	<5.0	<1.0	<3.0
SB35	11/21/14	<1.0	<5.0	<1.0	<3.0
SB35	02/13/15	<1.0	<5.0	<1.0	<3.0
SB35	05/21/15	<1.0	<5.0	<1.0	<3.0
SB35	08/27/15	<1.0	<5.0	<1.0	<3.0
SB35	11/24/15	<1.0	<5.0	<1.0	<3.0
SB35	02/22/16	<1.0	<5.0	<1.0	<3.0
SB35	05/23/16	<1.0	<1.0	<1.0	<1.0
SB35	08/15/16	<1.0	<1.0	<1.0	<1.0
SB35	11/21/16	<1.0	<1.0	<1.0	<1.0
SB35	02/16/17	<1.0	<1.0	<1.0	<1.0
SB35	05/12/17	<1.0	<1.0	<1.0	<2.0
SB35	08/24/17	Not Sampled - Removed From Groundwater Monitoring Program			
SB36	03/31/14	77	<5.0	3.2	<3.0
SB36	05/19/14	220	<5.0	<1.0	<3.0
SB36	08/29/14	240	<5.0	4.7	<3.0
SB36	11/21/14	120	<25	6	<15
SB36	02/13/15	64	<25	170	<15
SB36	05/21/15	36	<25	480	<15
SB36	08/27/15	140	<25	27.5	2,460
SB36	11/24/15	22.5	<5.0	<1.0	714
SB36	02/22/16	<5.0	<25	<5.0	114
SB36	05/23/16	<1.0	<1.0	<1.0	140
SB36	08/15/16	<1.0	<1.0	<1.0	21
SB36	11/21/16	3.2	1.5	21	160

Table 3-20

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB36	02/16/17	4.4	<1.0	49	100
SB36	05/12/17	6.0	1.7	54	46
SB36	08/24/17	<1.0	<1.0	<1.0	<2.0
SB36	11/20/17	5.6	4.3	50	6.7
SB36	02/26/18	1.6	<1.0	3.8	<2.0
SB36	05/21/18	<1.0	<1.0	<1.0	<2.0
SB36	08/27/18	<1.0	<1.0	<1.0	<2.0
SB36	11/09/18	<1.0	<1.0	<1.0	<2.0
SB36	02/25/19	<1.0	<1.0	<1.0	<2.0
SB36	05/20/19	<1.0	<1.0	<1.0	<2.0
SB36	08/26/19	<1.0	<1.0	<1.0	<2.0
SB37	03/31/14	Not Sampled - Insufficient Water			
SB37	05/19/14	40	80	<1.0	1,100
SB37	08/29/14	680	1,000	<20	2,700
SB37	11/21/14	390	470	<20	1,300
SB37	02/13/15	370	940	<20	5,000
SB37	05/21/15	150	200	<20	1,300
SB37	08/27/15	162	872	20.2	1,980
SB37	11/24/15	263	4,100	129	7,670
SB37	02/22/16	488	8,070	290	10,200
SB37	05/23/16	Not Sampled - LNAPL Present			
SB37	08/15/16	Not Sampled - LNAPL Present			
SB37	11/21/16	Not Sampled - LNAPL Present			
SB37	02/16/17	Not Sampled - LNAPL Present			
SB37	05/12/17	Not Sampled - LNAPL Present			
SB37	08/24/17	Not Sampled - LNAPL Present			
SB37	11/20/17	Not Sampled - LNAPL Present			
SB37	02/26/18	Not Sampled - LNAPL Present			
SB37	05/18/18	Not Sampled - LNAPL Present			
SB37	08/27/18	Not Sampled - LNAPL Present			
SB37	11/06/18	Not Sampled - LNAPL Present			
SB37	02/25/19	Not Sampled - LNAPL Present			
SB37	05/20/19	Not Sampled - LNAPL Present			
SB37	08/26/19	Not Sampled - LNAPL Present			
SB38	03/31/14	14	10	3.1	32
SB38	05/19/14	16	<5.0	<1.0	<3.0
SB38	08/29/14	<1.0	<5.0	<1.0	<3.0

Table 3-21

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB38	11/21/14	<1.0	<5.0	<1.0	<3.0
SB38	02/13/15	<1.0	<5.0	<1.0	<3.0
SB38	05/21/15	<1.0	<5.0	<1.0	<3.0
SB38	08/27/15	136	<5.0	<1.0	<3.0
SB38	11/24/15	3.16	<5.0	<1.0	<3.0
SB38	02/22/16	2.11	<5.0	<1.0	<3.0
SB38	05/23/16	1.7	<1.0	<1.0	<1.0
SB38	08/15/16	<1.0	<1.0	<1.0	<1.0
SB38	11/21/16	<1.0	<1.0	<1.0	<1.0
SB38	02/16/17	<1.0	<1.0	<1.0	<1.0
SB38	05/12/17	<1.0	<1.0	<1.0	<2.0
SB38	08/24/17	<1.0	<1.0	<1.0	<2.0
SB38	11/20/17	<1.0	<1.0	<1.0	4.2
SB38	02/26/18	<1.0	<1.0	<1.0	<2.0
SB38	05/21/18	<1.0	<1.0	<1.0	<2.0
SB38	08/27/18	<1.0	<1.0	<1.0	<2.0
SB38	11/09/18	<1.0	<1.0	<1.0	<2.0
SB38	02/25/19	1.0	<1.0	<1.0	<2.0
SB38	05/20/19	1.0	<1.0	<1.0	<2.0
SB38	09/03/19	<1.0	<1.0	<1.0	<2.0
SB39	04/18/14	<1.0	<5.0	<1.0	<3.0
SB39	05/19/14	<1.0	<5.0	<1.0	<3.0
SB39	08/29/14	<1.0	<5.0	<1.0	<3.0
SB39	11/21/14	<1.0	<5.0	<1.0	<3.0
SB39	02/13/15	<1.0	<5.0	<1.0	<3.0
SB39	05/21/15	<1.0	<5.0	<1.0	<3.0
SB39	08/27/15	<1.0	<5.0	<1.0	<3.0
SB39	11/24/15	<1.0	<5.0	<1.0	<3.0
SB39	02/22/16	<1.0	<5.0	<1.0	<3.0
SB39	05/23/16	<1.0	<1.0	<1.0	<1.0
SB39	08/15/16	<1.0	<1.0	<1.0	<1.0
SB39	11/21/16	<1.0	<1.0	<1.0	<1.0
SB39	02/16/17	<1.0	<1.0	<1.0	<1.0
SB39	05/12/17	<1.0	<1.0	<1.0	<2.0
SB39	08/24/17	<1.0	<1.0	<1.0	<2.0
SB39	11/20/17	<1.0	<1.0	<1.0	<2.0
SB39	02/26/18	<1.0	<1.0	<1.0	<2.0

Table 3-22

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB39	05/21/18	<1.0	<1.0	<1.0	<2.0
SB39	08/27/18	<1.0	<1.0	<1.0	<2.0
SB39	11/09/18	<1.0	<1.0	<1.0	<2.0
SB39	02/25/19	<1.0	<1.0	<1.0	<2.0
SB39	05/20/19	<1.0	<1.0	<1.0	<2.0
SB39	08/26/19	<1.0	<1.0	<1.0	<2.0
SB40	04/18/14	<1.0	<5.0	<1.0	<3.0
SB40	05/19/14	<1.0	<5.0	<1.0	<3.0
SB40	08/29/14	<1.0	<5.0	<1.0	<3.0
SB40	11/21/14	<1.0	<5.0	<1.0	<3.0
SB40	02/13/15	<1.0	<5.0	<1.0	<3.0
SB40	05/21/15	<1.0	<5.0	<1.0	<3.0
SB40	08/27/15	<1.0	<5.0	<1.0	<3.0
SB40	11/24/15	<1.0	<5.0	<1.0	<3.0
SB40	02/22/16	<1.0	<5.0	<1.0	<3.0
SB40	05/23/16	<1.0	<1.0	<1.0	<1.0
SB40	08/15/16	<1.0	<1.0	<1.0	<1.0
SB40	11/21/16	<1.0	<1.0	<1.0	<1.0
SB40	02/16/17	<1.0	<1.0	<1.0	<1.0
SB40	05/12/17	Not Sampled - Removed From Groundwater Monitoring Program			
SB41	04/18/14	<1.0	<5.0	<1.0	<3.0
SB41	05/19/14	<1.0	<5.0	<1.0	<3.0
SB41	08/29/14	<1.0	<5.0	<1.0	<3.0
SB41	11/21/14	<1.0	<5.0	<1.0	<3.0
SB41	02/13/15	<1.0	<5.0	<1.0	<3.0
SB41	05/21/15	<1.0	<5.0	<1.0	<3.0
SB41	08/27/15	<1.0	<5.0	<1.0	<3.0
SB41	11/24/15	<1.0	<5.0	<1.0	<3.0
SB41	02/22/16	<1.0	<5.0	<1.0	<3.0
SB41	05/23/16	<1.0	<1.0	<1.0	<1.0
SB41	08/15/16	<1.0	<1.0	<1.0	<1.0
SB41	11/21/16	<1.0	<1.0	<1.0	<1.0
SB41	02/16/17	<1.0	<1.0	<1.0	<1.0
SB41	05/12/17	Not Sampled - Removed From Groundwater Monitoring Program			
SB42	04/18/14	<1.0	<5.0	<1.0	<3.0
SB42	05/19/14	<1.0	<5.0	<1.0	<3.0
SB42	08/29/14	<1.0	<5.0	<1.0	<3.0
SB42	11/21/14	<1.0	<5.0	<1.0	<3.0

Table 3-23

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
SB42	02/13/15	<1.0	<5.0	<1.0	<3.0
SB42	05/21/15	<1.0	<5.0	<1.0	<3.0
SB42	08/27/15	<1.0	<5.0	<1.0	<3.0
SB42	11/24/15	<1.0	<5.0	<1.0	<3.0
SB42	02/22/16	<1.0	<5.0	<1.0	<3.0
SB42	05/23/16	<1.0	<1.0	<1.0	<1.0
SB42	08/15/16	<1.0	<1.0	<1.0	<1.0
SB42	11/21/16	<1.0	<1.0	<1.0	<1.0
SB42	02/16/17	<1.0	<1.0	<1.0	<1.0
SB42	05/12/17	Not Sampled - Removed From Groundwater Monitoring Program			
DUP (SB06)	02/24/14	<1.0	<1.0	<1.0	<1.0
DUP (SB08)	05/19/14	6,000	16,000	540	12,000
DUP (SB22R)	08/29/14	290	700	<20	2,200
DUP (SB37)	11/21/14	400	530	<20	1,400
DUP (SB37)	08/27/15	176	899	20.3	2,000
DUPE (SB37)	11/24/15	233	1,080	70.5	1,730
DUPE (SB37)	02/22/16	295	4,310	170	6,270
Dupe01 (SB10)	02/16/17	5,100	2,600	840	11,000
Dup (SB07)	08/24/17	2,500	260	170	3,700
Dup (SB23R)	11/20/17	4,500	17,000	410	14,000
Dup (SB08)	02/26/18	6,100	680	510	7,600
DUP (SB08)	05/21/18	4,500	130	100	8,100
DUP (SB07)	08/27/18	190	<1.0	77	690
Duplicate (SB08)	11/09/18	5,200	140	410	7,800
Duplicate (SB08)	02/25/19	1,900	980	470	4,500
Dupe (SB08)	05/20/19	1,500	69	580	6,200
Duplicate (SB07)	08/26/19	2,600	430	560	9,600
Trip Blank	02/24/14	<1.0	<1.0	<1.0	<1.0
Trip Blank	04/18/14	<1.0	<5.0	<1.0	<3.0
Trip Blank	05/19/14	<1.0	<5.0	<1.0	<3.0
Trip Blank	08/29/14	<1.0	<5.0	<1.0	<3.0
Trip Blank	11/21/14	<1.0	<5.0	<1.0	<3.0
Trip Blank	08/27/15	<1.0	<5.0	<1.0	<3.0
Trip Blank	11/24/15	<1.0	<5.0	<1.0	<3.0
Trip Blank	02/22/16	<1.0	<5.0	<1.0	<3.0
Red Cooler (TB-1)	11/18/16	<1.0	<1.0	<1.0	<1.0
Blue Cooler (TB-2)	11/18/16	<1.0	<1.0	<1.0	<1.0
Trip Blank Blue	02/16/17	<1.0	<1.0	<1.0	<1.0

Table 3-24

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
Trip Blank Red	02/16/17	<1.0	<1.0	<1.0	<1.0
Trip Blank	05/11/17	<1.0	<1.0	<1.0	<2.0
Trip Blank 01	08/24/17	<1.0	<1.0	<1.0	<2.0
Trip Blank 1	11/20/17	<1.0	<1.0	<1.0	<2.0
Trip Blank	02/26/18	<1.0	<1.0	<1.0	<2.0
Trip Blank	05/21/18	<1.0	<1.0	<1.0	<2.0
Trip Blank	08/27/18	<1.0	<1.0	<1.0	<2.0
Trip Blank	11/09/18	<1.0	<1.0	<1.0	<2.0
Trip Blank	02/25/19	<1.0	<1.0	<1.0	<2.0
Trip Blank	05/20/19	<1.0	<1.0	<1.0	<2.0
Trip Blank	08/26/19	<1.0	<1.0	<1.0	<2.0
Trip Blank	09/03/19	<1.0	<1.0	<1.0	<2.0

Notes:

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

< = Analytical result is less than the indicated laboratory reporting limit

LNAPL = Light non-aqueous phase liquid

DUP = Duplicate sample

¹ Well obstruction large enough to block meter sensor, small enough to allow hydrasleeve deployment.

² Tasman recommended a reduced groundwater monitoring well network to Noble Energy on March 29, 2017 based on historical groundwater data.

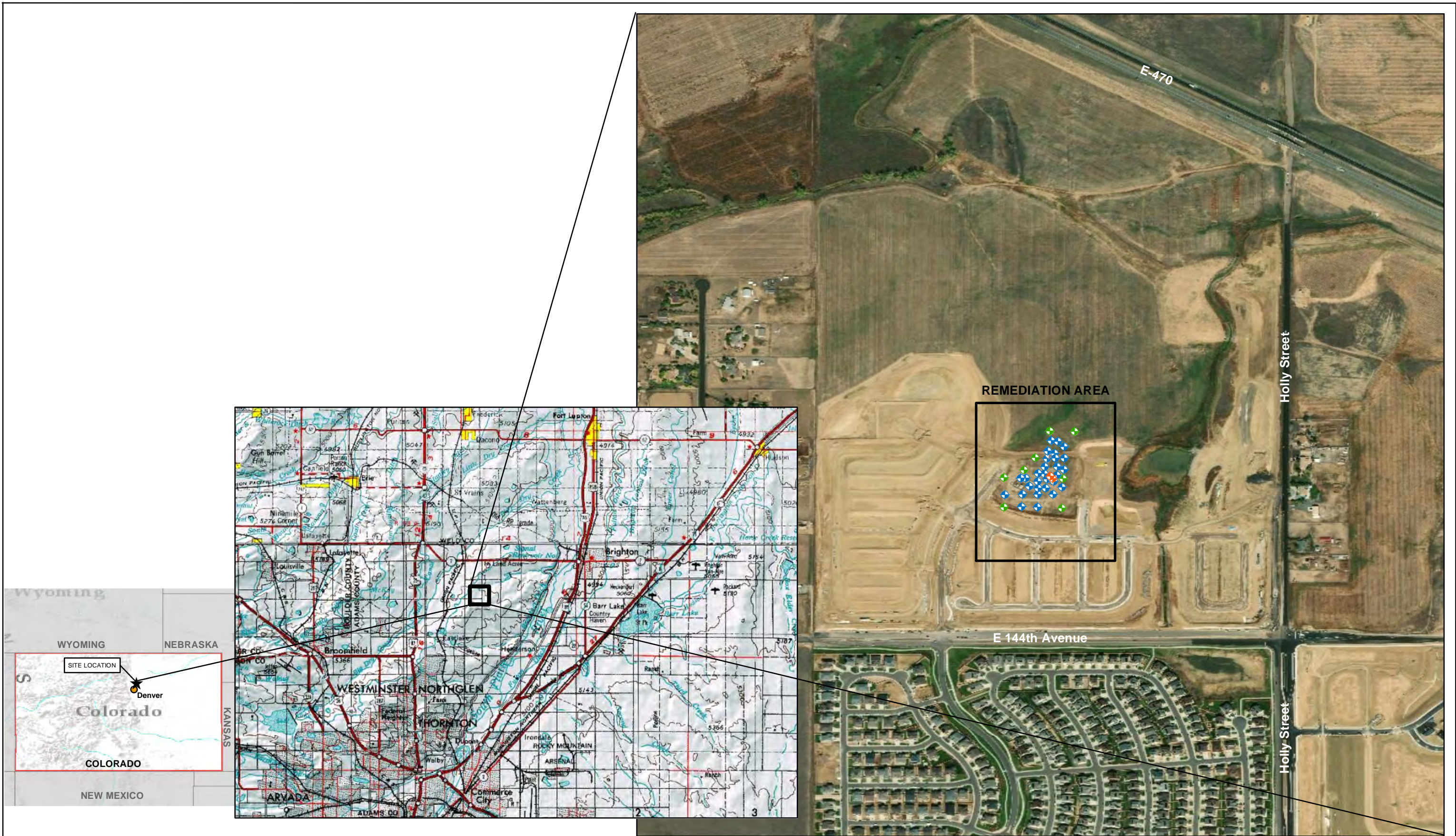
³ Diluted sample run was analyzed outside of holding time, but results are comparable with previous quarter. Therefore, sample results are viewed as estimated, but acceptable.

Groundwater standards referenced from COGCC Table 910-1

Highlighted results exceed the COGCC Table 910-1 standard

This table presents data collected by Tasman Geosciences. Historical data is presented in Attachment A of the Form 27 Site Assessment Report (COGCC Document #2148980)

FIGURES



DATE:
September 2017

DESIGNED BY:
B. Bruns

DRAWN BY:
D. Arnold

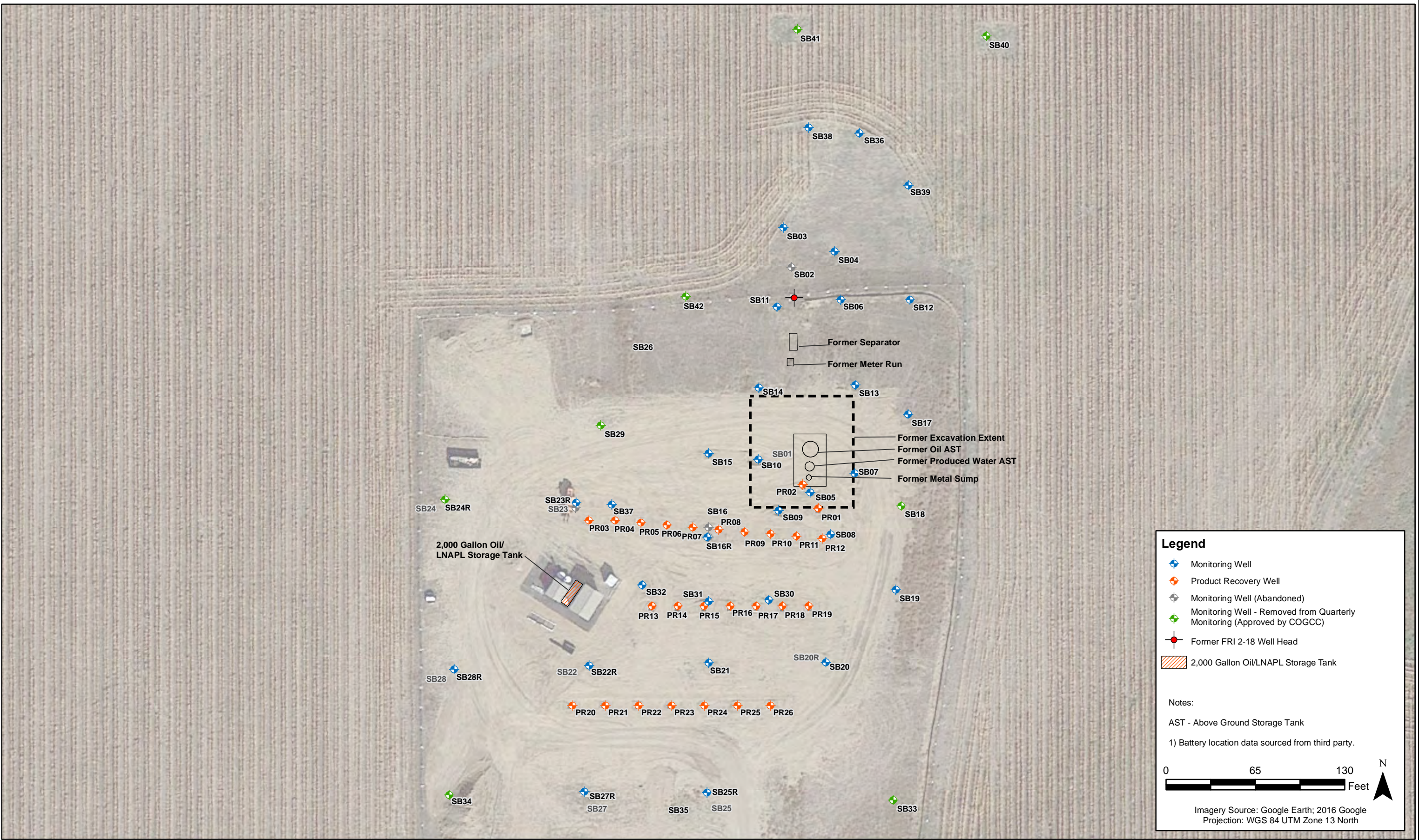


Tasman Geosciences, Inc.
6855 W. 119th Ave
Broomfield, CO 80020

Noble Energy, Inc.
Plugged & Abandoned Fri 2-18 Tank Battery & Wellhead Location
Section 18, Township 1 South, Range 67 West
Adams County, Colorado

Site Location
Map

Figure
1



DATE:	June 2018
DESIGNED BY:	B. Bruns
DRAWN BY:	D. Arnold



Tasman Geosciences, Inc.
6855 W. 119th Ave
Broomfield, CO 80020

Noble Energy, Inc. - DJ Basin
Plugged & Abandoned Fri 2-18 Tank Battery & Wellhead Location
Section 18, Township 1 South, Range 67 West
Adams County, Colorado

