

SITE ASSESSMENT REPORT
HSR CHARLTON 08-20
COGCC SPILL TRACKING # 480746
COGCC REMEDIATION # 19600

Prepared for:



2115 117th Avenue
Greeley, CO 80631

Prepared by:



6855 W. 119th Ave
Broomfield, CO 80020

November 18, 2021

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

Subject: **Site Assessment Report**
 HSR Charlton 08-20
 Spill/Release Point ID: 480746
 Remediation #: 19600
 SENE S20 T4N R65W
 Weld County, Colorado

Dear Mr. Evans:

Below please find a copy of the above referenced Site Assessment Report (Report) for the HSR Charlton 08-20 site (Site) located in Weld County, Colorado. The text below describes decommissioning, assessment, and associated groundwater and soil sampling activities conducted by Tasman Geosciences, Inc. (Tasman), on behalf of Noble Energy, Inc. (Noble) between September 13, 2021 and October 27, 2021.

Introduction

The purpose of this document is to describe the results of soil and groundwater sampling activities conducted at the Site to evaluate potential subsurface impacts. The activities described below were performed in response to the discovery of impacted material adjacent to a flowline during plugging and abandonment activities on September 13, 2021.

Facility Background

The Site is located approximately 3.5 miles southeast of LaSalle in Weld County, Colorado. Site legal description is the southeast 1/4 of the northeast 1/4 of Section 20, Township 4 north, Range 65 west, of the 6th Principal Meridian. The Site is located on terrain that slopes gradually to the northwest. The Site is approximately 0.35 miles south of County Road 44 at coordinates 40.3000600°, -104.6804700°.

Tasman was retained by Noble on September 13, 2021, to complete soil sampling and documentation during decommissioning and abandonment activities. As reported in the initial Form 19, historical impacts were discovered adjacent to the HSR Charlton 08-20 flowline and wellhead. The Form 19 was submitted to the Colorado Oil and Gas Conservation Commission (COGCC) on September 14, 2021. The COGCC subsequently issued Spill/Release Point ID Number 480746 for this event. The COGCC assigned Remediation Number 19600 for the project.

Site Decommissioning Activities

On September 13, 2021, Tasman completed decommissioning soil and groundwater sampling and documentation for the HSR Charlton 08-20 wellhead and flowline. Excavation soil samples were collected from the hole around the plugged well casing along all four sidewalls (SS01@2.5', SS02@2.5', SS03@2.5', SS04@2.5'), excavation base (FS01@4'), and from beneath the flowline riser (FL01-A@3'). Groundwater was encountered in the excavation at approximately two feet below ground surface (ft. bgs) where a sample, GW01, was collected. Two additional excavations were completed to collect soil samples from the separator end of the flowline (FL01-B@4') and a background sample from adjacent native soil (BG01@2.5'). All soil samples collected were field screened for volatile organic compounds (VOC) using a photoionization detector (PID) and standard headspace sampling techniques. All soil samples were submitted to Summit Scientific (Summit) in Golden, Colorado for laboratory analysis of COGCC Table 915-1 list of organics in soil using United States Environmental Protection Agency (USEPA) Method 8260B and USEPA Method 8270D, and total petroleum hydrocarbons (TPH) using USEPA Methods 8260B and 8015. All soil samples were also analyzed for pH, electrical conductivity (EC), sodium absorption ratio (SAR) using USEPA saturated paste extraction method, and boron using hot water soluble soil extract method. Soil samples collected from the source and adjacent native soil (SS01@2.5', SS02@2.5', SS03@2.5', SS04@2.5' and BG01@2.5') were also analyzed for COGCC Table 915-1 metals in soil using USEPA Method 6020B. Groundwater sample, GW01, was also submitted to Summit for analysis of COGCC Table 915-1 organic compounds in groundwater using USEPA Method 8260B. Decommissioning soil analytical results are summarized in Table 1 and illustrated on Figure 3. Groundwater analytical results are summarized in Table 2 and illustrated in Figure 3. Laboratory analytical reports are included in Attachment A.