Remediation System
Layout

Figure
2



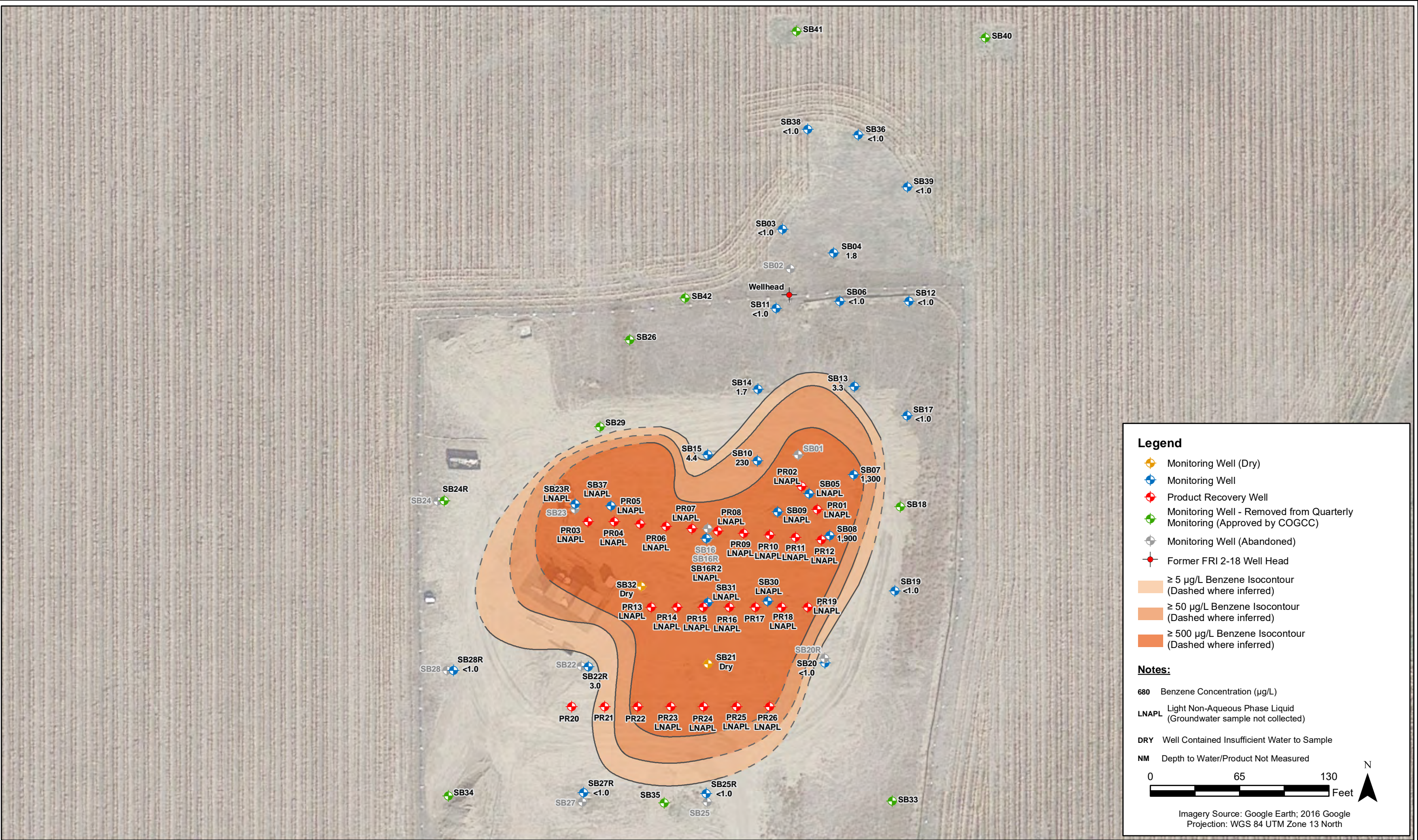
DATE:	October 2019
DESIGNED BY:	B. Bruns
DRAWN BY:	J. Clonts



Noble Energy, Inc.
Plugged & Abandoned Fri 2-18 Tank Battery & Wellhead Location
Section 18, Township 1 South, Range 67 West
Adams County, Colorado

**LNAPL
Thickness Map
(3Q2017, 3Q2018, 3Q2019)**

**Figure
3**



DATE:	October 2019
DESIGNED BY:	B.Bruns
DRAWN BY:	J. Clonts



TASMAN
GEOSCIENCES

Tasman Geosciences, Inc.
6855 W. 119th Avenue
Broomfield, Colorado 80020

Noble Energy, Inc. - DJ Basin
Plugged & Abandoned Fri 2-18 Tank Battery & Wellhead Location
Section 18, Township 1 South, Range 67 West
Adams County, Colorado

**Benzene in Groundwater
Isoconcentration Contour
Map (08/23/2019, 9/3/2019)**

**Figure
5**

FIGURE 6
NOBLE FRI 2-18 REMEDIATION SYSTEM
CUMULATIVE GROUNDWATER AND LNAPL EXTRACTION VOLUME

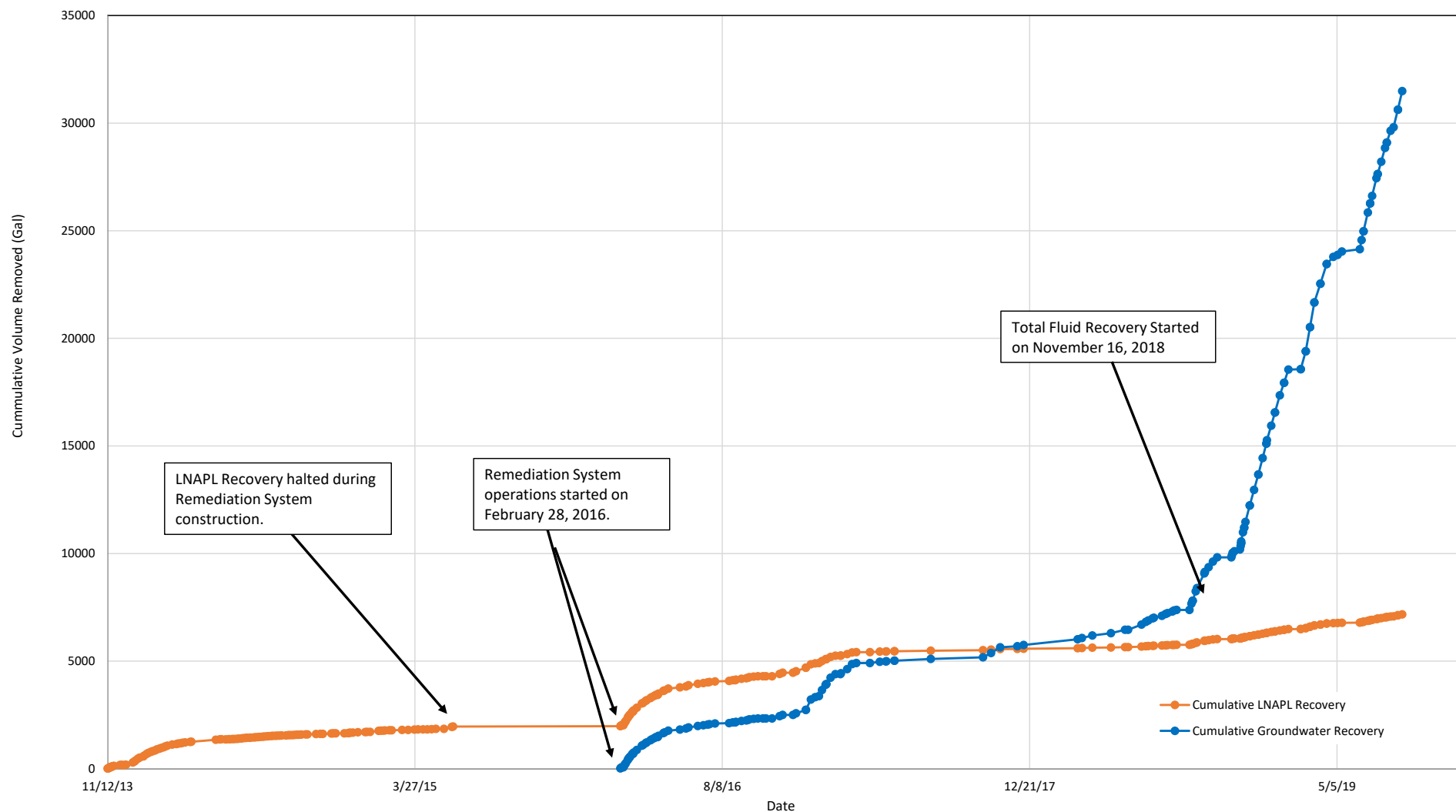


FIGURE 7
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION
TOTAL FLUIDS RECOVERY
(GALLONS PER DAY)

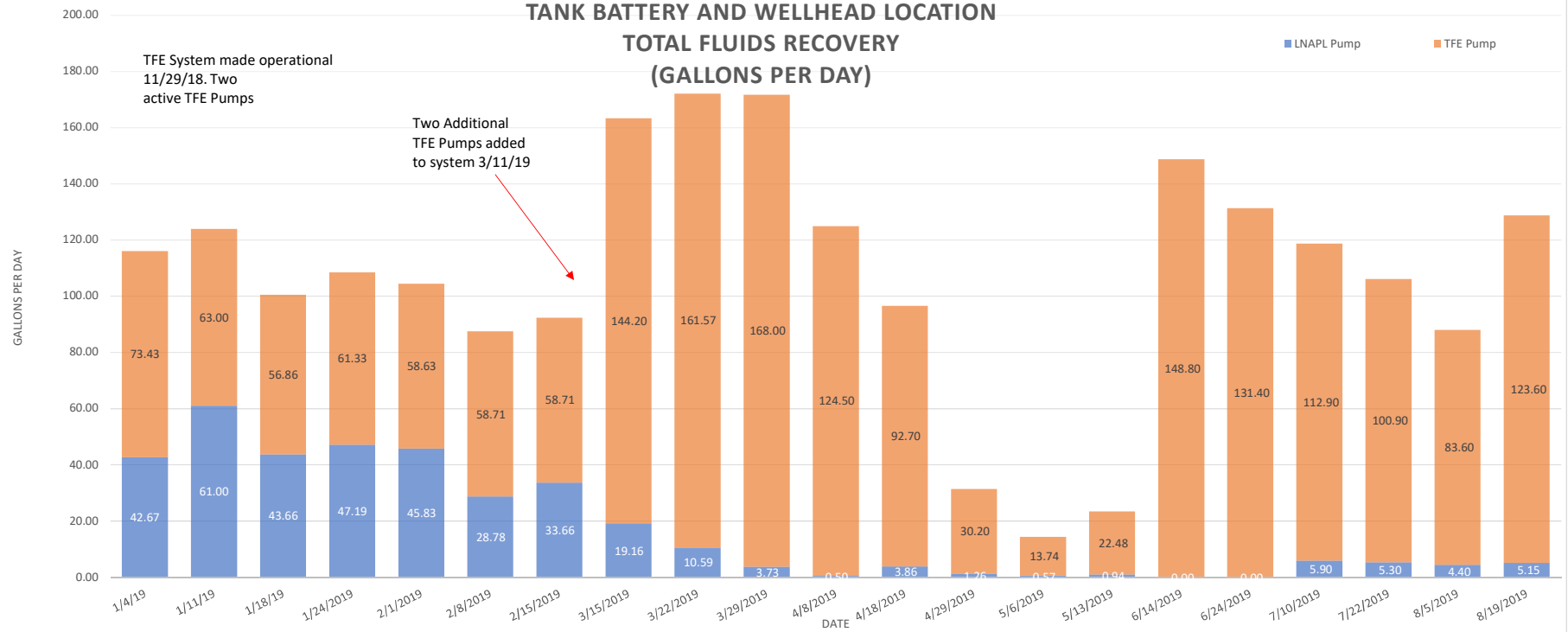


FIGURE 8
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION
GROUNDWATER DRAWDOWN GRAPH - OBSERVATION WELL SB-31

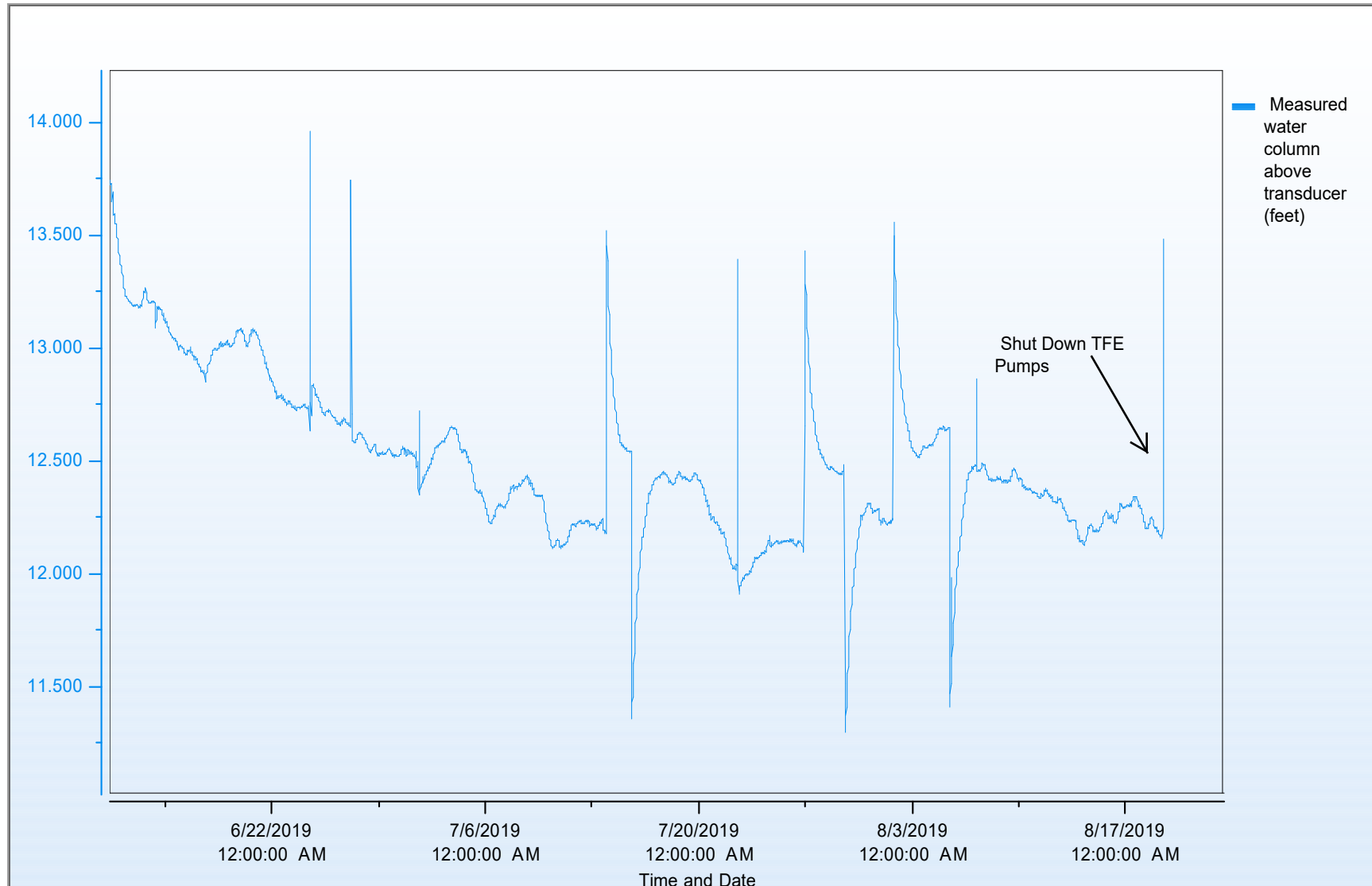


FIGURE 9
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18
TANK BATTERY AND WELLHEAD LOCATION
GROUNDWATER DRAWDOWN GRAPH - OBSERVATION WELL SB-37

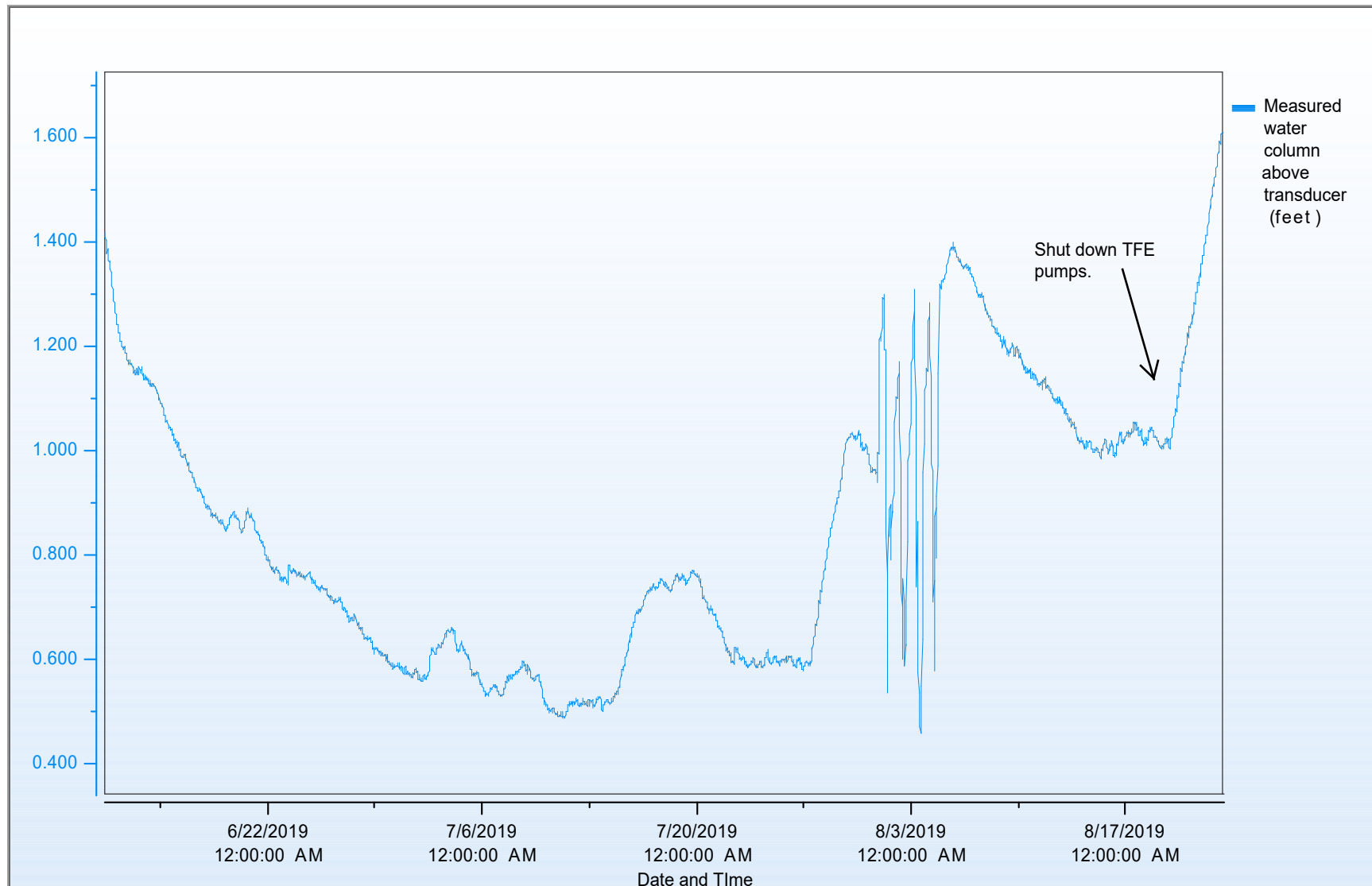


FIGURE 10
 NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18 TANK BATTERY AND WELLHEAD
 LOCATION
 LNAPL THICKNESS
 PRODUCT RECOVERY WELLS PR09-PR11, PR16, PR18 and PR25

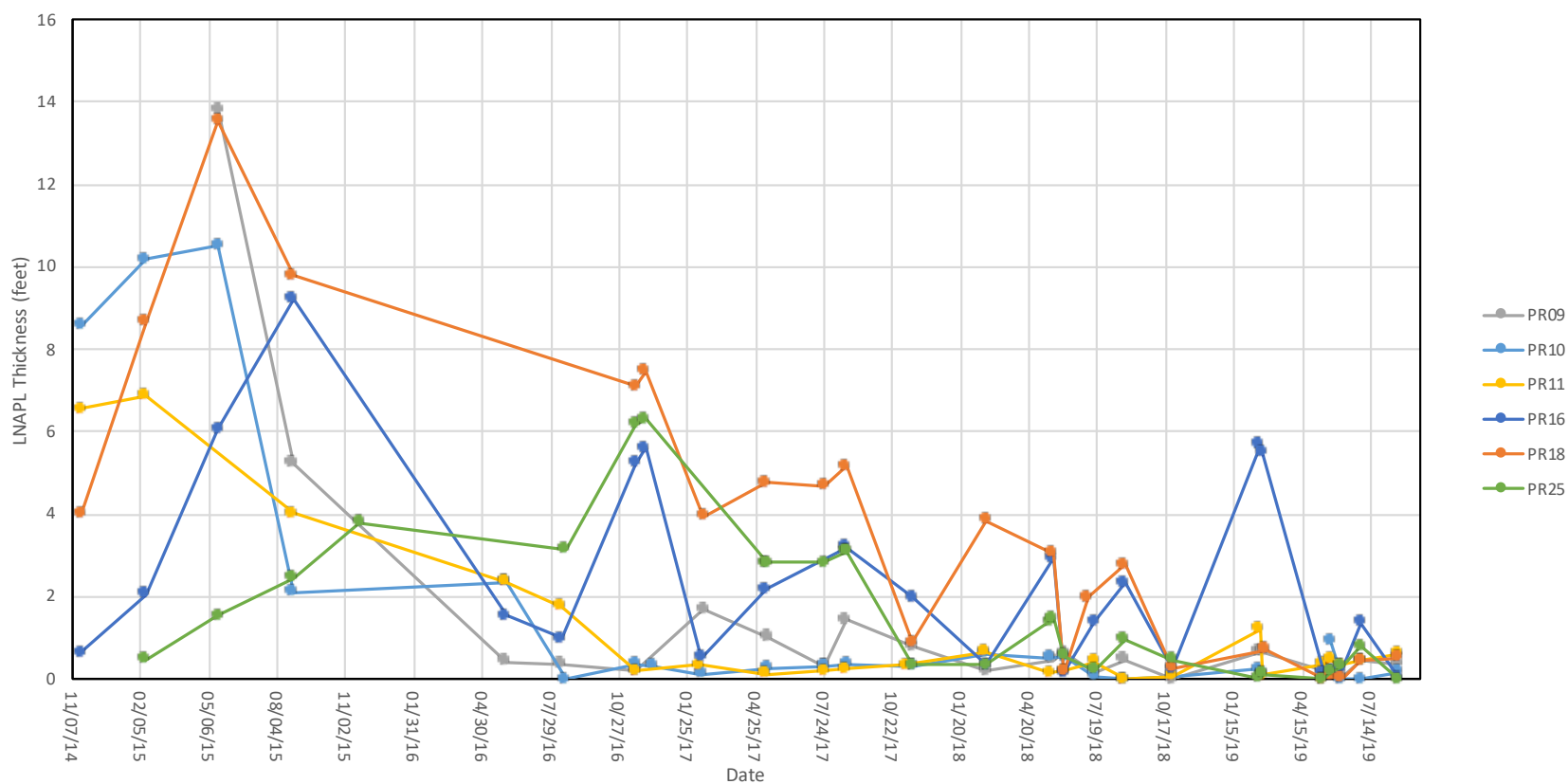


FIGURE 11
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18 TANK BATTERY AND
WELLHEAD LOCATION
LNAPL THICKNESS
PRODUCT RECOVERY WELLS PR01-PR03, PR06, PR08, and PR19

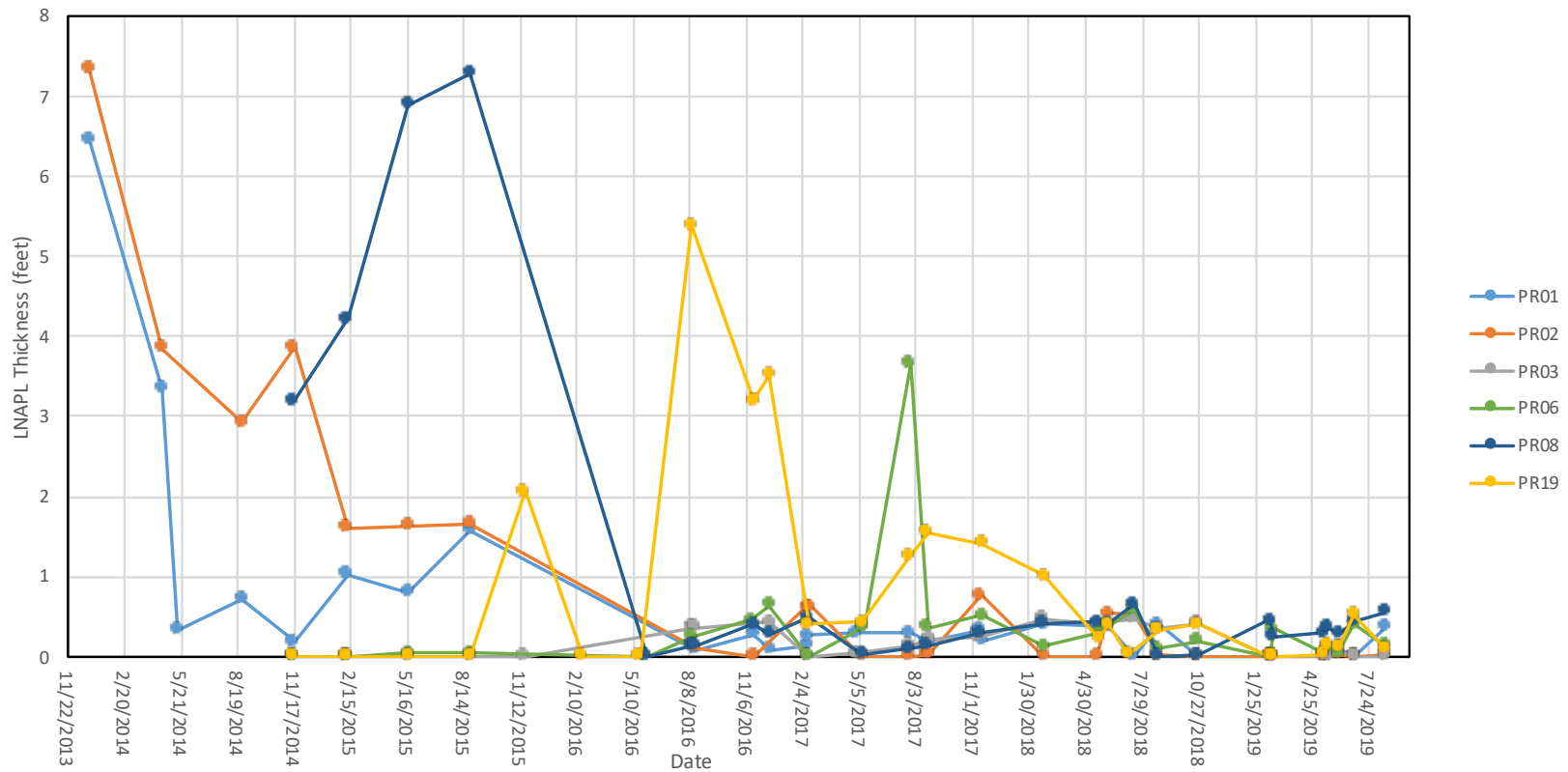


FIGURE 12
 NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18 TANK BATTERY AND WELLHEAD
 LOCATION
 LNAPL THICKNESS
 PRODUCT RECOVERY WELLS PR05, PR07, PR12, PR15 and PR26

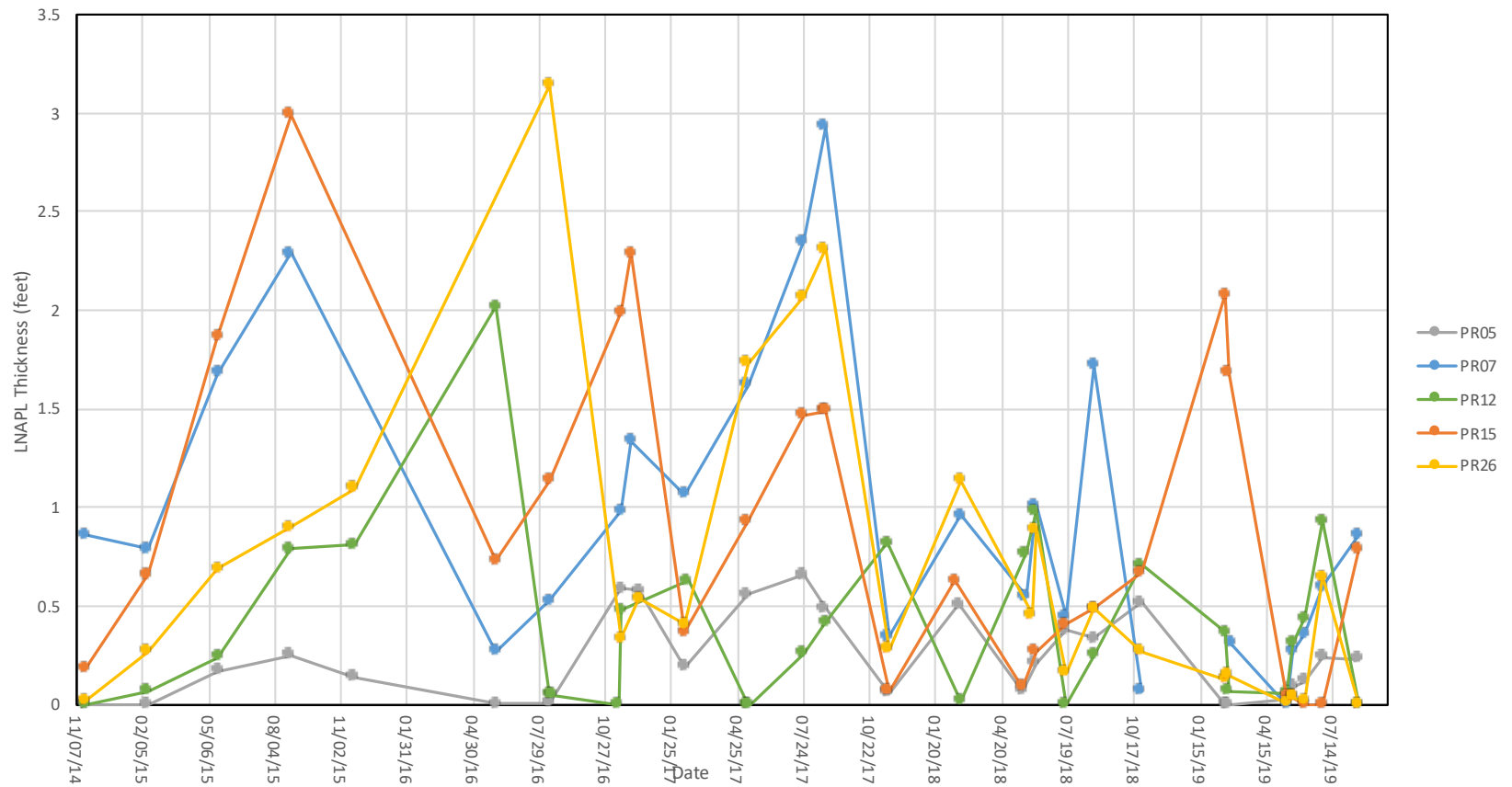


FIGURE 13
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18 TANK BATTERY AND WELLHEAD
LOCATION
LNAPL THICKNESS
PRODUCT RECOVERY WELLS PR04, PR13, PR17 and PR24

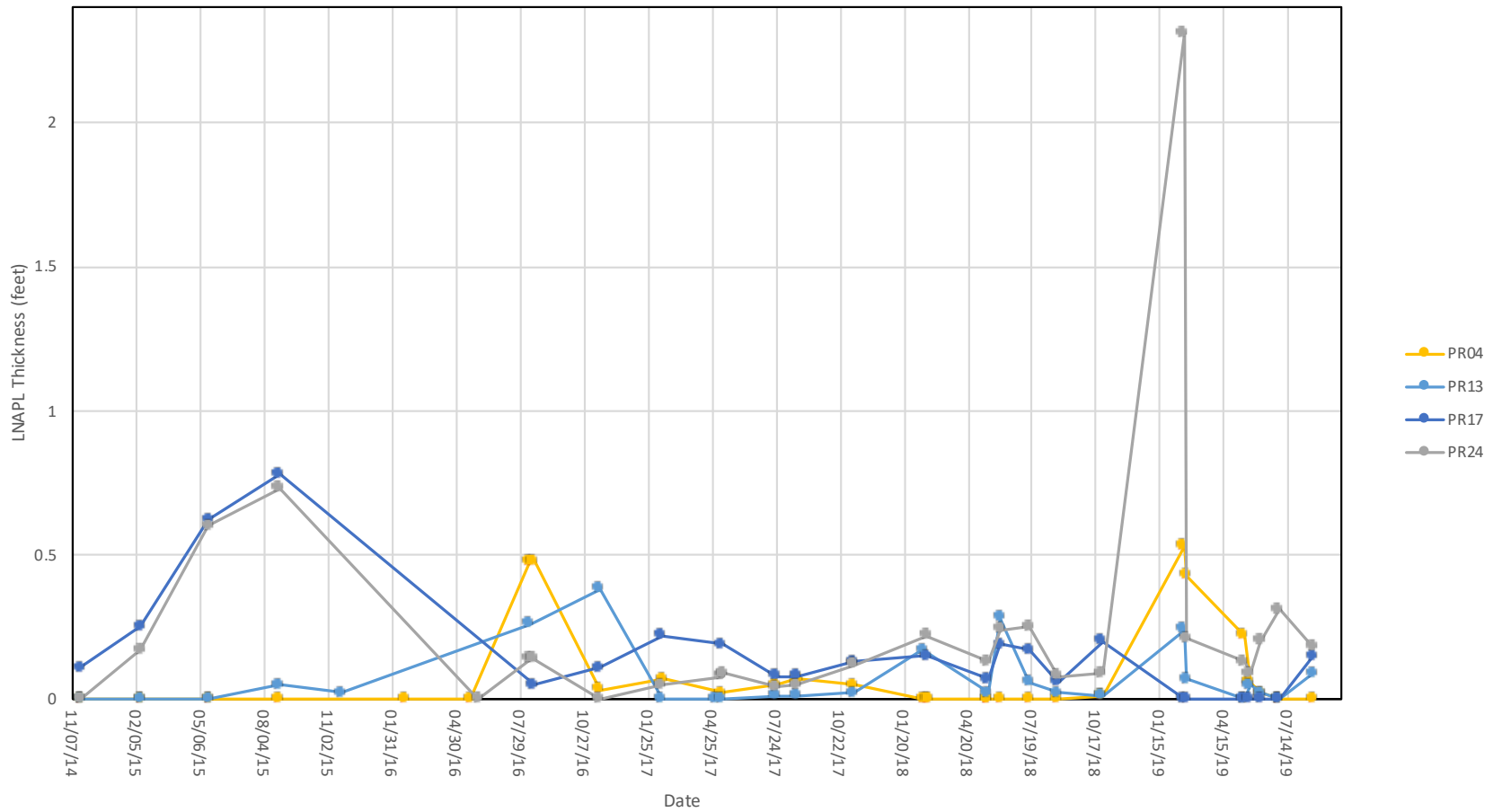
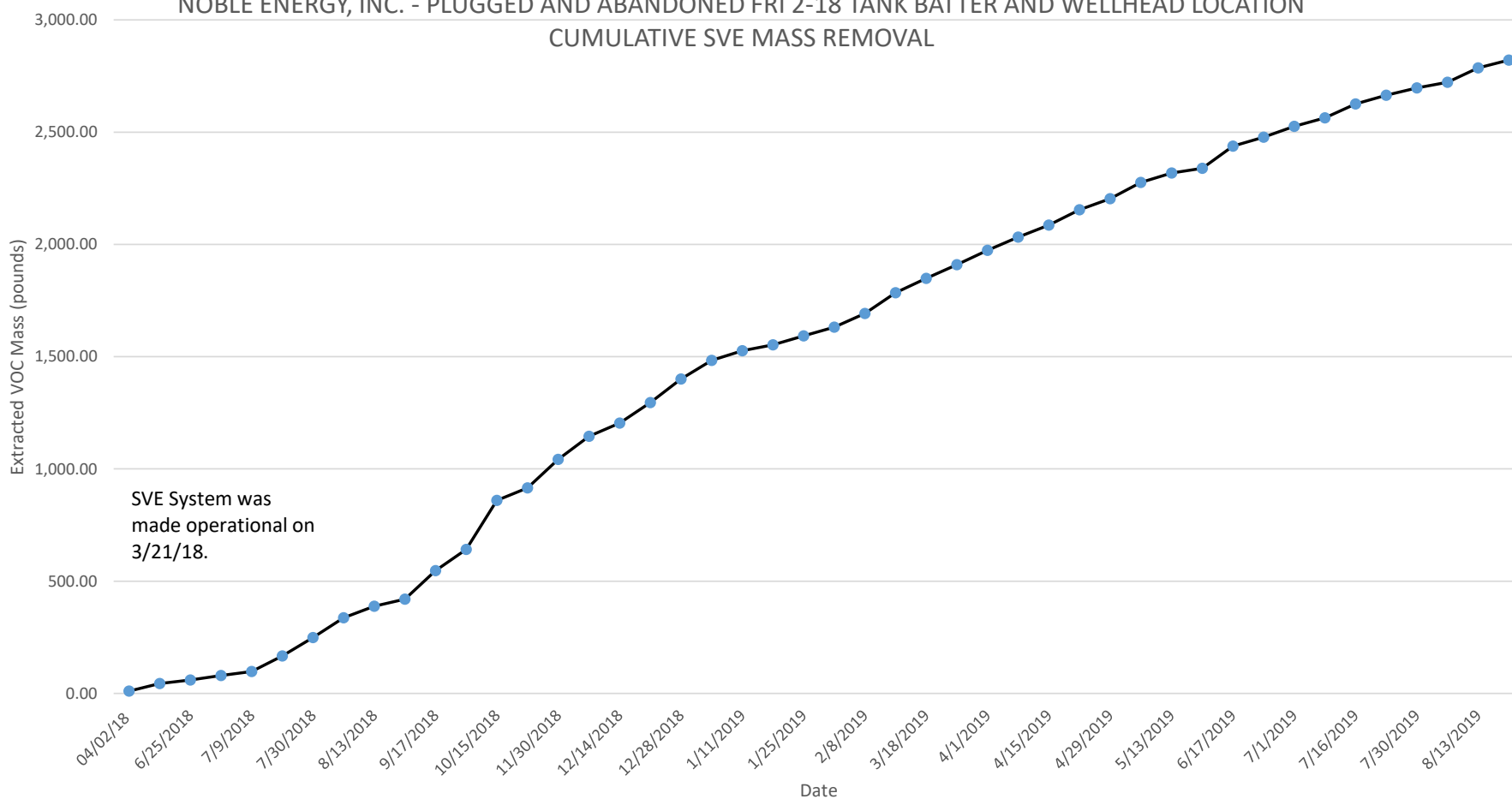


FIGURE 14
NOBLE ENERGY, INC. - PLUGGED AND ABANDONED FRI 2-18 TANK BATTER AND WELLHEAD LOCATION
CUMULATIVE SVE MASS REMOVAL



ATTACHMENT A

GROUNDWATER LABORATORY ANALYTICAL DATA REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 03, 2019

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Fri 2-18

Work Order # 1908314

Enclosed are the results of analyses for samples received by Summit Scientific on 08/26/19 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB03	1908314-01	Water	08/26/19 09:36	08/26/19 17:30
SB04	1908314-02	Water	08/26/19 09:44	08/26/19 17:30
SB07	1908314-04	Water	08/26/19 12:35	08/26/19 17:30
SB08	1908314-05	Water	08/26/19 12:45	08/26/19 17:30
SB10	1908314-06	Water	08/26/19 12:25	08/26/19 17:30
SB11	1908314-07	Water	08/26/19 09:52	08/26/19 17:30
SB12	1908314-08	Water	08/26/19 10:30	08/26/19 17:30
SB15	1908314-11	Water	08/26/19 12:15	08/26/19 17:30
SB19	1908314-13	Water	08/26/19 11:15	08/26/19 17:30
SB20	1908314-14	Water	08/26/19 11:14	08/26/19 17:30
SB22R	1908314-15	Water	08/26/19 12:05	08/26/19 17:30
SB25R	1908314-16	Water	08/26/19 11:30	08/26/19 17:30
SB27R	1908314-17	Water	08/26/19 11:35	08/26/19 17:30
SB28R	1908314-18	Water	08/26/19 11:45	08/26/19 17:30
SB36	1908314-19	Water	08/26/19 09:18	08/26/19 17:30
SB39	1908314-21	Water	08/26/19 09:30	08/26/19 17:30
Duplicate	1908314-22	Water	08/26/19 00:00	08/26/19 17:30
Trip Blank	1908314-23	Water	08/26/19 08:00	08/26/19 17:30

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

1908314.1

Page 1 of 3

Project Manager: Brandon Bruns
E-Mail: bbrunse@tasman-gco.com
Project Name: Fri 2-18
Project Number: —

www.s2scientific.com

Summit Scientific

1908314.2

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 2 of 3

Client: Noble / Tasman
Address: 6855 W 119th Ave
City/State/Zip: Broomfield / CO / 80021
Phone: 303-487-1228 Fax: _____
Sampler Name: Alison Dahl

Project Manager: Brandon Brunns
E-Mail: bbrunns@tasman-gco.com
Project Name: Fri 2-18
Project Number: -

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:										Special Instructions				
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX (8260)													
SB15	8/26/19	1215	3	X				X				X													
SB17		1110		X				X				X													
SB19		1115		X				X				X													
SB20		1114		X				X				X													
SB22R		1205		X				X				X													
SB25R		1130		X				X				X													
SB27R		1135		X				X				X													
SB28R		1145		X				X				X													
SB36		0918		X				X				X													
SB38		1605		X				X				X													

Relinquished by: <u>Alison Dahl</u>	Date/Time: <u>8/26/19 1430</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>8/26/19 1430</u>	Turn Around Time (Check)	Notes:
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>8/26/19 1730</u>	Received by: <u>[Signature]</u>	Date/Time: <u>8/26/19 1730</u>	Same Day <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>	
Relinquished by: _____	Date/Time: _____	Received in Lab by: _____	Date/Time: _____	Sample Integrity: Temperature Upon Receipt: <u>3.6</u> Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

1908314.3

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 3 of 3

Client: Noble / Tasman
Address: 6855 W 119th Ave
City/State/Zip: Broomfield / CO / 80021
Phone: 303-487-1228 Fax: _____
Sampler Name: Alison Dahl

Project Manager: Brandon Bruns
E-Mail: bbrunse@tasman-gco.com
Project Name: Fri 2-18
Project Number: —

[illegible]

Sample Receipt Checklist

1908314

S2 Work Order _____

Client: Noble/TASMAN Client Project ID: Fri 2-18Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____Matrix (check all that apply): Air Soil/Solid X Water Other: _____
(Describe)

Temp (°C)	3.6
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?				
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	X			
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
If custody seals are present, are they intact ⁽¹⁾ ?			X	
Are samples with holding times due within 48 hours sample due within 48 hours present?		X		
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		X		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	X			HCl
Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			X	
Record the pH in Comments.			X	
If dissolved metals are requested, were samples field filtered?			X	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name or Initials

Signature of Custodian

8/20/19
Date/Time

P44



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB03
1908314-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 09:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **08/26/19 09:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		95.5 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		90.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB04
1908314-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 09:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	1.8	1.0		ug/l	1	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **08/26/19 09:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		96.9 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		91.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB07
1908314-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	1300	10	ug/l	10	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
Ethylbenzene	190	10	"	10	"	"	"	"	
Xylenes (total)	810	20	"	"	"	"	"	"	

Date Sampled: **08/26/19 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		94.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB08
1908314-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	1900	100		ug/l	100	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	300	100		"	"	"	"	"	"	
Ethylbenzene	410	100		"	"	"	"	"	"	
Xylenes (total)	7200	200		"	"	"	"	"	"	

Date Sampled: **08/26/19 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		98.3 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		92.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB10
1908314-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	230	10		ug/l	10	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0		"	1	"	"	"	"	
Ethylbenzene	36	10		"	10	"	"	"	"	
Xylenes (total)	37	20		"	"	"	"	"	"	

Date Sampled: **08/26/19 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		98.0 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		90.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB11
1908314-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 09:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/26/19 09:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		96.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB12
1908314-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/26/19 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB15
1908314-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	4.4	1.0		ug/l	1	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **08/26/19 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.6 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		91.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB19
1908314-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/26/19 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		96.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB20
1908314-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 11:14**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	4.0	2.0	"	"	"	"	"	"	

Date Sampled: **08/26/19 11:14**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		94.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB22R
1908314-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	3.0	1.0	ug/l	1	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	2.2	1.0	"	"	"	"	"	"	
Xylenes (total)	12	2.0	"	"	"	"	"	"	

Date Sampled: **08/26/19 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB25R
1908314-16 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/26/19 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		94.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB27R
1908314-17 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/26/19 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		98.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB28R
1908314-18 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/26/19 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB36
1908314-19 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 09:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1908351	08/27/19	08/31/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/26/19 09:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		98.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

SB39
1908314-21 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1908352	08/27/19	08/27/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/26/19 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		72.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		82.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.9 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Brun

Reported:
09/03/19 14:50

Duplicate
1908314-22 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	2600	100	ug/l	100	1908352	08/27/19	08/28/19	EPA 8260B	
Toluene	430	100	"	"	"	"	"	"	
Ethylbenzene	560	100	"	"	"	"	"	"	
Xylenes (total)	9600	200	"	"	"	"	"	"	

Date Sampled: **08/26/19 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		77.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.5 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

Trip Blank
1908314-23 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/26/19 08:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1908352	08/27/19	08/28/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/26/19 08:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		65.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		83.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.4 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1908351 - EPA 5030 Water MS

Blank (1908351-BLK1)

Prepared: 08/27/19 Analyzed: 08/30/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.3		96.4	23-173			
Surrogate: Toluene-d8	12.3		"	13.3		92.0	20-170			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	21-167			

LCS (1908351-BS1)

Prepared: 08/27/19 Analyzed: 08/30/19

Benzene	26.5	1.0	ug/l	33.3		79.5	51-132			
Toluene	28.3	1.0	"	33.3		84.8	51-138			
Ethylbenzene	29.4	1.0	"	33.3		88.1	58-146			
m,p-Xylene	61.2	2.0	"	66.7		91.7	57-144			
o-Xylene	29.4	1.0	"	33.3		88.2	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.7		"	13.3		103	23-173			
Surrogate: Toluene-d8	12.5		"	13.3		93.9	20-170			
Surrogate: 4-Bromofluorobenzene	13.7		"	13.3		103	21-167			

Matrix Spike (1908351-MS1)

Source: 1908314-01

Prepared: 08/27/19 Analyzed: 08/30/19

Benzene	27.1	1.0	ug/l	33.3	ND	81.3	34-141			
Toluene	29.4	1.0	"	33.3	ND	88.2	27-151			
Ethylbenzene	29.5	1.0	"	33.3	ND	88.4	29-160			
m,p-Xylene	61.6	2.0	"	66.7	ND	92.4	20-166			
o-Xylene	29.5	1.0	"	33.3	ND	88.6	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.6	23-173			
Surrogate: Toluene-d8	12.5		"	13.3		94.0	20-170			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	21-167			

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1908351 - EPA 5030 Water MS

Matrix Spike Dup (1908351-MSD1)