Site Assessment Activities

Between October 21 and October 27, 2021, Tasman completed site assessment activities to delineate potential subsurface soil and groundwater impacts. Tasman advanced five boreholes (BH01 through BH05) to 12 to 14 ft. bgs using an AMS Power Probe via direct push in the area of the previous flowline decommissioning excavation. During soil boring operations, soil samples were collected and field screened for VOCs using a PID and standard headspace sampling techniques. Soil samples were collected from all borings at depths corresponding to initial observed impacts, the interval of the highest observed PID reading, and the terminal depth of the boring. All soil samples (BH01@1-2', BH01@2-3', BH01@11-12', BH02@1-2', BH02@2-3', BH02@11-12', BH03@1-2', BH03@2-3', BH03@12-14', BH04@1-2', BH04@2-3', BH04@12-14', BH05@1-2', BH05@2-3', BH05@10-12') were submitted to Summit for laboratory analysis of COGCC Table 915-1 list of organics in soil using USEPA Method 8260B and USEPA Method 8270D, TPH using USEPA Methods 8260B and 8015. Soil samples collected from the source depth, BH01@2-3', BH02@2-3', BH03@2-3', BH04@2-3', and BH05@2-3' were also analyzed for barium in soil using USEPA Method 6020B. During soil boring activities, groundwater was encountered between 2 and 3 ft. bgs. All five soil borings were converted to temporary groundwater monitoring wells. Borehole soil analytical results are summarized in Table 1 and illustrated on Figure 4. Laboratory analytical reports are included in Attachment A and borings logs and included in Attachment B.

On October 27, 2021, Tasman collected groundwater samples from the five installed groundwater monitoring wells to evaluate dissolved phase petroleum hydrocarbon groundwater impacts. Groundwater samples were submitted to Summit for laboratory analysis of organic compounds benzene, toluene, ethylbenzene, total xylenes, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-

trimethylbenzene using USEPA Method 8260B. Groundwater samples were also analyzed for inorganic parameters total dissolved solids (TDS) using Method SM2540C, chloride ion, and sulfate ion using USEPA Method 300.0. During groundwater sampling activities, groundwater levels were recorded using an interface probe and subsequently converted to elevations which are presented in Table 2. A groundwater potentiometric surface map is shown on Figure 4. Groundwater analytical results are summarized in Table 3 and shown on Figure 5. Laboratory analytical reports are included in Attachment C.

Results

Laboratory analytical results for soil samples collected during initial decommissioning and subsequent site assessment activities indicate soil impacts above COGCC Table 915-1 standards for 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene are present at the Site. These soil impacts were identified at locations SS01@2.5', SS02@2.5', and BH01 at depths between 2.5 and 3 ft. bgs. Soil sample results for inorganic analytes pH, SAR, and metals were compliant with COGCC Table 915-1 standards except for pH at FL01-B@3' and Barium at BH01. Background soil sample results for arsenic, and selenium indicated elevated levels are present in adjacent native soil.

Groundwater laboratory analytical results indicate all samples are compliant with COGCC Table 915-1 standards for organic compounds in groundwater. Based on groundwater inorganic results and background concentrations at BH03, sulfate ion concentration is elevated at monitoring well BH02. Tasman recommends removing TDS and chloride ion from the quarterly sampling plan.

Conclusions

Based on field and laboratory data, vadose zone soil impacts were detected at the site above COGCC Table 915-1 standards at 3 of the locations sampled. Soil impacts have been delineated vertically and horizontally. Dissolved phase petroleum hydrocarbon groundwater impacts were not detected from the excavation groundwater sample or any of the five monitoring well locations. Soil impacts will be addressed through excavation for off-site disposal, during which confirmation soil samples will be collected and a groundwater amendment may be applied. Following source removal, groundwater monitoring wells will be replaced and quarterly monitoring will be initiated until four consecutive quarters of compliant results has been achieved.

Remarks

The discussion and conclusions contained in this report represent the professional opinions of Tasman Geosciences, Inc. These opinions are based on currently available information and are arrived at in accordance with currently accepted geologic and engineering practices.

Please contact me at (720) 616-8383 or at jwhritenour@tasman-geo.com if you require additional information.

Sincerely,
Tasman Geosciences, Inc.