Source: 1908314-01

Prepared: 08/27/19 Analyzed: 08/31/19

Benzene	27.0	1.0	ug/l	33.3	ND	80.9	34-141	0.518	30	
Toluene	29.4	1.0	"	33.3	ND	88.1	27-151	0.0340	30	
Ethylbenzene	29.0	1.0	"	33.3	ND	86.9	29-160	1.71	30	
m,p-Xylene	60.5	2.0	"	66.7	ND	90.7	20-166	1.83	30	
o-Xylene	29.3	1.0	"	33.3	ND	87.9	33-159	0.782	30	
Surrogate: 1,2-Dichloroethane-d4	13.7		"	13.3		103	23-173			
Surrogate: Toluene-d8	12.6		"	13.3		94.3	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.9	21-167			

Batch 1908352 - EPA 5030 Water MS

Blank (1908352-BLK1)

Prepared & Analyzed: 08/27/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.1		"	13.3		83.1	23-173			
Surrogate: Toluene-d8	12.2		"	13.3		91.7	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.0	21-167			

LCS (1908352-BS1)

Prepared & Analyzed: 08/27/19

Benzene	55.1	1.0	ug/l	50.0		110	51-132			
Toluene	58.2	1.0	"	50.0		116	51-138			
Ethylbenzene	57.2	1.0	"	50.0		114	58-146			
m,p-Xylene	118	2.0	"	100		118	57-144			
o-Xylene	59.0	1.0	"	50.0		118	53-146			
Surrogate: 1,2-Dichloroethane-d4	11.8		"	13.3		88.9	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.4	20-170			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	21-167			

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
09/03/19 14:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1908352 - EPA 5030 Water MS

Matrix Spike (1908352-MS1)		Source: 1908310-01			Prepared & Analyzed: 08/27/19					
Benzene	57.6	1.0	ug/l	50.0	ND	115	34-141			
Toluene	60.6	1.0	"	50.0	ND	121	27-151			
Ethylbenzene	60.4	1.0	"	50.0	ND	121	29-160			
m,p-Xylene	125	2.0	"	100	ND	125	20-166			
o-Xylene	61.8	1.0	"	50.0	ND	124	33-159			
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	10.7		"	13.3		80.5	23-173			
Surrogate: Toluene-d8	12.6		"	13.3		94.9	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		101	21-167			
<hr/>										
Matrix Spike Dup (1908352-MSD1)		Source: 1908310-01			Prepared & Analyzed: 08/27/19					
Benzene	59.0	1.0	ug/l	50.0	ND	118	34-141	2.42	30	
Toluene	62.7	1.0	"	50.0	ND	125	27-151	3.42	30	
Ethylbenzene	60.6	1.0	"	50.0	ND	121	29-160	0.330	30	
m,p-Xylene	125	2.0	"	100	ND	125	20-166	0.584	30	
o-Xylene	62.0	1.0	"	50.0	ND	124	33-159	0.404	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	10.8		"	13.3		80.9	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.4	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.4	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/03/19 14:50

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 04, 2019

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Fri 2-18

Work Order # 1909002

Enclosed are the results of analyses for samples received by Summit Scientific on 09/03/19 18:09. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/04/19 06:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB06	1909002-01	Water	09/03/19 09:00	09/03/19 18:09
SB13	1909002-02	Water	09/03/19 09:20	09/03/19 18:09
SB14	1909002-03	Water	09/03/19 09:30	09/03/19 18:09
SB17	1909002-04	Water	09/03/19 09:10	09/03/19 18:09
SB38	1909002-05	Water	09/03/19 08:55	09/03/19 18:09
Trip Blank	1909002-06	Water	09/03/19 00:00	09/03/19 18:09

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

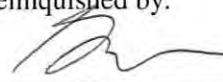
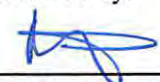
1909002

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Noble / Tasman Project Manager: Brandon Bruns, Invoice: Jacob Evans
Address: 6899 Pecos Street E-Mail: Bbruns@tasman-geo.com
City/State/Zip: Denver / CO/ 80221
Phone: 303-487-1228 Project Name: FRI 2-18
Sampler Name: GB Project Number: -

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR				
1	SB 06	9/3/19	0900	3	X				X					X						
2	SB 13		0920	3																
3	SB 14		0930	3																
4	SB 17		0910	3																
5	SB 38		0855	3																
6	TRIP BLANK	9-3-19	N/A	2										X						
7																				
8																				
9																				
10																				

Relinquished by: 	Date/Time: 9/3/19 17:45	Received by: Tasman's Lock Box	Date/Time: 9/3/19 17:45	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 9-3-19 17:45	Received by: 	Date/Time: 9-3-19 17:45	Sample Integrity: Temperature Upon Receipt: 1.3 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 1909002

Client: Tasman/Noble Client Project ID: Fri 2-18

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____

☐ ☒ ☐ ☐ ☐

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)

Temp (°C)	1.3
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same Day TAT
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

MP
Custodian Printed Name or Initials

Muri Premer
Signature of Custodian

9/3/19
Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/04/19 06:03

SB06
1909002-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/03/19 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1909017	09/03/19	09/03/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **09/03/19 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		132 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/04/19 06:03

SB13
1909002-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/03/19 09:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	3.3	1.0	ug/l	1	1909017	09/03/19	09/04/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/03/19 09:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/04/19 06:03

SB14
1909002-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/03/19 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	1.7	1.0	ug/l	1	1909017	09/03/19	09/04/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/03/19 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		126 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/04/19 06:03

SB17
1909002-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/03/19 09:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1909017	09/03/19	09/04/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/03/19 09:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		127 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/04/19 06:03

SB38
1909002-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/03/19 08:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1909017	09/03/19	09/04/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/03/19 08:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		130 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
09/04/19 06:03

Trip Blank
1909002-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/03/19 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1909017	09/03/19	09/04/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/03/19 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.7 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/04/19 06:03

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1909017 - EPA 5030 Water MS

Blank (1909017-BLK1)

Prepared: 09/03/19 Analyzed: 09/04/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	16.2		"	13.3		122	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		100	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.9	21-167			

LCS (1909017-BS1)

Prepared: 09/03/19 Analyzed: 09/04/19

Benzene	32.1	1.0	ug/l	33.3		96.3	51-132			
Toluene	32.7	1.0	"	33.3		98.2	51-138			
Ethylbenzene	31.8	1.0	"	33.3		95.4	58-146			
m,p-Xylene	59.0	2.0	"	66.7		88.4	57-144			
o-Xylene	31.2	1.0	"	33.3		93.5	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.3		102	23-173			
Surrogate: Toluene-d8	15.0		"	13.3		113	20-170			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		92.6	21-167			

Matrix Spike (1909017-MS1)

Source: 1909001-02

Prepared: 09/03/19 Analyzed: 09/04/19

Benzene	33.0	1.0	ug/l	33.3	ND	98.9	34-141			
Toluene	33.9	1.0	"	33.3	ND	102	27-151			
Ethylbenzene	33.2	1.0	"	33.3	ND	99.6	29-160			
m,p-Xylene	61.1	2.0	"	66.7	ND	91.7	20-166			
o-Xylene	32.4	1.0	"	33.3	ND	97.1	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.4		"	13.3		108	23-173			
Surrogate: Toluene-d8	14.4		"	13.3		108	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.9	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/04/19 06:03

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1909017 - EPA 5030 Water MS

Matrix Spike Dup (1909017-MSD1)	Source: 1909001-02			Prepared: 09/03/19 Analyzed: 09/04/19						
Benzene	35.6	1.0	ug/l	33.3	ND	107	34-141	7.81	30	
Toluene	36.4	1.0	"	33.3	ND	109	27-151	6.98	30	
Ethylbenzene	35.2	1.0	"	33.3	ND	105	29-160	5.73	30	
m,p-Xylene	64.8	2.0	"	66.7	ND	97.2	20-166	5.85	30	
o-Xylene	34.6	1.0	"	33.3	ND	104	33-159	6.60	30	
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.3		112	23-173			
Surrogate: Toluene-d8	14.0		"	13.3		105	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.0	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/04/19 06:03

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ATTACHMENT B

TFE PROCESS STREAM LABORATORY ANALYTICAL DATA REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 24, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

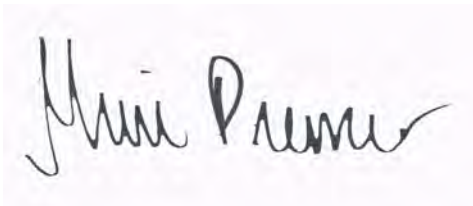
Denver, CO 80221

RE: Noble - Fri 2-18

Work Order # 1906217

Enclosed are the results of analyses for samples received by Summit Scientific on 06/17/19 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", on a light pink background.

Muri Premier For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
06/24/19 17:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TFE-001-061719	1906217-01	Water	06/17/19 09:40	06/17/19 17:30

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

1906217

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client:	Noble / Tasman	Project Manager:	Brandon Bruns, Invoice: Jacob Evans
Address:	6899 Pecos Street	E-Mail:	Bbruns@tasman-geo.com
City/State/Zip:	Denver / CO/ 80221		
Phone:	303-487-1228	Project Name:	FC: 2-18
Sampler Name:	Dillon Slade	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX								
1	TFE-001-061719	06/17/19	0940	3	X				X					X							
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
	6/17/19 1350	Tasman's Lock Box	6/17/19 1350	Same Day	72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box	06/17/19 1730		06/17/19 1730	48 hours	X	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	Temperature Upon Receipt:	
					4.3	
				Samples Intact:	Yes No	

Sample Receipt Checklist

S2 Work Order 1906217

Client: Noble / Tasman Client Project ID: FR 2-18

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

Matrix (check all that apply): _____ Air _____ Soil/Solid X Water _____ Other: _____
(Describe)

Temp (°C)	<u>4.3</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<u>X</u>			
Were all samples received intact ⁽¹⁾ ?	<u>X</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>X</u>			
If custody seals are present, are they intact ⁽¹⁾ ?			<u>X</u>	
Are samples with holding times due within 48 hours sample due within 48 hours present?		<u>X</u>		
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>X</u>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<u>X</u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		<u>X</u>		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<u>X</u>			<u>HCl</u>
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<u>X</u>	
If dissolved metals are requested, were samples field filtered?			<u>X</u>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

VE
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

06/17/19
Date/Time 1800



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
06/24/19 17:33

TFE-001-061719
1906217-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/17/19 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	7900	100		ug/l	100	1906226	06/18/19	06/22/19	EPA 8260B	
Toluene	16000	100		"	"	"	"	"	"	
Ethylbenzene	690	100		"	"	"	"	"	"	
Xylenes (total)	13000	200		"	"	"	"	"	"	

Date Sampled: **06/17/19 09:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		104 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		92.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.3 %		21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
06/24/19 17:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1906226 - EPA 5030 Water MS

Blank (1906226-BLK1)

Prepared: 06/18/19 Analyzed: 06/23/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.3		"	13.3		84.8	23-173			
Surrogate: Toluene-d8	12.3		"	13.3		92.6	20-170			
Surrogate: 4-Bromofluorobenzene	12.0		"	13.3		90.0	21-167			

LCS (1906226-BS1)

Prepared: 06/18/19 Analyzed: 06/24/19

Benzene	37.1	1.0	ug/l	33.3		111	51-132			
Toluene	38.0	1.0	"	33.3		114	51-138			
Ethylbenzene	38.9	1.0	"	33.3		117	58-146			
m,p-Xylene	77.2	2.0	"	66.7		116	57-144			
o-Xylene	40.1	1.0	"	33.3		120	53-146			
Surrogate: 1,2-Dichloroethane-d4	10.9		"	13.3		81.5	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.3	20-170			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.6	21-167			

Matrix Spike (1906226-MS1)

Source: 1906195-01

Prepared: 06/18/19 Analyzed: 06/24/19

Benzene	37.3	1.0	ug/l	33.3	ND	112	34-141			
Toluene	38.0	1.0	"	33.3	ND	114	27-151			
Ethylbenzene	39.0	1.0	"	33.3	ND	117	29-160			
m,p-Xylene	78.5	2.0	"	66.7	ND	118	20-166			
o-Xylene	40.8	1.0	"	33.3	ND	122	33-159			
Surrogate: 1,2-Dichloroethane-d4	11.2		"	13.3		83.7	23-173			
Surrogate: Toluene-d8	12.6		"	13.3		94.7	20-170			
Surrogate: 4-Bromofluorobenzene	12.0		"	13.3		90.4	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Fri 2-18

Project Number: [none]

Project Manager: Brandon Brun

Reported:

06/24/19 17:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1906226 - EPA 5030 Water MS

Matrix Spike Dup (1906226-MSD1)	Source: 1906195-01			Prepared: 06/18/19 Analyzed: 06/24/19						
Benzene	36.8	1.0	ug/l	33.3	ND	110	34-141	1.40	30	
Toluene	37.3	1.0	"	33.3	ND	112	27-151	1.91	30	
Ethylbenzene	39.5	1.0	"	33.3	ND	118	29-160	1.17	30	
m,p-Xylene	78.2	2.0	"	66.7	ND	117	20-166	0.357	30	
o-Xylene	40.7	1.0	"	33.3	ND	122	33-159	0.417	30	
Surrogate: 1,2-Dichloroethane-d4	11.2		"	13.3		84.3	23-173			
Surrogate: Toluene-d8	12.5		"	13.3		93.8	20-170			
Surrogate: 4-Bromofluorobenzene	11.7		"	13.3		88.0	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
06/24/19 17:33

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 10, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Fri 2-18

Work Order # 1907046

Enclosed are the results of analyses for samples received by Summit Scientific on 07/02/19 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/10/19 06:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TFE-001-070119	1907046-01	Water	07/01/19 09:45	07/02/19 17:30

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

1907046

S₂

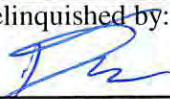

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: Noble / Tasman Project Manager: Brandon Bruns, Invoice: Jacob Evans
 Address: 6899 Pecos Street E-Mail: Bbruns@tasman-geo.com
 City/State/Zip: Denver / CO/ 80221
 Phone: 303-487-1228 Project Name: Fri 2-18
 Sampler Name: Dillon Sladr Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEX By 8260B								
1	TFE-001-070119	7/1/19	9:45	3	X				X					X							
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 7/12/19 10:00	Received by: Tasman's Lock Box	Date/Time: 7/12/19 10:00	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: 5.27 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 07/02/19 1730	Received by: 	Date/Time: 07/02/19 1730		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

1907046

Sample Receipt Checklist

S2 Work Order _____

Client: Noble/Tasman Client Project ID: Fri 2-18Shipped Via: H.D./P.U. /FedEx/UPS/USPS/Other _____ Airbill #: _____Matrix (check all that apply): _____ Air _____ Soil/Solid ✓ Water _____ Other: _____
(Describe)

Temp (°C)	<u>5.7</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<u>✓</u>			
Were all samples received intact ⁽¹⁾ ?	<u>✓</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>✓</u>			
If custody seals are present, are they intact ⁽¹⁾ ?			<u>✓</u>	
Are samples with holding times due within 48 hours sample due within 48 hours present?		<u>✓</u>		<u>Standard/TAK</u>
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u>✓</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>✓</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>✓</u>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<u>✓</u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		<u>✓</u>		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<u>✓</u>			<u>HCl</u>
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<u>✓</u>	
If dissolved metals are requested, were samples field filtered?			<u>✓</u>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.Custodian Printed Name or Initials RESignature of Custodian [Signature]Date/Time 6/7/07/19 1808



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/10/19 06:42

TFE-001-070119
1907046-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/01/19 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	6000	100		ug/l	100	1907069	07/03/19	07/09/19	EPA 8260B	
Toluene	11000	100		"	"	"	"	"	"	
Ethylbenzene	840	100		"	"	"	"	"	"	
Xylenes (total)	9400	200		"	"	"	"	"	"	

Date Sampled: **07/01/19 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		104 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		96.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.6 %		21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/10/19 06:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1907069 - EPA 5030 Water MS

Blank (1907069-BLK1)

Prepared: 07/03/19 Analyzed: 07/06/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	18.1		"	13.3		136	23-173			
Surrogate: Toluene-d8	15.0		"	13.3		113	20-170			
Surrogate: 4-Bromofluorobenzene	17.1		"	13.3		128	21-167			

LCS (1907069-BS1)

Prepared: 07/03/19 Analyzed: 07/06/19

Benzene	39.1	1.0	ug/l	50.0		78.1	51-132			
Toluene	36.0	1.0	"	50.0		72.0	51-138			
Ethylbenzene	38.2	1.0	"	50.0		76.5	58-146			
m,p-Xylene	80.7	2.0	"	100		80.7	57-144			
o-Xylene	41.2	1.0	"	50.0		82.5	53-146			
Surrogate: 1,2-Dichloroethane-d4	23.9		"	13.3		179	23-173			S-02
Surrogate: Toluene-d8	12.8		"	13.3		96.1	20-170			
Surrogate: 4-Bromofluorobenzene	16.4		"	13.3		123	21-167			

Matrix Spike (1907069-MS1)

Source: 1907058-01

Prepared: 07/03/19 Analyzed: 07/06/19

Benzene	42.6	1.0	ug/l	50.0	ND	85.2	34-141			
Toluene	36.9	1.0	"	50.0	ND	73.8	27-151			
Ethylbenzene	41.1	1.0	"	50.0	ND	82.2	29-160			
m,p-Xylene	86.3	2.0	"	100	ND	86.3	20-166			
o-Xylene	43.5	1.0	"	50.0	ND	87.0	33-159			
Surrogate: 1,2-Dichloroethane-d4	22.3		"	13.3		167	23-173			
Surrogate: Toluene-d8	12.2		"	13.3		91.8	20-170			
Surrogate: 4-Bromofluorobenzene	16.8		"	13.3		126	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/10/19 06:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1907069 - EPA 5030 Water MS

Matrix Spike Dup (1907069-MSD1)	Source: 1907058-01			Prepared: 07/03/19 Analyzed: 07/06/19						
Benzene	46.2	1.0	ug/l	50.0	ND	92.3	34-141	8.04	30	
Toluene	39.8	1.0	"	50.0	ND	79.6	27-151	7.51	30	
Ethylbenzene	45.8	1.0	"	50.0	ND	91.7	29-160	11.0	30	
m,p-Xylene	96.2	2.0	"	100	ND	96.2	20-166	10.9	30	
o-Xylene	48.2	1.0	"	50.0	ND	96.5	33-159	10.3	30	
Surrogate: 1,2-Dichloroethane-d4	23.0		"	13.3		172	23-173			
Surrogate: Toluene-d8	12.0		"	13.3		89.7	20-170			
Surrogate: 4-Bromofluorobenzene	16.7		"	13.3		125	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/10/19 06:42

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 14, 2019

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Fri 2-18

Work Order # 1908144

Enclosed are the results of analyses for samples received by Summit Scientific on 08/13/19 17:31. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/14/19 06:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TFE-001-081319	1908144-01	Water	08/13/19 09:20	08/13/19 17:31

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

1908144


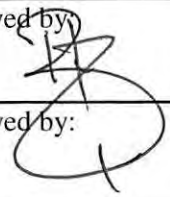
4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: Noble / Tasman Project Manager: Brandon Bruns, Invoice: Jacob Evans
 Address: 6899 Pecos Street E-Mail: Bbruns@tasman-geo.com
 City/State/Zip: Denver / CO/ 80221
 Phone: 303-487-1228 Project Name: Fri 2-18
 Sampler Name: Nestor Sapien Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR					
1	TFE-001-081319	8-13-19	0920	3	✓				✓					✓							
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 8-13-19 1130	Received by: Tasman's Lock Box	Date/Time: 8-13-19 1130	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input checked="" type="checkbox"/> Sample Integrity: Temperature Upon Receipt: 5.7 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 1720 8/13/19	Received by: 	Date/Time: 1720 8/13/19		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 1908144

Client: NOBLE / TASMAN Client Project ID: FRI 2-18

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____

☐ ☒ ☐ ☐ ☐

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)

Temp (°C)	5.7
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

RZ

Custodian Printed Name or Initials

RZ
Signature of Custodian

8/13/19

Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/14/19 06:13

TFE-001-081319
1908144-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/13/19 09:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	3300	100		ug/l	100	1908160	08/13/19	08/14/19	EPA 8260B	
Toluene	780000	100		"	"	"	"	"	"	
Ethylbenzene	340	100		"	"	"	"	"	"	
Xylenes (total)	6000	200		"	"	"	"	"	"	

Date Sampled: **08/13/19 09:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		94.1 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/14/19 06:13

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1908160 - EPA 5030 Water MS

Blank (1908160-BLK1)

Prepared: 08/13/19 Analyzed: 08/14/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.3		108	23-173			
Surrogate: Toluene-d8	14.3		"	13.3		107	20-170			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.1	21-167			

LCS (1908160-BS1)

Prepared: 08/13/19 Analyzed: 08/14/19

Benzene	24.2	1.0	ug/l	33.3		72.8	51-132			
Toluene	29.3	1.0	"	33.3		87.9	51-138			
Ethylbenzene	23.9	1.0	"	33.3		71.8	58-146			
m,p-Xylene	46.2	2.0	"	66.7		69.3	57-144			
o-Xylene	23.5	1.0	"	33.3		70.6	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.3		104	23-173			
Surrogate: Toluene-d8	15.1		"	13.3		113	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.3	21-167			

Matrix Spike (1908160-MS1)

Source: 1908143-01

Prepared: 08/13/19 Analyzed: 08/14/19

Benzene	24.6	1.0	ug/l	33.3	ND	73.8	34-141			
Toluene	29.0	1.0	"	33.3	ND	87.1	27-151			
Ethylbenzene	25.5	1.0	"	33.3	ND	76.6	29-160			
m,p-Xylene	49.6	2.0	"	66.7	ND	74.4	20-166			
o-Xylene	25.4	1.0	"	33.3	ND	76.3	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.3		111	23-173			
Surrogate: Toluene-d8	14.6		"	13.3		109	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.5	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Brun

Reported:
08/14/19 06:13

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1908160 - EPA 5030 Water MS

Matrix Spike Dup (1908160-MSD1)	Source: 1908143-01			Prepared: 08/13/19 Analyzed: 08/14/19						
Benzene	25.2	1.0	ug/l	33.3	ND	75.6	34-141	2.33	30	
Toluene	31.0	1.0	"	33.3	ND	93.0	27-151	6.57	30	
Ethylbenzene	24.3	1.0	"	33.3	ND	72.8	29-160	5.02	30	
m,p-Xylene	53.0	2.0	"	66.7	ND	79.4	20-166	6.49	30	
o-Xylene	27.9	1.0	"	33.3	ND	83.8	33-159	9.30	30	
Surrogate: 1,2-Dichloroethane-d4	13.9		"	13.3		104	23-173			
Surrogate: Toluene-d8	14.0		"	13.3		105	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.4	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Fri 2-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/14/19 06:13

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ATTACHMENT C

SVE EMISSIONS LABORATORY ANALYTICAL DATA REPORTS

June 13, 2019

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Tasman Geosciences- Arvada, CO

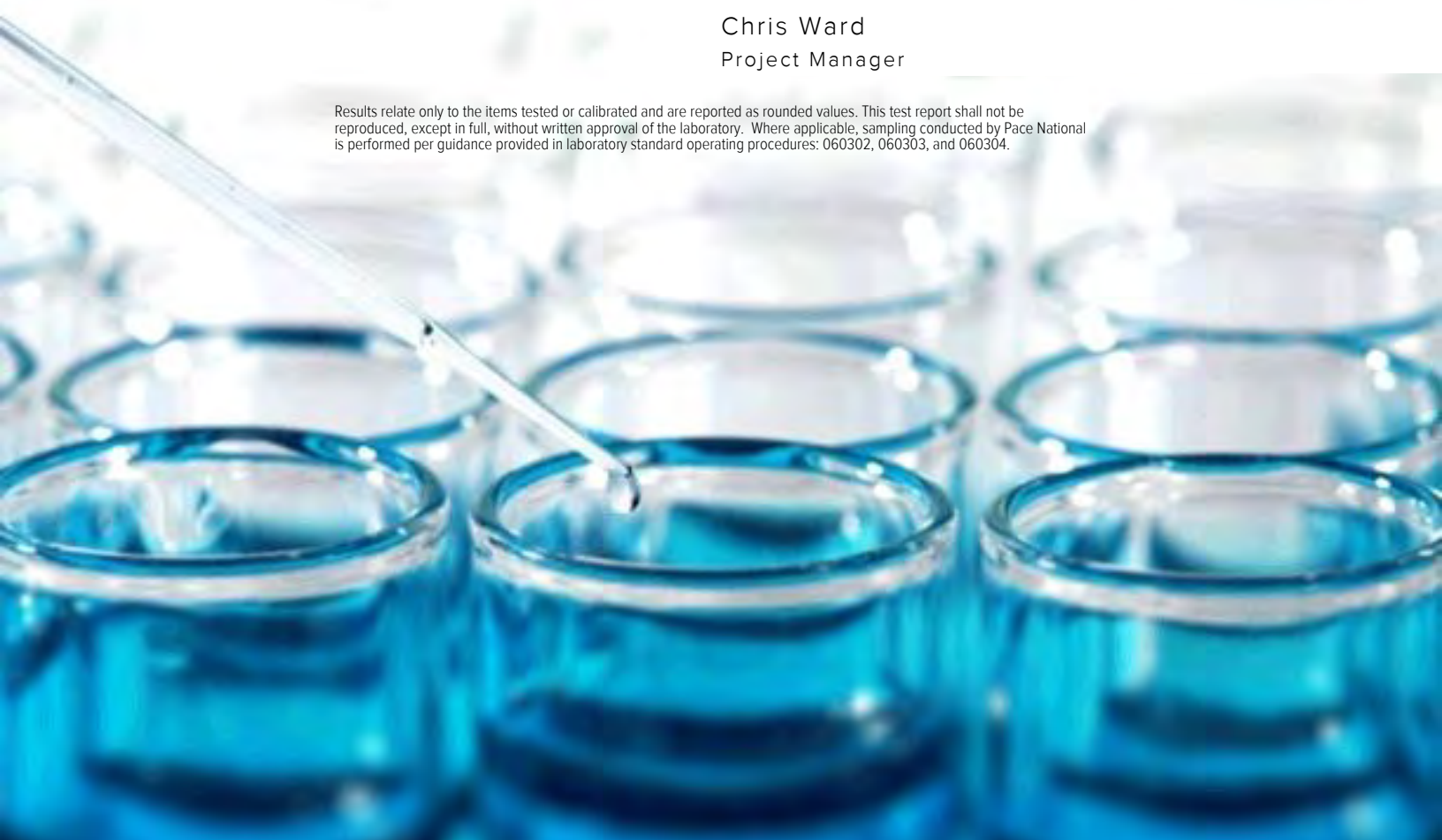
Sample Delivery Group: L1107333
Samples Received: 06/11/2019
Project Number: FRI 2-18
Description: Noble: Fri 2-18
Site: FRI 2-18
Report To: Kevin Walter
6899 Pecos Street, Unit C
Denver, CO 80221

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
FRU 2/18/V001-061019 L1107333-01	5	
Qc: Quality Control Summary	6	⁴ Cn
Volatile Organic Compounds (MS) by Method M18-Mod	6	⁵ Sr
Gl: Glossary of Terms	7	
Al: Accreditations & Locations	8	⁶ Qc
Sc: Sample Chain of Custody	9	⁷ Gl
		⁸ Al
		⁹ Sc

FRU 2/18/V001-061019 L1107333-01 Air

Collected by
Kevin Walter

Collected date/time
06/10/19 15:30

Received date/time
06/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method M18-Mod	WG1295037	400	06/12/19 18:16	06/12/19 18:16	DWR	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



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

Chris Ward
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method M18-Mod

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	80.0	256	865	2760		400	WG1295037
Toluene	108-88-3	92.10	80.0	301	3720	14000		400	WG1295037
Ethylbenzene	100-41-4	106	80.0	347	156	676		400	WG1295037
m&p-Xylene	1330-20-7	106	160	694	2760	12000		400	WG1295037
o-Xylene	95-47-6	106	80.0	347	615	2670		400	WG1295037
TPH (GC/MS) Low Fraction	8006-61-9	101	20000	82600	103000	426000		400	WG1295037
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.4				WG1295037

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3420542-3 06/12/19 11:28

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
Toluene	U		0.0499	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
TPH (GC/MS) Low Fraction	U		6.91	50.0
(S) 1,4-Bromofluorobenzene	92.1			60.0-140

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3420542-1 06/12/19 10:02 • (LCSD) R3420542-2 06/12/19 10:44

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	3.75	4.14	4.17	111	111	70.0-130			0.610	25
Toluene	3.75	4.09	4.13	109	110	70.0-130			0.822	25
Ethylbenzene	3.75	4.06	4.16	108	111	70.0-130			2.65	25
m&p-Xylene	7.50	8.00	8.15	107	109	70.0-130			1.89	25
o-Xylene	3.75	3.99	4.05	106	108	70.0-130			1.38	25
TPH (GC/MS) Low Fraction	203	215	218	106	108	70.0-130			1.24	25
(S) 1,4-Bromofluorobenzene				95.8	96.0	60.0-140				



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gi

8 Ai

9 Sc



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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

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



Tasman Geosciences
6899 Pecos St. Unit C
Denver, CO 80221

Billing Information:

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:

Kevin Walter

Email To:

kwalter@tasman-geo.com

Project

Description: Noble: Fri 2-18

City/State

Collected: Thornton, CO

Phone: 303-487-1228

Client Project #

Lab Project #

Fax:

Fri 2-18

Collected by (print):

Kevin Walter

Site/Facility ID #

P.O. #

FRI 2-18

Collected by (signature):

Rush? (Lab MUST Be Notified)

Same Day Five Day
Next Day 5 Day (Rad Only)
☒ Two Day 10 Day (Rad Only)
Three Day

Quote #

Date Results Needed

Immediately
Packed on Ice N ☒ Y

No.
of
Cntrs

TEDLAR - BTEX+TPH(C6-C10)

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

Fri 2-18-Vol-061019

-

Air

-

6/10/19 1530

X

Fri 2-18-Vol-061019B

-

Air

-

6/10/19 1532

X

Remarks

Sample # (lab only)

-01

hold

RAD SCREEN: <0.5 mR/hr

* Matrix:

SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Only Run 1 Sample.

Samples returned via:

UPS FedEx Courier

pH Temp

Flow Other

Tracking # 4510 1667 3610

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
If Applicable
VOA Zero Headspace: ☐ Y ☐ N
Preservation Correct/Checked: ☐ Y ☐ N

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Trip Blank Received: Yes ☒ No ☐
HCL/MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C Bottles Received: ☒

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 6/11/19 Time: 8:45

Hold:

Condition:
NCF / OK

June 20, 2019

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Tasman Geosciences- Arvada, CO

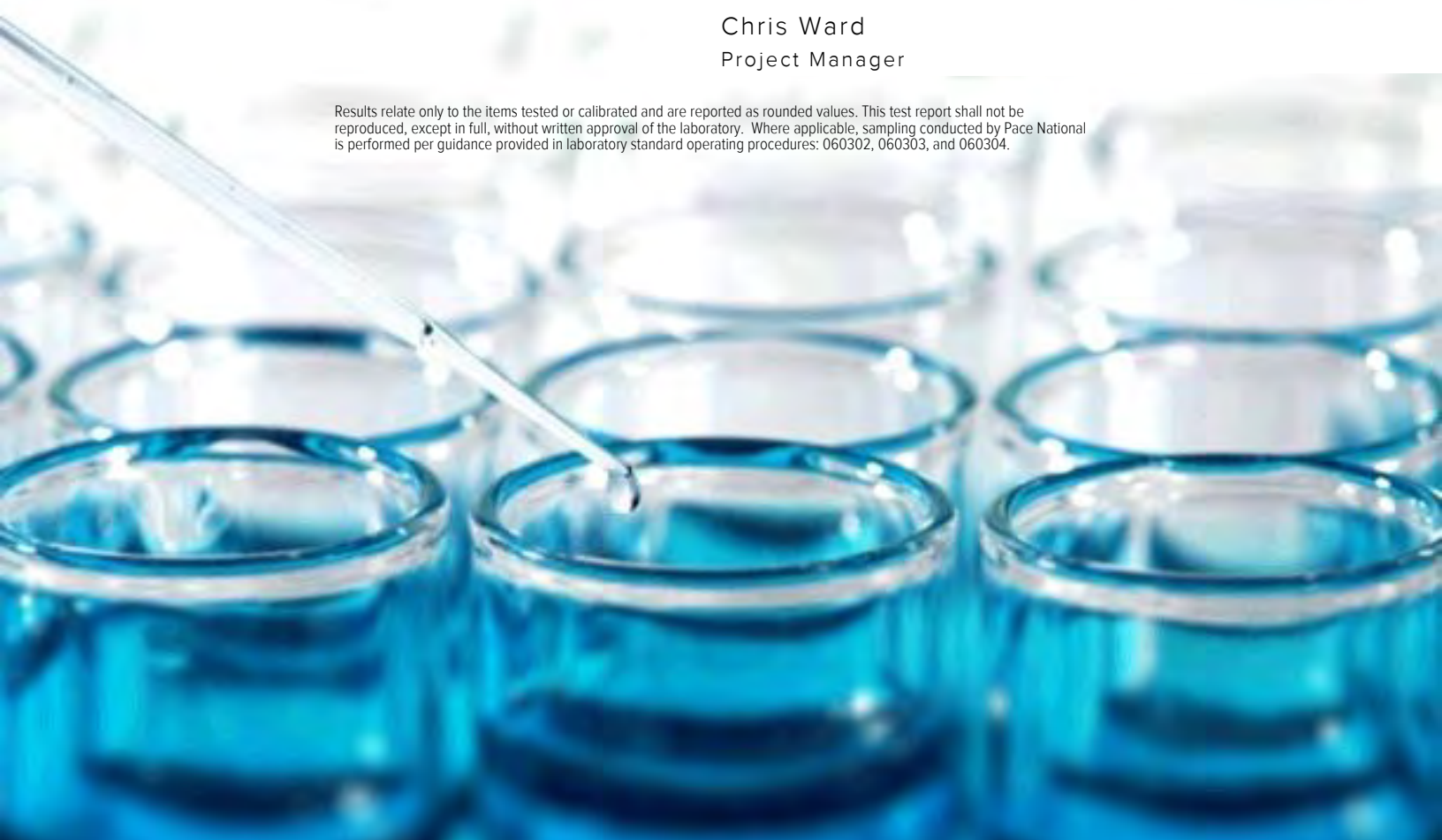
Sample Delivery Group: L1109921
Samples Received: 06/18/2019
Project Number: NOBLE FRI 2-18
Description:
Site: FRI 2-18
Report To: Kevin Walter
6899 Pecos Street, Unit C
Denver, CO 80221

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
FRI 2-18-V001-061719 L1109921-01	5	
Qc: Quality Control Summary	6	⁴ Cn
Volatile Organic Compounds (MS) by Method M18-Mod	6	⁵ Sr
Gl: Glossary of Terms	8	
Al: Accreditations & Locations	9	⁶ Qc
Sc: Sample Chain of Custody	10	⁷ Gl
		⁸ Al
		⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



FRI 2-18-V001-061719 L1109921-01 Air

Collected by
Dillon Slade

Collected date/time
06/17/19 09:35

Received date/time
06/18/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method M18-Mod	WG1298346	100	06/19/19 14:08	06/19/19 14:08	AMC	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method M18-Mod	WG1299139	1000	06/20/19 12:51	06/20/19 12:51	AMC	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Tasman Geosciences- Arvada, CO

PROJECT:

NOBLE FRI 2-18

SDG:

L1109921

DATE/TIME:

06/20/19 15:02

PAGE:

3 of 10



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

Chris Ward
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method M18-Mod

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	20.0	63.9	1260	4030		100	WG1298346
Toluene	108-88-3	92.10	200	753	4530	17100		1000	WG1299139
Ethylbenzene	100-41-4	106	20.0	86.7	256	1110		100	WG1298346
m&p-Xylene	1330-20-7	106	40.0	173	3870	16800		100	WG1298346
o-Xylene	95-47-6	106	20.0	86.7	871	3780		100	WG1298346
TPH (GC/MS) Low Fraction	8006-61-9	101	5000	20700	250000	1030000		100	WG1298346
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		175		J1		WG1298346
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		103				WG1299139

Sample Narrative:

L1109921-01 WG1298346: Surrogate failure due to matrix interference.

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3422482-3 06/19/19 10:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
TPH (GC/MS) Low Fraction	12.8	⌵	6.91	50.0
(S) 1,4-Bromofluorobenzene	98.8			60.0-140

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

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

(LCS) R3422482-1 06/19/19 09:01 • (LCSD) R3422482-2 06/19/19 09:38

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Benzene	3.75	3.84	3.85	102	103	70.0-130			0.216	25
Ethylbenzene	3.75	4.01	3.99	107	106	70.0-130			0.547	25
m&p-Xylene	7.50	7.92	7.92	106	106	70.0-130			0.0804	25
o-Xylene	3.75	3.94	3.94	105	105	70.0-130			0.0399	25
TPH (GC/MS) Low Fraction	203	212	210	105	104	70.0-130			0.865	25
(S) 1,4-Bromofluorobenzene				100	100	60.0-140				

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3422972-3 06/20/19 11:00

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ppbv		ppbv	ppbv
Toluene	U		0.0499	0.200
(S) 1,4-Bromofluorobenzene	96.2			60.0-140

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3422972-1 06/20/19 09:30 • (LCSD) R3422972-2 06/20/19 10:14

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%
Toluene	3.75	4.41	4.34	118	116	70.0-130			1.54	25
(S) 1,4-Bromofluorobenzene				99.0	99.5	60.0-140				



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gi

8 Ai

9 Sc



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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

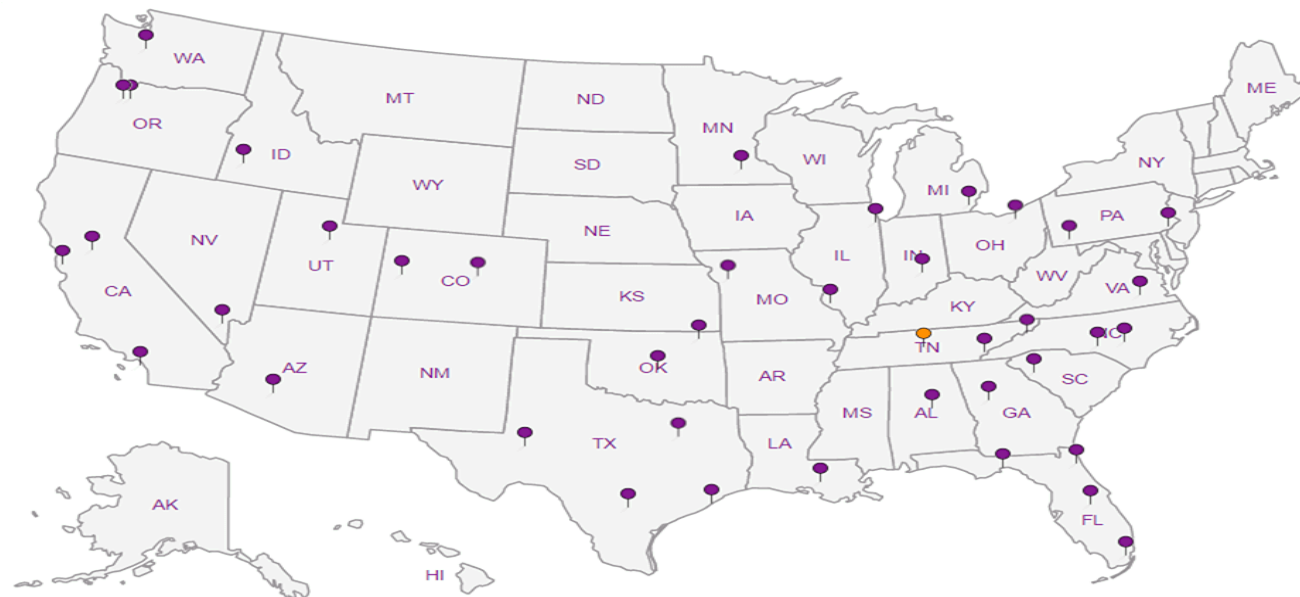
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

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



Tasman Geosciences
6899 Pecos St. Unit C
Denver, CO 80221

Billing Information:

Tasman Geosciences
6899 Pecos Street
Unit C
Denver CO

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 4



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to: Kevin Walter

Email To: KWalter@TasmanGeo.com

Project Description: Noble Fri 2-18

City/State Collected: Thornton CO

Phone: 303-487-1228
Fax:

Client Project #
Noble Fri 2-18

Lab Project #
Fri 2-18

Collected by (print): Dillon Slade

Site/Facility ID #
Fri 2-18

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

Date Results Needed

Immediately Packed on Ice N Y

Same Day Five Day
Next Day 5 Day (Rad Only)
☒ Two Day 10 Day (Rad Only)
Three Day

No.
of
Cntrs

TEDLAR - BTEX+TPH(C6-C10)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
Fri 2-18-U001-061719		Air		6/17/19	0935	1
Fri 2-18-U001-061719B		Air		6/17/19	0937	1

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: Hold second sample unless 1 bag is compromised

RAD SCREEN: <0.5 mR/hr

pH Temp

Flow Other

Samples returned via:
UPS FedEx Courier

Tracking # 4794 8830 2553

Relinquished by: (Signature)

Date: 6/17/19 Time: 1423

Received by: (Signature)

Trip Blank Received: Yes/No
HCL Y MeOH
TBR

Relinquished by: (Signature)

Date: 6/17/19 Time: 1730

Received by: (Signature)

Temp: °C Bottles Received: 2
Amb

Relinquished by: (Signature)

Date: Time:

Received for lab by: (Signature)

Date: 6/18/19 Time: 0900

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

If preservation required by Login: Date/Time

Hold: Condition:
NCF / OK

June 27, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Tasman Geosciences- Arvada, CO

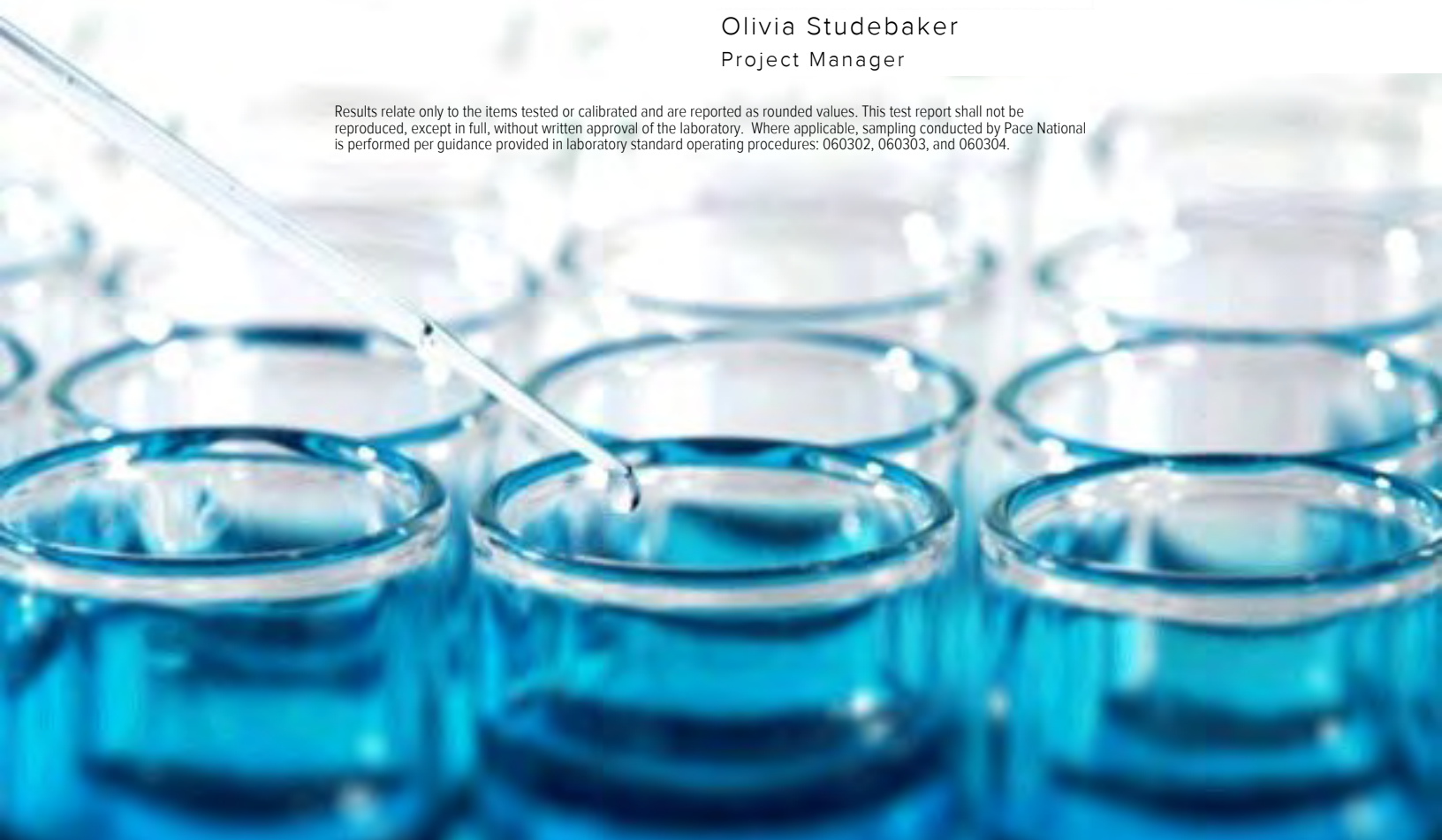
Sample Delivery Group: L1112292
Samples Received: 06/25/2019
Project Number: NOBLE FRI 2-18
Description: NOBLE FRI 2-18
Site: FRI 2-18
Report To: Kevin Walter
6899 Pecos Street, Unit C
Denver, CO 80221

Entire Report Reviewed By:



Olivia Studebaker
Project Manager

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Cp: Cover Page	1	¹ Cp
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Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
FRI 2-18-V001-062419 L1112292-01	5	
Qc: Quality Control Summary	6	⁴ Cn
Volatile Organic Compounds (MS) by Method M18-Mod	6	⁵ Sr
Gl: Glossary of Terms	7	
Al: Accreditations & Locations	8	⁶ Qc
Sc: Sample Chain of Custody	9	⁷ Gl
		⁸ Al
		⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



FRI 2-18-V001-062419 L1112292-01 Air

Collected by
Dillion Slade

Collected date/time
06/24/19 11:00

Received date/time
06/25/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method M18-Mod	WG1302394	100	06/26/19 16:25	06/26/19 16:25	AMC	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Tasman Geosciences- Arvada, CO

PROJECT:

NOBLE FRI 2-18

SDG:

L1112292

DATE/TIME:

06/27/19 10:49

PAGE:

3 of 9



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

Olivia Studebaker
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method M18-Mod

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	20.0	63.9	945	3020		100	WG1302394
Toluene	108-88-3	92.10	20.0	75.3	4630	17400		100	WG1302394
Ethylbenzene	100-41-4	106	20.0	86.7	200	868		100	WG1302394
m&p-Xylene	1330-20-7	106	40.0	173	3480	15100		100	WG1302394
o-Xylene	95-47-6	106	20.0	86.7	781	3390		100	WG1302394
TPH (GC/MS) Low Fraction	8006-61-9	101	5000	20700	103000	424000		100	WG1302394
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		109				WG1302394

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3425003-3 06/26/19 14:47

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
Toluene	U		0.0499	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
TPH (GC/MS) Low Fraction	U		6.91	50.0
(S) 1,4-Bromofluorobenzene	94.7			60.0-140

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

(LCS) R3425003-1 06/26/19 13:10 • (LCSD) R3425003-2 06/26/19 13:55

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	3.75	4.34	4.32	116	115	70.0-130			0.416	25
Toluene	3.75	4.22	4.18	112	111	70.0-130			0.844	25
Ethylbenzene	3.75	4.24	4.22	113	113	70.0-130			0.376	25
m&p-Xylene	7.50	8.14	8.16	108	109	70.0-130			0.282	25
o-Xylene	3.75	4.15	4.17	111	111	70.0-130			0.404	25
TPH (GC/MS) Low Fraction	203	219	217	108	107	70.0-130			0.869	25
(S) 1,4-Bromofluorobenzene				98.5	98.4	60.0-140				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gi

8 Ai

9 Sc



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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

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



Tasman Geosciences
6899 Pecos St. Unit C
Denver, CO 80221

Billing Information:

Tasman Geosciences

Pres
Chk

Analysis / Container / Preservative

Chain of Custody

Page F of 2



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:

Kevin Walter

Email To:

kwalter@tasman-geo.com

Project

Description: Noble Fri 2-18

City/State

Collected: Thornton CO

Phone: 303-487-1228

Fax:

Client Project #

Noble Fri 2-18

Lab Project #

Fri 2-18

Collected by (print):

Dillon Slade

Site/Facility ID #

Fri 2-18

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

☐ Same Day ☐ Five Day
☒ Next Day ☐ 5 Day (Rad Only)
☒ Two Day ☐ 10 Day (Rad Only)
☐ Three Day

Quote #

Date Results Needed

Immediately

Packed on Ice N ☐ Y ☐

No.
of
Cntrs

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

TEDLAR - BTEX+TPH(C6-C10)

Fri 2-18-U001-062419

G

Air

6/24/19

1100

1

X

Fri 2-18-U001-062419B

G

Air

6/24/19

1102

1

X

L# 1112292

F054

Acctnum: TASGEOACO

Template:

Prelogin:

TSR: Chris Ward

PB:

Shipped Via:

Remarks

Sample # (lab only)

01

Hold

* Matrix:

SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: Hold second sample unless bag is compromised

RAD SCREEN: <0.5 mR/hr

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:

☐ UPS ☐ FedEx ☐ Courier

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact: ☒ NP ☐ Y ☐ N
COC Signed/Accurate: ☒ ☐ N
Bottles arrive intact: ☒ ☐ N
Correct bottles used: ☒ ☐ N
Sufficient volume sent: ☒ ☐ N
If Applicable
VOA Zero Headspace: ☐ Y ☐ N
Preservation Correct/Checked: ☐ Y ☐ N

Relinquished by: (Signature)

Date:

6/24/19

Time:

1603

Received by: (Signature)

Trip Blank Received: Yes ☒ No ☐
HCL/MeOH
TBR

Relinquished by: (Signature)

Date:

6/24

Time:

1730

Received by: (Signature)

Temp: °C
Amb °C 2

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 6/25/19 Time: 830

Hold:

Condition:
NCF / OK

July 05, 2019

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Tasman Geosciences- Arvada, CO

Sample Delivery Group: L1114728

Samples Received: 07/02/2019

Project Number:

Description: Noble: Fri 2-18

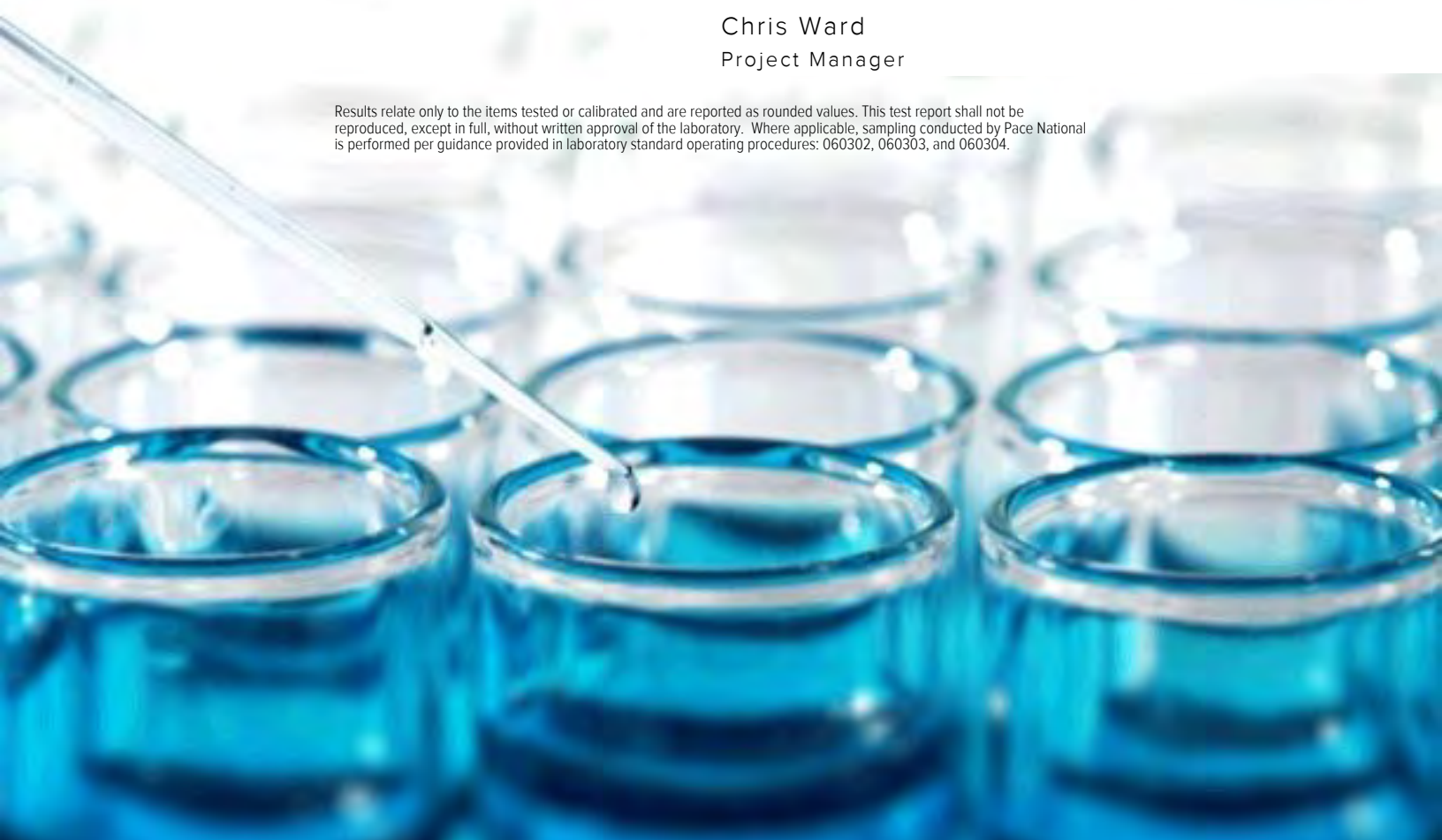
Report To: Kevin Walter
6899 Pecos Street, Unit C
Denver, CO 80221

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





Cp: Cover Page	1	<div><div>1</div>Cp</div>
Tc: Table of Contents	2	
Ss: Sample Summary	3	<div><div>2</div>Tc</div>
Cn: Case Narrative	4	
Sr: Sample Results	5	<div><div>3</div>Ss</div>
FRI 2-18-V001-070119 L1114728-01	5	
Qc: Quality Control Summary	6	<div><div>4</div>Cn</div>
Volatile Organic Compounds (MS) by Method M18-Mod	6	<div><div>5</div>Sr</div>
Gl: Glossary of Terms	8	
Al: Accreditations & Locations	9	<div><div>6</div>Qc</div>
Sc: Sample Chain of Custody	10	<div><div>7</div>Gl</div>
		<div><div>8</div>Al</div>
		<div><div>9</div>Sc</div>



FRI 2-18-V001-070119 L1114728-01 Air

Collected by
Kevin Walter

Collected date/time
07/01/19 09:35

Received date/time
07/02/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method M18-Mod	WG1305846	80	07/03/19 22:22	07/03/19 22:22	AMC	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method M18-Mod	WG1306474	1000	07/04/19 17:24	07/04/19 17:24	MBF	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



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

Chris Ward
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method M18-Mod

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	16.0	51.1	873	2790		80	WG1305846
Toluene	108-88-3	92.10	200	753	4030	15200		1000	WG1306474
Ethylbenzene	100-41-4	106	16.0	69.4	181	785		80	WG1305846
m&p-Xylene	1330-20-7	106	32.0	139	3140	13600		80	WG1305846
o-Xylene	95-47-6	106	16.0	69.4	645	2800		80	WG1305846
TPH (GC/MS) Low Fraction	8006-61-9	101	4000	16500	119000	491000		80	WG1305846
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		111				WG1305846
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		102				WG1306474

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3427353-3 07/03/19 11:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
TPH (GC/MS) Low Fraction	24.9	⬇	6.91	50.0
(S) 1,4-Bromofluorobenzene	98.4			60.0-140

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

(LCS) R3427353-1 07/03/19 09:28 • (LCSD) R3427353-2 07/03/19 10:21

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Benzene	3.75	4.36	4.27	116	114	70.0-130			2.07	25
Ethylbenzene	3.75	4.36	4.31	116	115	70.0-130			1.14	25
m&p-Xylene	7.50	8.69	8.67	116	116	70.0-130			0.214	25
o-Xylene	3.75	4.30	4.29	115	114	70.0-130			0.294	25
TPH (GC/MS) Low Fraction	203	234	235	116	116	70.0-130			0.110	25
(S) 1,4-Bromofluorobenzene				99.5	100	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3427651-3 07/04/19 08:48

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ppbv		ppbv	ppbv
Toluene	U		0.0499	0.200
(S) 1,4-Bromofluorobenzene	94.9			60.0-140

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3427651-1 07/04/19 07:18 • (LCSD) R3427651-2 07/04/19 08:02

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%
Toluene	3.75	4.49	4.41	120	118	70.0-130			1.86	25
(S) 1,4-Bromofluorobenzene				99.1	98.7	60.0-140				



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
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Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
---	---

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gi

8 Ai

9 Sc



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Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

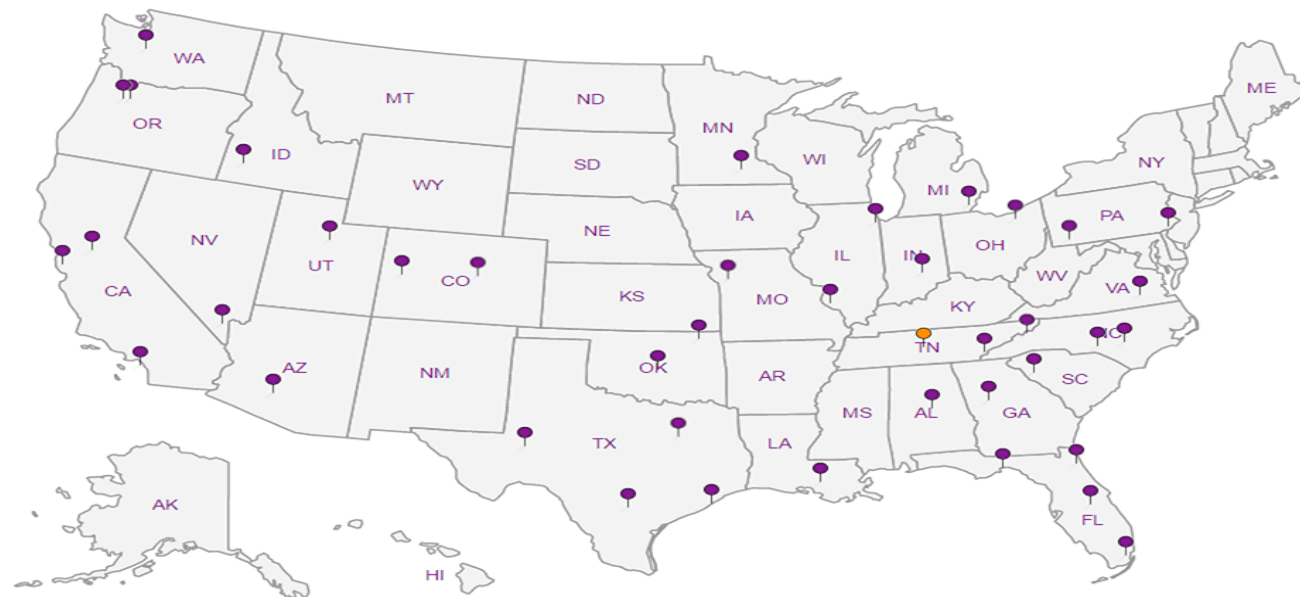
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

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Condition:
NCF / OK

July 12, 2019

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Tasman Geosciences- Arvada, CO

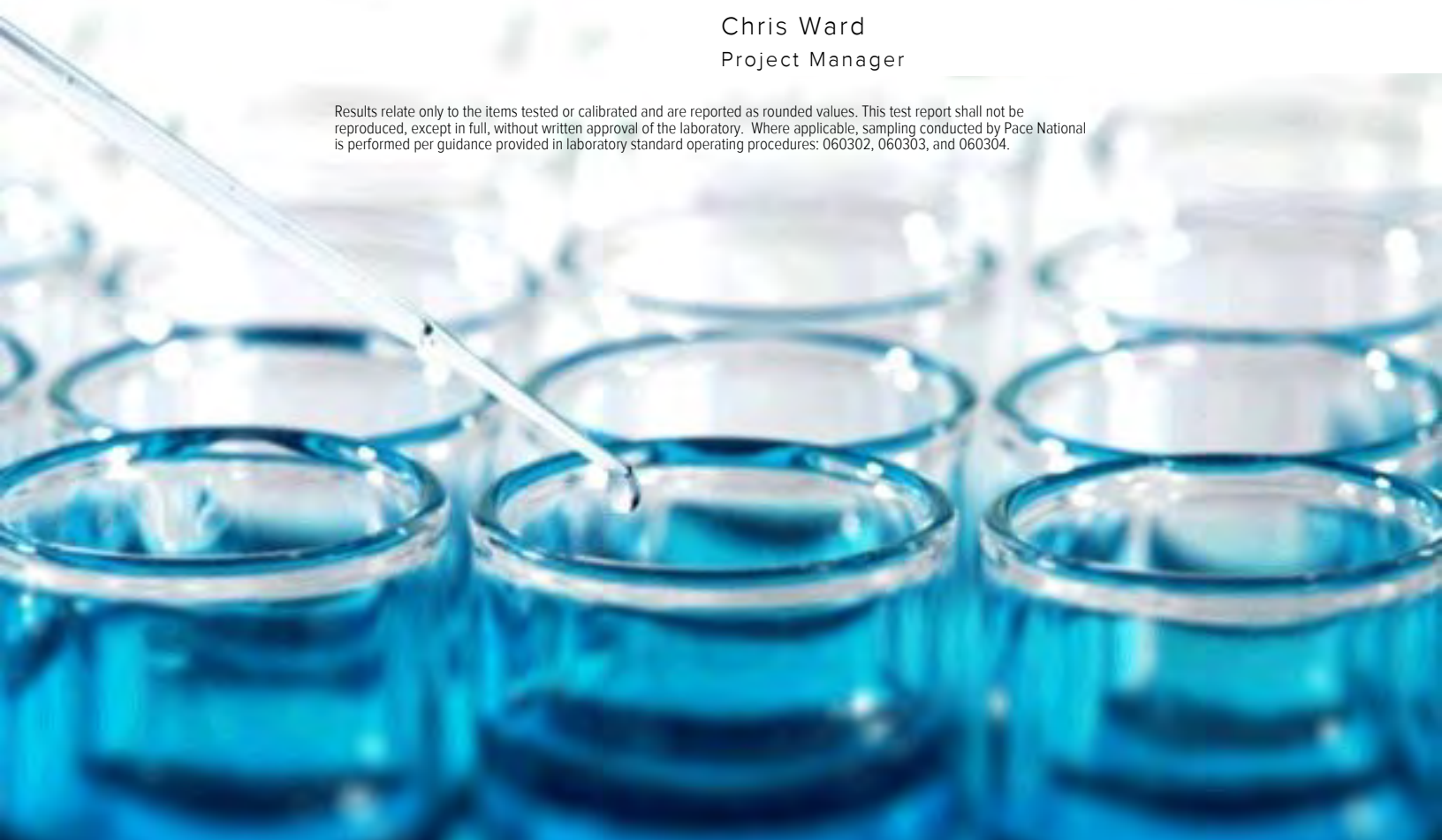
Sample Delivery Group: L116818
Samples Received: 07/10/2019
Project Number: NOBLE FRI 2-18
Description: Noble Fri 2-18
Site: FRI 2-18
Report To: Kevin Walter
6899 Pecos Street, Unit C
Denver, CO 80221

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

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Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
FRIZ-18-V001-070819 L1116818-01	5	
Qc: Quality Control Summary	6	⁴ Cn
Volatile Organic Compounds (MS) by Method M18-Mod	6	⁵ Sr
Gl: Glossary of Terms	9	
Al: Accreditations & Locations	10	⁶ Qc
Sc: Sample Chain of Custody	11	⁷ Gl
		⁸ Al
		⁹ Sc



FRIZ-18-V001-070819 L1116818-01 Air

Collected by
Dillon Slade

Collected date/time
07/08/19 14:55

Received date/time
07/10/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method M18-Mod	WG1308906	2	07/10/19 13:10	07/10/19 13:10	AMC	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method M18-Mod	WG1309625	25	07/11/19 22:37	07/11/19 22:37	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method M18-Mod	WG1310351	1000	07/12/19 14:32	07/12/19 14:32	AMC	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method M18-Mod	WG1310351	80	07/12/19 15:56	07/12/19 15:56	AMC	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



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

Chris Ward
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method M18-Mod

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
Benzene	71-43-2	78.10	0.400	1.28	63.5	203		2	WG1308906
Toluene	108-88-3	92.10	200	753	1050	3960		1000	WG1310351
Ethylbenzene	100-41-4	106	0.400	1.73	26.8	116		2	WG1308906
m&p-Xylene	1330-20-7	106	400	1730	845	3660		1000	WG1310351
o-Xylene	95-47-6	106	5.00	21.7	1050	4550		25	WG1309625
TPH (GC/MS) Low Fraction	8006-61-9	101	4000	16500	94800	391000		80	WG1310351
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		192		J1		WG1308906
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		146		J1		WG1309625
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.6				WG1310351
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		106				WG1310351

Sample Narrative:

L1116818-01 WG1308906, WG1309625: Surrogate failure due to matrix interference.

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3429518-3 07/10/19 10:03

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
(S) 1,4-Bromofluorobenzene	95.3			60.0-140

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

(LCS) R3429518-1 07/10/19 08:43 • (LCSD) R3429518-2 07/10/19 09:23

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Benzene	3.75	4.10	4.06	109	108	70.0-130			0.764	25
Ethylbenzene	3.75	4.10	4.03	109	107	70.0-130			1.88	25
(S) 1,4-Bromofluorobenzene				98.6	98.2	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3429646-3 07/11/19 09:29

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ppbv		ppbv	ppbv
o-Xylene	U		0.0633	0.200
(S) 1,4-Bromofluorobenzene	97.8			60.0-140

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

(LCS) R3429646-1 07/11/19 08:11 • (LCSD) R3429646-2 07/11/19 08:49

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%
o-Xylene	3.75	4.16	4.24	111	113	70.0-130			1.78	25
(S) 1,4-Bromofluorobenzene				104	105	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3430167-3 07/12/19 11:44

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Toluene	U		0.0499	0.200
m&p-Xylene	U		0.0946	0.400
TPH (GC/MS) Low Fraction	29.0	J	6.91	50.0
(S) 1,4-Bromofluorobenzene	94.6			60.0-140

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

(LCS) R3430167-1 07/12/19 09:47 • (LCSD) R3430167-2 07/12/19 10:30

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Toluene	3.75	4.06	3.99	108	106	70.0-130			1.67	25
m&p-Xylene	7.50	8.52	8.28	114	110	70.0-130			2.86	25
TPH (GC/MS) Low Fraction	203	226	218	112	107	70.0-130			3.83	25
(S) 1,4-Bromofluorobenzene				97.5	98.9	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Guide to Reading and Understanding Your Laboratory Report

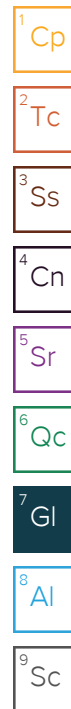
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.





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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

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



Tasman Geosciences
6899 Pecos St. Unit C
Denver, CO 80221

Billing Information:

Tasman Geosciences

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:

Kevin Walter

Email To:

KWalter@Tasman-geo.com

Project

Description: Noble Fri 2-18

City/State

Collected: Thornton CO

Phone: 303-487-1228

Fax:

Client Project #

Noble Fri 2-18

Lab Project #

Fri 2-18

Collected by (print):

Dillon Skide

Site/Facility ID #

Fri 2-18

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Same Day Five Day
Next Day 5 Day (Rad Only)
☒ Two Day 10 Day (Rad Only)
Three Day

Quote #

Date Results Needed

Immediately
Packed on Ice N Y

No.
of
Cntrs

TEDLAR - BTEX+TPH(C6-C10)

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

Fri 2-18 - 0001 - 070819

Air

7/8/19

1455

1

X

Fri 2-18 - 0001 - 070818

Air

7/8/19

1457

1

X

L #

L1116918

A183

Acctnum: TASGEOACO

Template:

Prelogin:

TSR: Chris Ward

PB:

Shipped Via:

Remarks

Sample # (lab only)

Hold

-01

* Matrix:

SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: Hold second sample - run if other bag is compromised

pH Temp

Flow Other

Samples returned via:

UPS FedEx Courier

Tracking # 4430 3424 2368

Relinquished by: (Signature)

Date:

7/9/19

Time:

1600

Received by: (Signature)

Trip Blank Received: Yes (No)
HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

7/9/19

Time:

1730

Received by: (Signature)

Temp: °C Bottles Received:
Amb 2 Air

Relinquished by: (Signature)

Date:

7-10-19

Time:

8:45

Received for lab by: (Signature)

Date: Time:
7-10-19 8:45

Sample Receipt Checklist

COC Seal Present/Intact: ☒ NP Y N
COC Signed/Accurate: ☒ Y N
Bottles arrive intact: ☒ Y N
Correct bottles used: ☒ Y N
Sufficient volume sent: ☒ Y N

If Applicable

VOA Zero Headspace: ☒ Y N
Preservation Correct/Checked: ☒ Y N

RAD SCREEN: <0.5 mR/hr

If preservation required by Login: Date/Time

Hold: Condition:
NCF / OK

July 18, 2019

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Tasman Geosciences- Arvada, CO

Sample Delivery Group: L1119183
Samples Received: 07/17/2019
Project Number: FRI 2-18
Description: Noble Fri 2-18

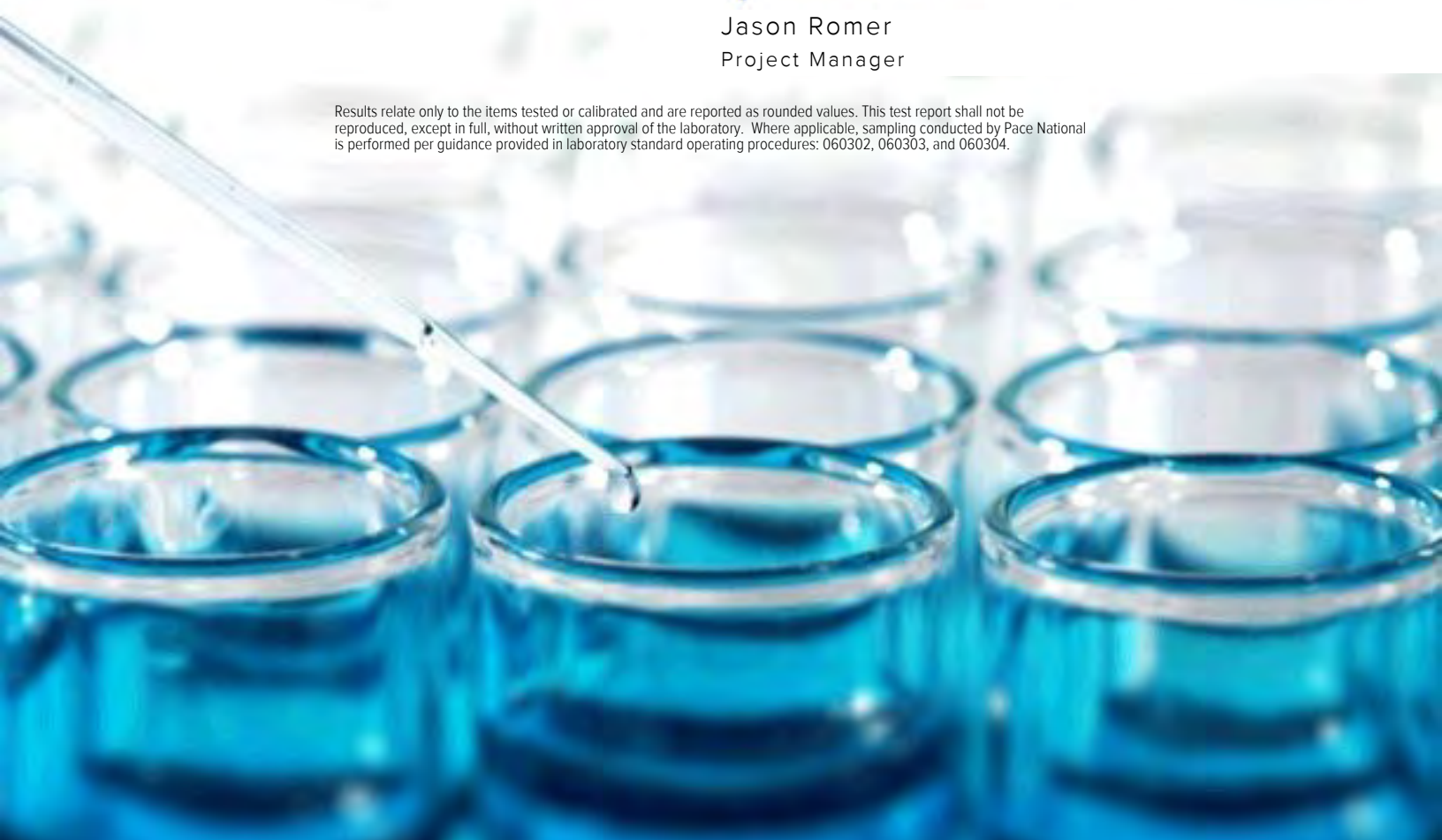
Report To: Mike Jahn
6899 Pecos Street, Unit C
Denver, CO 80221

Entire Report Reviewed By:



Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
FRI 2-18-V001-071619 L1119183-01	5	
Qc: Quality Control Summary	6	⁴ Cn
Volatile Organic Compounds (MS) by Method M18-Mod	6	⁵ Sr
Gl: Glossary of Terms	8	
Al: Accreditations & Locations	9	⁶ Qc
Sc: Sample Chain of Custody	10	⁷ Gl
		⁸ Al
		⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



FRI 2-18-V001-071619 L1119183-01 Air

Collected by
Nestor Sapien

Collected date/time
07/16/19 14:30

Received date/time
07/17/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method M18-Mod	WG1312756	80	07/18/19 00:01	07/18/19 00:01	AMC	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method M18-Mod	WG1313440	1000	07/18/19 15:56	07/18/19 15:56	CAW	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Tasman Geosciences- Arvada, CO

PROJECT:

FRI 2-18

SDG:

L1119183

DATE/TIME:

07/18/19 16:58

PAGE:

3 of 10



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

Jason Romer
Project Manager

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (MS) by Method M18-Mod

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	16.0	51.1	1020	3250		80	WG1312756
Toluene	108-88-3	92.10	200	753	5360	20200		1000	WG1313440
Ethylbenzene	100-41-4	106	16.0	69.4	265	1150		80	WG1312756
m&p-Xylene	1330-20-7	106	32.0	139	4450	19300		80	WG1312756
o-Xylene	95-47-6	106	16.0	69.4	977	4230		80	WG1312756
Methyl tert-butyl ether	1634-04-4	88.10	16.0	57.7	ND	ND		80	WG1312756
TPH (GC/MS) Low Fraction	8006-61-9	101	4000	16500	172000	709000		80	WG1312756
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		116				WG1312756
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.2				WG1313440

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3431743-3 07/17/19 10:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
MTBE	U		0.0505	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
TPH (GC/MS) Low Fraction	15.2	U	6.91	50.0
(S) 1,4-Bromofluorobenzene	95.4			60.0-140

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

(LCS) R3431743-1 07/17/19 08:59 • (LCSD) R3431743-2 07/17/19 09:36

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
MTBE	3.75	4.50	4.47	120	119	70.0-130			0.599	25
Benzene	3.75	4.52	4.60	121	123	70.0-130			1.61	25
Ethylbenzene	3.75	4.61	4.59	123	122	70.0-130			0.495	25
m&p-Xylene	7.50	9.11	9.18	122	122	70.0-130			0.784	25
o-Xylene	3.75	4.55	4.57	121	122	70.0-130			0.531	25
TPH (GC/MS) Low Fraction	203	246	241	122	119	70.0-130			2.32	25
(S) 1,4-Bromofluorobenzene				99.3	99.8	60.0-140				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3431891-3 07/18/19 10:48

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ppbv		ppbv	ppbv
Toluene	U		0.0499	0.200
(S) 1,4-Bromofluorobenzene	95.7			60.0-140

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3431891-1 07/18/19 09:16 • (LCSD) R3431891-2 07/18/19 10:03

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%
Toluene	3.75	4.32	4.22	115	112	70.0-130			2.50	25
(S) 1,4-Bromofluorobenzene				97.0	98.1	60.0-140				



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Abbreviations and Definitions

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ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
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Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
---	---

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

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



[illegible]

July 24, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Tasman Geosciences- Arvada, CO

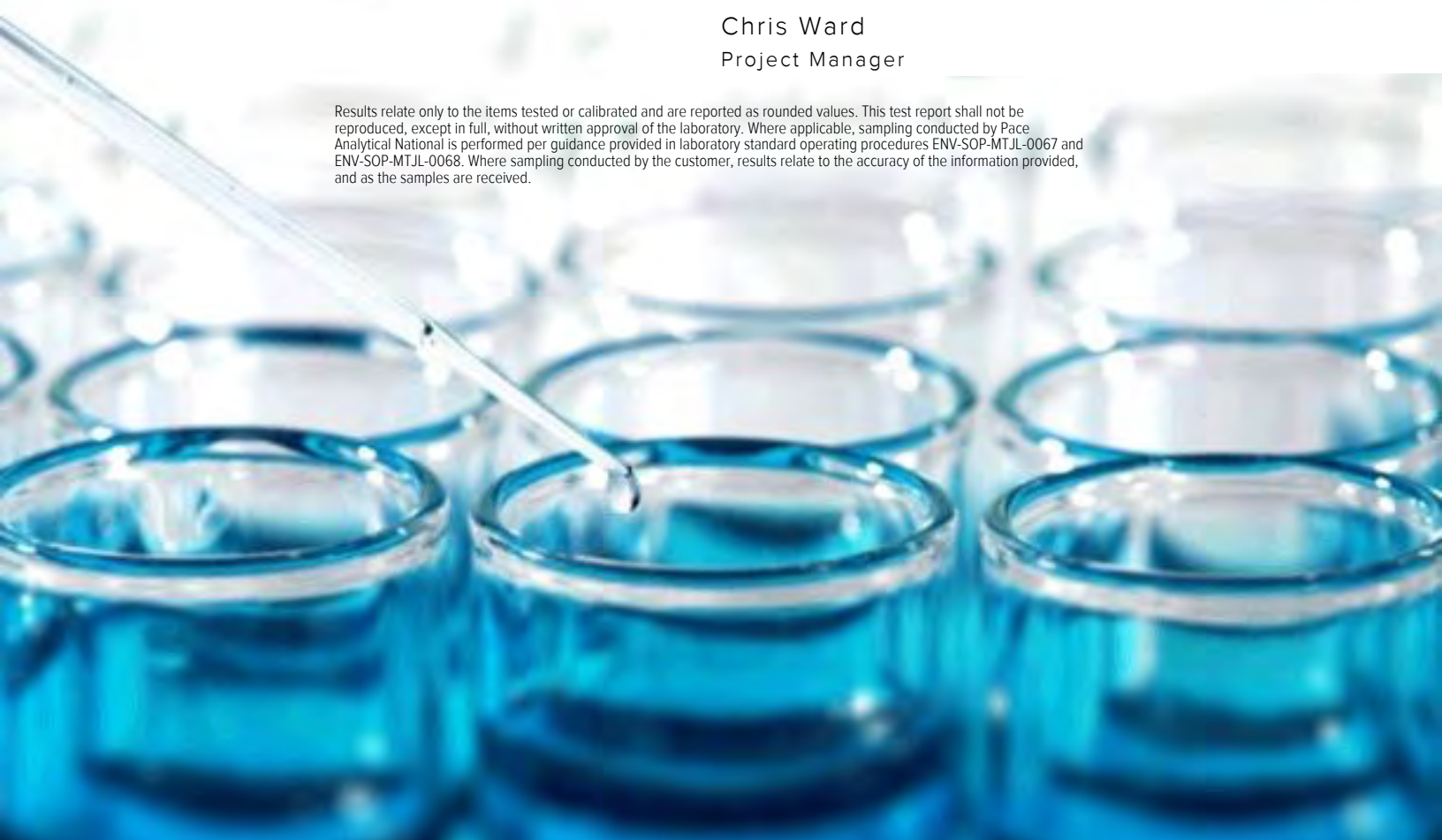
Sample Delivery Group: L1121165
Samples Received: 07/23/2019
Project Number: FRI 2-18
Description: Noble Fri 2-18
Site: FRI 2-18
Report To: Kevin Walter
6899 Pecos Street, Unit C
Denver, CO 80221

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	<div><div>1</div>Cp</div>
Tc: Table of Contents	2	
Ss: Sample Summary	3	<div><div>2</div>Tc</div>
Cn: Case Narrative	4	
Sr: Sample Results	5	<div><div>3</div>Ss</div>
FRI 2-18-V001-072219 L1121165-01	5	
Qc: Quality Control Summary	6	<div><div>4</div>Cn</div>
Volatile Organic Compounds (MS) by Method M18-Mod	6	<div><div>5</div>Sr</div>
Gl: Glossary of Terms	8	
Al: Accreditations & Locations	9	<div><div>6</div>Qc</div>
Sc: Sample Chain of Custody	10	<div><div>7</div>Gl</div>
		<div><div>8</div>Al</div>
		<div><div>9</div>Sc</div>

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



FRI 2-18-V001-072219 L1121165-01 Air

Collected by
Nestor Sapien

Collected date/time
07/22/19 10:30

Received date/time
07/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method M18-Mod	WG1315816	25	07/24/19 00:04	07/24/19 00:04	AMC	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method M18-Mod	WG1316532	400	07/24/19 11:07	07/24/19 11:07	AMC	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Tasman Geosciences- Arvada, CO

PROJECT:

FRI 2-18

SDG:

L1121165

DATE/TIME:

07/24/19 16:49

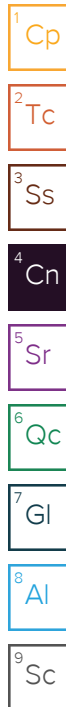
PAGE:

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

Chris Ward
Project Manager





Volatile Organic Compounds (MS) by Method M18-Mod

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	5.00	16.0	856	2730		25	WG1315816
Toluene	108-88-3	92.10	80.0	301	4020	15100		400	WG1316532
Ethylbenzene	100-41-4	106	5.00	21.7	240	1040		25	WG1315816
m&p-Xylene	1330-20-7	106	160	694	3210	13900		400	WG1316532
o-Xylene	95-47-6	106	5.00	21.7	932	4040		25	WG1315816
TPH (GC/MS) Low Fraction	8006-61-9	101	20000	82600	105000	435000		400	WG1316532
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		125				WG1315816
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		93.9				WG1316532

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3433600-3 07/23/19 09:51

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
o-Xylene	U		0.0633	0.200
(S) 1,4-Bromofluorobenzene	95.6			60.0-140

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

(LCS) R3433600-1 07/23/19 08:22 • (LCSD) R3433600-2 07/23/19 09:05

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Benzene	3.75	4.35	4.47	116	119	70.0-130			2.67	25
Ethylbenzene	3.75	4.39	4.43	117	118	70.0-130			0.855	25
o-Xylene	3.75	4.36	4.38	116	117	70.0-130			0.360	25
(S) 1,4-Bromofluorobenzene				100	98.3	60.0-140				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3433821-3 07/24/19 09:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Toluene	U		0.0499	0.200
m&p-Xylene	U		0.0946	0.400
TPH (GC/MS) Low Fraction	U		6.91	50.0
(S) 1,4-Bromofluorobenzene	89.2			60.0-140

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

(LCS) R3433821-1 07/24/19 07:58 • (LCSD) R3433821-2 07/24/19 08:40

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Toluene	3.75	3.99	4.07	106	109	70.0-130			1.98	25
m&p-Xylene	7.50	7.99	8.05	107	107	70.0-130			0.757	25
TPH (GC/MS) Low Fraction	203	212	215	105	106	70.0-130			1.05	25
(S) 1,4-Bromofluorobenzene				100	99.5	60.0-140				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

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



Tasman Geosciences
6899 Pecos St. Unit C
Denver, CO 80221

Report to:

Kevin Walter

Email To:

Kwalter@tasman-geo.com

Project

Description: Noble Fri 2-18

City/State

Collected: Thornton CO

Phone: 303-487-1228

Fax:

Client Project #

Lab Project #

Collected by (print):

Nestor Sapien

Site/Facility ID #

Fri 2-18

P.O. #

Fri 2-18

Collected by (signature):

Rush? (Lab MUST Be Notified)

Same Day

Five Day

Next Day

5 Day (Rad Only)

Two Day

10 Day (Rad Only)

Three Day

Date Results Needed

Immediately
Packed on Ice N ☒ Y ☐

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# 1121165

C027

Acctnum: TASGEOACO

Template:

Prelogin:

TSR: Chris Ward

PB:

Shipped Via:

Remarks

Sample # (lab only)

-01

Hold

Fri 2-18-V001-072219

Air

7-22-19 1030

Fri 2-18-V001-072219B

Air

7-22-19 1032

* Matrix:

SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Only run one sample

Samples returned via:

UPS FedEx Courier

pH Temp

Flow Other

Sample Receipt Checklist

COC Seal Present/Intact: ☒ NP Y N
COC Signed/Accurate: ☒ Y N
Bottles arrive intact: ☒ Y N
Correct bottles used: ☒ Y N
Sufficient volume sent: ☒ Y N
If Applicable
VOA Zero Headspace: ☒ Y N
Preservation Correct/Checked: ☒ Y N

Relinquished by: (Signature)

Date:

7-22-19

Time:

1242

Received by: (Signature)

Trip Blank Received: Yes / No
HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C
Amb

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 7/23/19
Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition:
NCF / OK

Tasman Geosciences- Arvada, CO

Sample Delivery Group: L1123852

Samples Received: 07/31/2019

Project Number:

Description: Vapor Fri 2-18

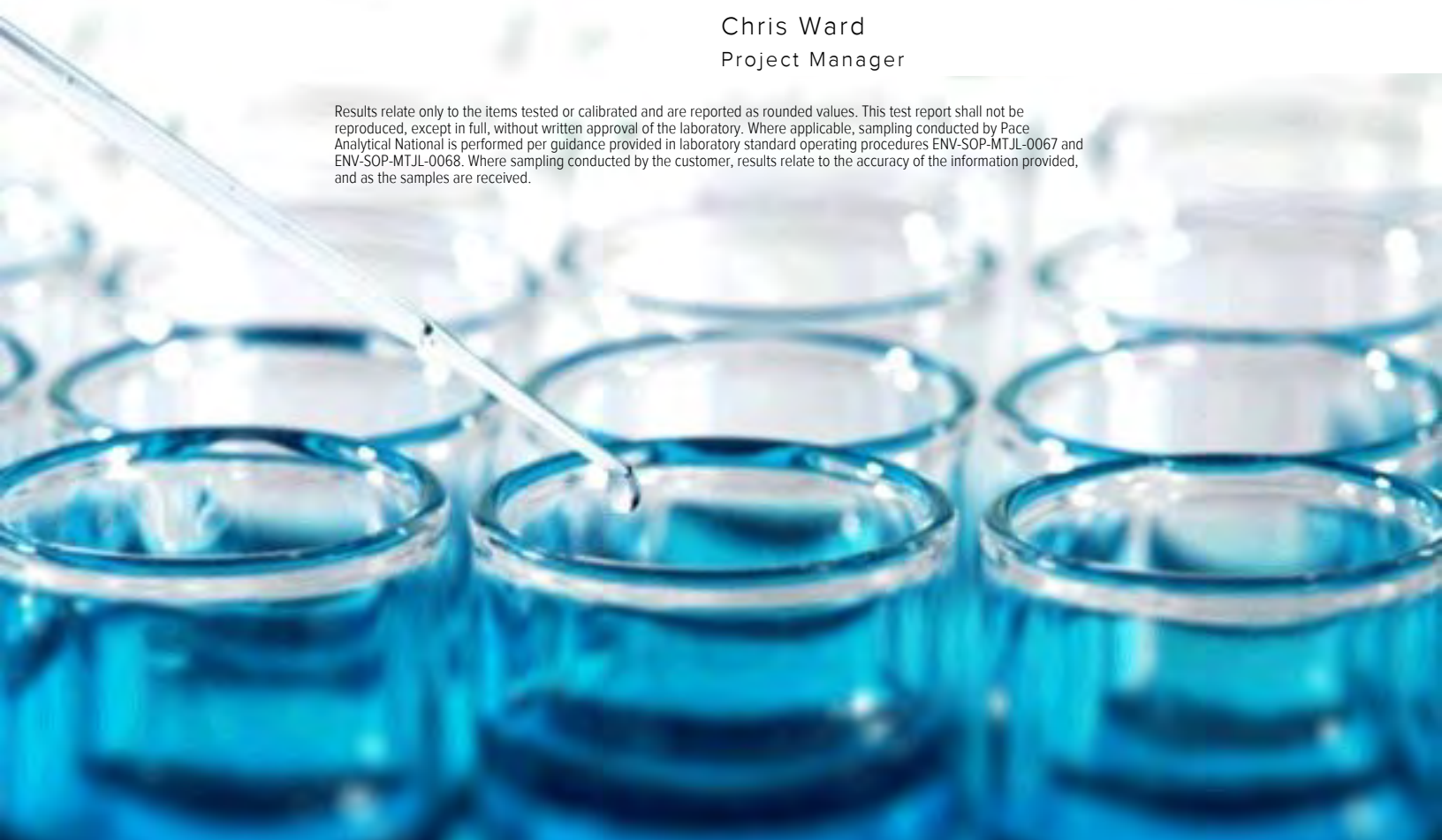
Report To: Kevin Walter
6899 Pecos Street, Unit C
Denver, CO 80221

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

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Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
FRI 2-18-073019 L1123852-01	5	
Qc: Quality Control Summary	6	⁴ Cn
Volatile Organic Compounds (MS) by Method M18-Mod	6	⁵ Sr
Gl: Glossary of Terms	8	
Al: Accreditations & Locations	9	⁶ Qc
Sc: Sample Chain of Custody	10	⁷ Gl
		⁸ Al
		⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



FRI 2-18-073019 L1123852-01 Air

Collected by
TY Gallaway

Collected date/time
07/30/19 15:22

Received date/time
07/31/19 08:43

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method M18-Mod	WG1320499	25	07/31/19 14:41	07/31/19 14:41	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method M18-Mod	WG1321190	200	08/01/19 14:32	08/01/19 14:32	AMC	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Tasman Geosciences- Arvada, CO

PROJECT:

SDG:

L1123852

DATE/TIME:

08/06/19 13:57

PAGE:

3 of 10



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

Chris Ward
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1123852

Volatile Organic Compounds (MS) by Method M18-Mod

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	5.00	16.0	726	2320		25	WG1320499
Toluene	108-88-3	92.10	40.0	151	4800	18100		200	WG1321190
Ethylbenzene	100-41-4	106	5.00	21.7	277	1200		25	WG1320499
m&p-Xylene	1330-20-7	106	80.0	347	3760	16300		200	WG1321190
o-Xylene	95-47-6	106	5.00	21.7	1110	4820		25	WG1320499
TPH (GC/MS) Low Fraction	8006-61-9	101	10000	41300	107000	441000		200	WG1321190
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		174		J1		WG1320499
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1321190

Sample Narrative:

L1123852-01 WG1320499: Surrogate failure due to matrix interference.

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3436261-3 07/31/19 12:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
o-Xylene	U		0.0633	0.200
(S) 1,4-Bromofluorobenzene	94.9			60.0-140

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

(LCS) R3436261-1 07/31/19 10:52 • (LCSD) R3436261-2 07/31/19 11:32

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Benzene	3.75	3.93	3.89	105	104	70.0-130			0.969	25
Ethylbenzene	3.75	3.81	3.86	102	103	70.0-130			1.35	25
o-Xylene	3.75	3.83	3.83	102	102	70.0-130			0.105	25
(S) 1,4-Bromofluorobenzene				97.5	97.1	60.0-140				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3436659-3 08/01/19 10:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Toluene	0.0675	⌵	0.0499	0.200
m&p-Xylene	U		0.0946	0.400
TPH (GC/MS) Low Fraction	22.2	⌵	6.91	50.0
(S) 1,4-Bromofluorobenzene	96.7			60.0-140

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3436659-1 08/01/19 08:51 • (LCSD) R3436659-2 08/01/19 09:34

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Toluene	3.75	4.28	4.32	114	115	70.0-130			0.925	25
m&p-Xylene	7.50	8.63	8.65	115	115	70.0-130			0.165	25
TPH (GC/MS) Low Fraction	203	222	222	109	110	70.0-130			0.208	25
(S) 1,4-Bromofluorobenzene				101	101	60.0-140				



Guide to Reading and Understanding Your Laboratory Report

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Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
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Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

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



[illegible]

August 08, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Tasman Geosciences- Arvada, CO

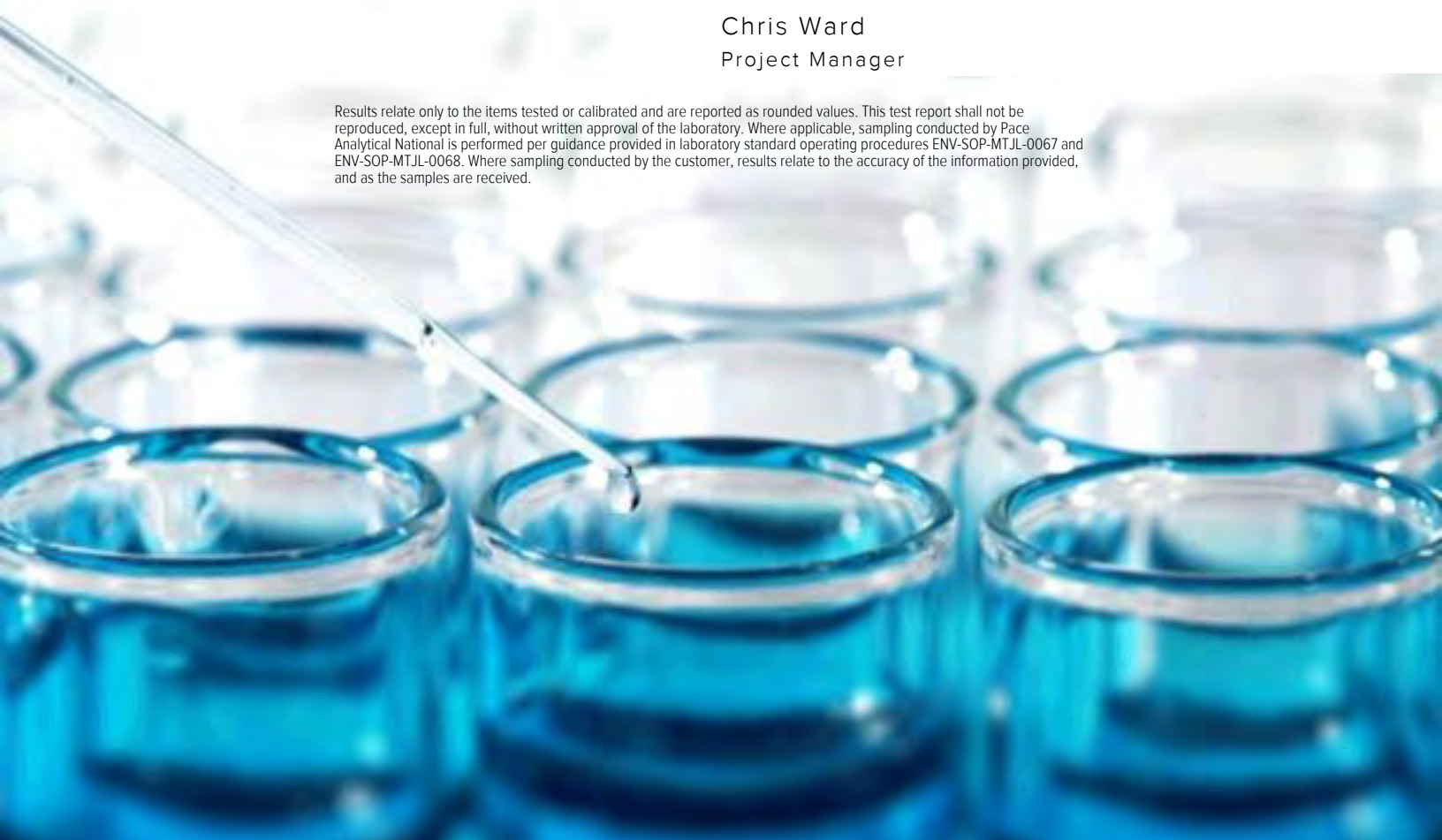
Sample Delivery Group: L1125526
Samples Received: 08/06/2019
Project Number:
Description: Noble Fri 2-18
Site: FRI 2-18
Report To: Kevin Walter
6899 Pecos Street, Unit C
Denver, CO 80221

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
FRI-2-18-V001-081519 L1125526-01	5	
Qc: Quality Control Summary	6	⁴ Cn
Volatile Organic Compounds (MS) by Method M18-Mod	6	⁵ Sr
Gl: Glossary of Terms	7	
Al: Accreditations & Locations	8	⁶ Qc
Sc: Sample Chain of Custody	9	⁷ Gl
		⁸ Al
		⁹ Sc



FRI-2-18-V001-081519 L1125526-01 Air

Collected by
Nestor Sapien

Collected date/time
08/05/19 13:30

Received date/time
08/06/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method M18-Mod	WG1324468	200	08/07/19 13:48	08/07/19 13:48	MBF	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



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

Chris Ward
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method M18-Mod

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	40.0	128	1090	3470		200	WG1324468
Toluene	108-88-3	92.10	40.0	151	5040	19000		200	WG1324468
Ethylbenzene	100-41-4	106	40.0	173	218	946		200	WG1324468
m&p-Xylene	1330-20-7	106	80.0	347	4550	19700		200	WG1324468
o-Xylene	95-47-6	106	40.0	173	1110	4830		200	WG1324468
TPH (GC/MS) Low Fraction	8006-61-9	101	10000	41300	172000	712000		200	WG1324468
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		112				WG1324468

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3438492-3 08/07/19 10:51

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
Toluene	U		0.0499	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
TPH (GC/MS) Low Fraction	U		6.91	50.0
(S) 1,4-Bromofluorobenzene	90.5			60.0-140

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3438492-1 08/07/19 09:20 • (LCSD) R3438492-2 08/07/19 10:04

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Benzene	3.75	4.15	4.12	111	110	70.0-130			0.584	25
Toluene	3.75	4.25	4.20	113	112	70.0-130			1.11	25
Ethylbenzene	3.75	4.27	4.24	114	113	70.0-130			0.663	25
m&p-Xylene	7.50	8.50	8.45	113	113	70.0-130			0.553	25
o-Xylene	3.75	4.27	4.25	114	113	70.0-130			0.362	25
TPH (GC/MS) Low Fraction	203	232	230	115	114	70.0-130			1.01	25
(S) 1,4-Bromofluorobenzene				95.7	96.2	60.0-140				



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
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Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

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



Tasman Geosciences
6899 Pecos St. Unit C
Denver, CO 80221

Billing Information:

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L # 11125526

B135

Acctnum: TASGEOACO

Template:

Prelogin:

TSR: Chris Ward

PB:

Shipped Via:

Remarks Sample # (lab only)

Report to: Kevin Walter
Email To: kwalter@tasman-geo.com

Project Description: Noble Fri 2-18
City/State Collected: Thornton CO

Phone: 303-487-1228
Fax:

Client Project #

Lab Project #

Collected by (print): Nestor Sapien

Site/Facility ID # Fri 2-18

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

Same Day Five Day
Next Day 5 Day (Rad Only)
☒ Two Day 10 Day (Rad Only)
Three Day

Date Results Needed

Immediately
Packed on Ice N ☒ Y

No. of

Cntrs
TP

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time
-----------	-----------	----------	-------	------	------

Fri-2-18-V001-080579		Air		8-5-19	1330
Fri-2-18-V001-080579B		Air		8-5-19	1332

TEDLAR - BTEX+TPH(C6-C10)

RAD SCREEN: <0.5 mR/hr

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: Only run one sample

Samples returned via:

UPS FedEx Courier

Tracking #

Relinquished by: (Signature)

Relinquished by: (Signature)

Relinquished by: (Signature)

Date: 8-5-19
Time: 1600

Date: 8/5
Time: 1730

Date: Time:

Received by: (Signature)

Received by: (Signature)

Received for lab by: (Signature)

Trip Blank Received: Yes No
HCL/MeOH
TBR

Temp: 20°C
Bottles Received: 2

Date: 8/10/19
Time: 8:45

Sample Receipt Checklist
COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
If Applicable
VOA Zero Headspace: ☐ Y ☐ N
Preservation Correct/Checked: ☐ Y ☐ N

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

August 15, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Tasman Geosciences- Arvada, CO

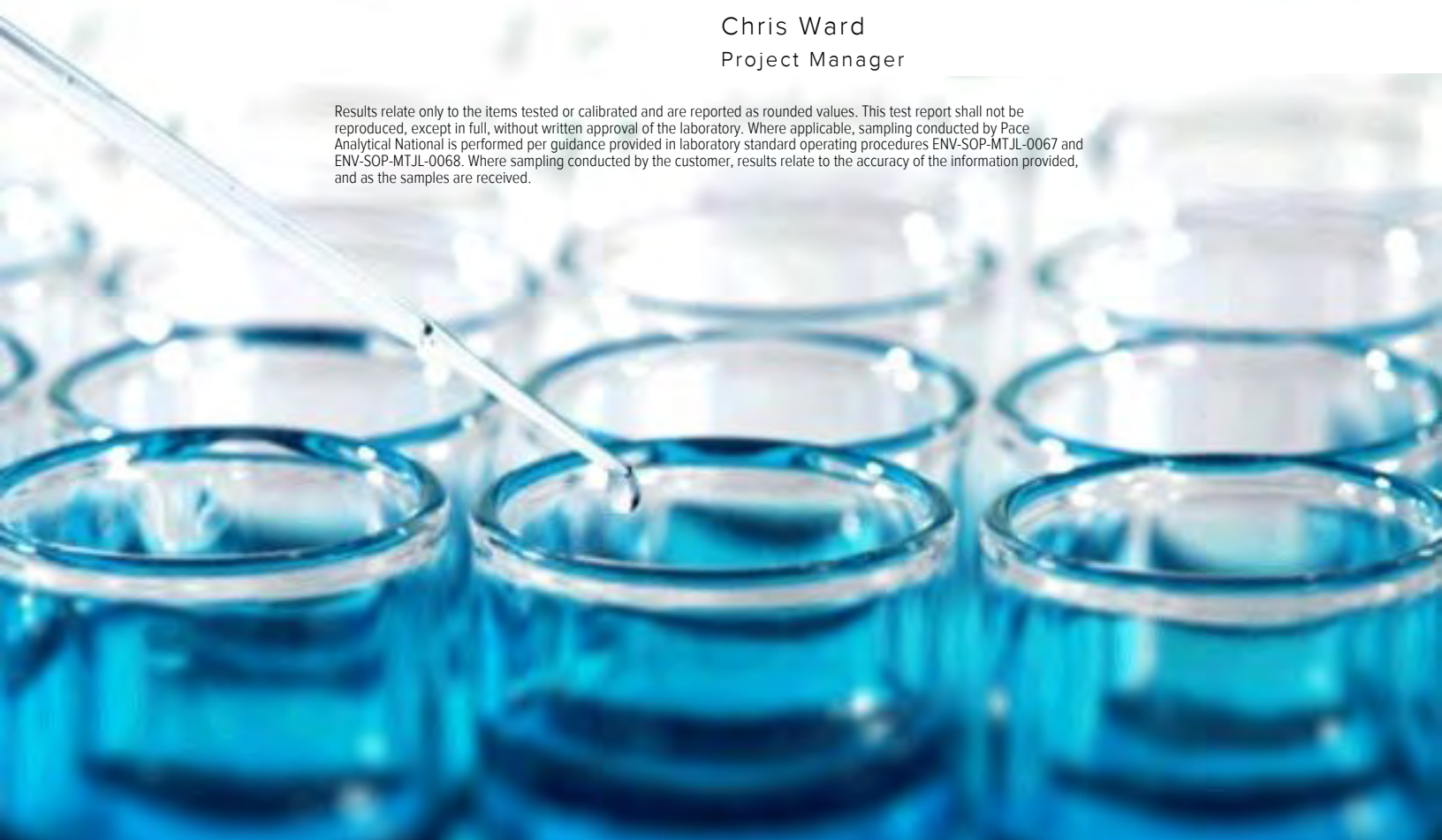
Sample Delivery Group: L1128525
Samples Received: 08/14/2019
Project Number: FRI 2-18
Description: Noble Fri 2-18
Site: FRI 2-18
Report To: Kevin Walter
6899 Pecos Street, Unit C
Denver, CO 80221

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

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Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
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Qc: Quality Control Summary	6	⁴ Cn
Volatile Organic Compounds (MS) by Method M18-Mod	6	⁵ Sr
Gl: Glossary of Terms	8	
Al: Accreditations & Locations	9	⁶ Qc
Sc: Sample Chain of Custody	10	⁷ Gl
		⁸ Al
		⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



FRI 2-18-V001-081319 L1128525-01 Air

Collected by
Nestor Sapien

Collected date/time
08/13/19 09:30

Received date/time
08/14/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method M18-Mod	WG1328323	50	08/14/19 17:08	08/14/19 17:08	MBF	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method M18-Mod	WG1329217	200	08/15/19 13:03	08/15/19 13:03	MBF	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Tasman Geosciences- Arvada, CO

PROJECT:

FRI 2-18

SDG:

L1128525

DATE/TIME:

08/15/19 14:38

PAGE:

3 of 10



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

Chris Ward
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method M18-Mod

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	10.0	31.9	1210	3880		50	WG1328323
Toluene	108-88-3	92.10	40.0	151	4790	18000		200	WG1329217
Ethylbenzene	100-41-4	106	10.0	43.4	367	1590		50	WG1328323
m&p-Xylene	1330-20-7	106	80.0	347	3490	15100		200	WG1329217
o-Xylene	95-47-6	106	10.0	43.4	1190	5160		50	WG1328323
TPH (GC/MS) Low Fraction	8006-61-9	101	10000	41300	138000	570000		200	WG1329217
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		114				WG1328323
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.7				WG1329217

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3440651-3 08/14/19 10:14

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ppbv		ppbv	ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
o-Xylene	U		0.0633	0.200
(S) 1,4-Bromofluorobenzene	98.2			60.0-140

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

(LCS) R3440651-1 08/14/19 09:00 • (LCSD) R3440651-2 08/14/19 09:37

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%
Benzene	3.75	4.44	4.29	118	114	70.0-130			3.44	25
Ethylbenzene	3.75	4.47	4.46	119	119	70.0-130			0.206	25
o-Xylene	3.75	4.55	4.49	121	120	70.0-130			1.35	25
(S) 1,4-Bromofluorobenzene				103	102	60.0-140				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3440829-3 08/15/19 10:35

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Toluene	0.0636	⌵	0.0499	0.200
m&p-Xylene	U		0.0946	0.400
TPH (GC/MS) Low Fraction	38.9	⌵	6.91	50.0
(S) 1,4-Bromofluorobenzene	92.6			60.0-140

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

(LCS) R3440829-1 08/15/19 09:10 • (LCSD) R3440829-2 08/15/19 09:53

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Toluene	3.75	3.93	3.92	105	104	70.0-130			0.259	25
m&p-Xylene	7.50	8.26	8.10	110	108	70.0-130			1.97	25
TPH (GC/MS) Low Fraction	203	216	216	106	107	70.0-130			0.293	25
(S) 1,4-Bromofluorobenzene				95.0	95.2	60.0-140				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

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RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
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Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
---	---

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

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



ACCOUNT:

Tasman Geosciences- Arvada, CO

PROJECT:

FRI 2-18

SDG:

L1128525

DATE/TIME:

08/15/19 14:38

PAGE:

9 of 10

[illegible]

August 22, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Tasman Geosciences- Arvada, CO

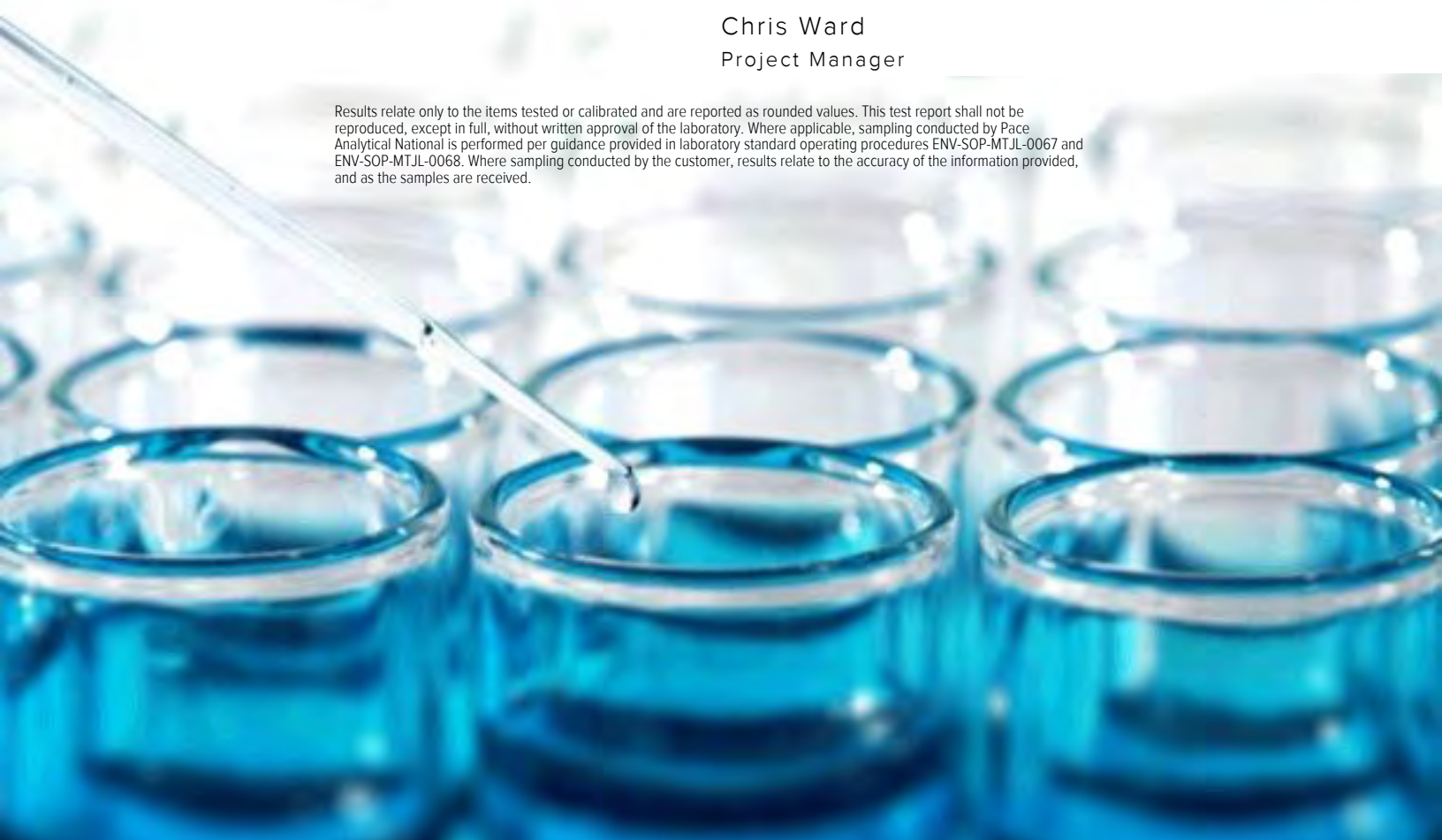
Sample Delivery Group: L1130587
Samples Received: 08/20/2019
Project Number:
Description: Noble FRI 2-18
Site: FRI 2-18
Report To: Kevin Walter
6899 Pecos Street, Unit C
Denver, CO 80221

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
FRI 2-18-V001-081919 L1130587-01	5	
Qc: Quality Control Summary	6	⁴ Cn
Volatile Organic Compounds (MS) by Method M18-Mod	6	⁵ Sr
Gl: Glossary of Terms	8	
Al: Accreditations & Locations	9	⁶ Qc
Sc: Sample Chain of Custody	10	⁷ Gl
		⁸ Al
		⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



FRI 2-18-V001-081919 L1130587-01 Air

Collected by
N.S.

Collected date/time
08/19/19 09:30

Received date/time
08/20/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method M18-Mod	WG1331565	50	08/21/19 00:23	08/21/19 00:23	MBF	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method M18-Mod	WG1332360	200	08/21/19 13:42	08/21/19 13:42	MBF	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Tasman Geosciences- Arvada, CO

PROJECT:

SDG:

L1130587

DATE/TIME:

08/22/19 09:32

PAGE:

3 of 10



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

Chris Ward
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (MS) by Method M18-Mod

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	10.0	31.9	754	2410		50	WG1331565
Toluene	108-88-3	92.10	40.0	151	4080	15400		200	WG1332360
Ethylbenzene	100-41-4	106	10.0	43.4	204	885		50	WG1331565
m&p-Xylene	1330-20-7	106	20.0	86.7	2890	12500		50	WG1331565
o-Xylene	95-47-6	106	10.0	43.4	752	3260		50	WG1331565
TPH (GC/MS) Low Fraction	8006-61-9	101	2500	10300	105000	432000		50	WG1331565
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		124				WG1331565
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		101				WG1332360

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3442494-3 08/20/19 10:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
TPH (GC/MS) Low Fraction	U		6.91	50.0
(S) 1,4-Bromofluorobenzene	93.5			60.0-140

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

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

(LCS) R3442494-1 08/20/19 09:15 • (LCSD) R3442494-2 08/20/19 10:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Benzene	3.75	4.19	4.23	112	113	70.0-130			1.13	25
Ethylbenzene	3.75	4.33	4.38	116	117	70.0-130			1.22	25
m&p-Xylene	7.50	8.54	8.60	114	115	70.0-130			0.717	25
o-Xylene	3.75	4.32	4.38	115	117	70.0-130			1.39	25
TPH (GC/MS) Low Fraction	203	231	232	114	114	70.0-130			0.308	25
(S) 1,4-Bromofluorobenzene				97.6	97.6	60.0-140				

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3442979-3 08/21/19 10:19

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Toluene	U		0.0499	0.200
(S) 1,4-Bromofluorobenzene	96.8			60.0-140

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3442979-1 08/21/19 08:57 • (LCSD) R3442979-2 08/21/19 09:39

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Toluene	3.75	4.39	4.43	117	118	70.0-130			1.01	25
(S) 1,4-Bromofluorobenzene				102	102	60.0-140				



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Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

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A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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Tasman Geosciences
6899 Pecos St. Unit C
Denver, CO 80221

Billing Information:

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page ____ of ____



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L #

H137

Acctnum: TASGEOACU

Template:

Prelogin:

TSR: Chris Ward

PB:

Shipped Via:

Remarks

Sample # (lab only)

Report to:

Kevin Walter

Email To:

kwalter@tasman-geo.com

Project

Description: Noble Fri 2-18

City/State

Collected: Thornton Colorado

Phone: 303-487-1228

Client Project #

Lab Project #

Fax:

Collected by (print):

Nester Sapien Fri 2-18

Site/Facility ID #

P.O. #

Fri 2-18

Collected by (signature):

Immediately

Packed on Ice N ☒ Y ☐

Rush? (Lab MUST Be Notified)

Same Day Five Day

Next Day 5 Day (Rad Only)

Two Day 10 Day (Rad Only)

Three Day

Quote #

Date Results Needed

No.
of
Cntrs

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

Fri 2-18-V001-081919

Air

8-19-19 0930

Fri 2-18-V001-081919B

Air

8-19-19 0932

* Matrix:

SS - Soil AIR - Air F - Filter

GW - Groundwater B - Bioassay

WW - WasteWater

DW - Drinking Water

OT - Other

Remarks:

Only run one sample.

Samples returned via:

UPS FedEx Courier

Tracking #4430

34243099

pH Temp

Flow Other

Sample Receipt Checklist

COC Seal Present/Intact: NP Y N

COC Signed/Accurate: Y N

Bottles arrive intact: Y N

Correct bottles used: Y N

Sufficient volume sent: Y N

If Applicable

VOA Zero Headspace: Y N

Preservation Correct/Checked: Y N

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Trip Blank Received: Yes / No

HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C Bottles Received:

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: Time:

Hold:

Condition:

NCF / OK