Jake Whritenour, Program Manager

Attachments:

Table 1 – Soil Analytical Data

Table 2 – Groundwater Elevation Data

Table 3 – Groundwater Analytical Data

Figure 1 – Site Location Map

Figure 2 – Site Overview

Figure 3 – Soil and Groundwater Analytical Results Map (9/13/2021)

Figure 4 – Borehole Soil Analytical Results Map (10/21/2021)

Figure 5 – Groundwater Potentiometric Surface Contour Map (10/27/2021)

Figure 6 – Groundwater Analytical Results Map (10/27/2021)

Attachment A – Laboratory Soil Analytical Data Reports

Attachment B – Boring Logs

Attachment C – Laboratory Groundwater Analytical Data Reports

TABLES

TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - HSR CHARLTON 08-20

Soil Sample ID	Date	¹ Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ²		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^{2,3}		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
SS01@2.5'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	0.037	<0.0038	20	160	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0331	<0.00500	0.0115	0.209	0.169
SS02@2.5'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	0.17	<0.010	6.8	120	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.012	<0.00500	<0.00500	0.0859	0.0997
SS03@2.5'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS04@2.5'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	1.7	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01@4'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01-A@3'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	1.8	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00855	<0.00500	<0.00500	<0.00500	<0.00500
FL01-B@3'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH01@1-2'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0136	<0.00500	<0.00500	0.057	0.021
BH01@2-3'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	0.011	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH01@11-12'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH02@1-2'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH02@2-3'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH02@10-12'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH03@1-2'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH03@2-3'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH03@12-14'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH04@1-2'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH04@2-3'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH04@12-14'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH05@1-2'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH05@2-3'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH05@10-12'	10/21/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL ²		6 - 8.3	<6	<4mmhos/cm	2
SS01@2.5'	09/13/21	8.04	0.134	0.708	0.18
SS02@2.5'	09/13/21	8.20	0.138	0.86	0.253
SS03@2.5'	09/13/21	7.94	0.185	0.853	0.142
SS04@2.5'	09/13/21	8.12	0.0809	0.431	0.178
FS01@4'	09/13/21	7.97	0.264	0.572	0.260
FL01-A@3'	09/13/21	7.82	0.102	0.752	0.163
FL01-B@3'	09/13/21	8.52	0.0745	0.311	0.218
BG01@2.5'	09/13/21	7.69	NA	NA	NA

Soil Sample ID	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ²		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
SS01@2.5'	09/13/21	1.92	254	<0.227	<0.30	6.84	6.88	6.39	0.914	0.0231	32.3
SS02@2.5'	09/13/21	2.57	207	<0.227	<0.30	7.76	11.4	6.68	0.730	0.0307	32.0
BG01@2.5'	09/13/21	2.12	64.5	<0.231	<0.30	7.69	7.21	5.87	1.06	0.0356	36.3
BH01@2-3'	10/21/21	NA	129	NA	NA	NA	NA	NA	NA	NA	NA
BH02@2-3'	10/21/21	NA	76.2	NA	NA	NA	NA	NA	NA	NA	NA
BH03@2-3'	10/21/21	NA	63.2	NA	NA	NA	NA	NA	NA	NA	NA
BH04@2-3'	10/21/21	NA	79.1	NA	NA	NA	NA	NA	NA	NA	NA
BH05@2-3'	10/21/21	NA	55.2	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1. Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.

2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.

3. SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

mmhos/cm = Millmhos per centimeter

mg/L = Milligrams per liter

NA = Not analyzed

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

1,2,4 - TMB = 1,2,4 Trimethylbenzene

1,3,5 - TMB = 1,3,5 Trimethylbenzene

Benz(a) = Benzanthracene

Benzo(b) = Benzofluoranthene

Benzo(k) = Benzofluoranthene

Benzo(a) = Benzopyrene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene

Highlighted results are equal to or exceed the COGCC Table 915-1 standard

TABLE 2
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - HSR CHARLTON 08-20



Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	10/27/21	4786.35	10.70	1.63	ND	ND	4785.04
BH02	10/27/21	4786.51	10.32	1.98	ND	ND	4784.82
BH03	10/27/21	4786.75	11.92	1.80	ND	ND	4785.36
BH04	10/27/21	4786.98	13.55	1.96	ND	ND	4785.26
BH05	10/27/21	4786.32	10.38	1.94	ND	ND	4784.57

Notes:

⁽¹⁾ Depth to water measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

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

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

LNAPL relative density was estimated to be approximately 0.75

Definitions:

ft. = Feet
 AMSL = Above mean sea level
 BTOC = Below top of casing
 BGS = Below ground surface
 LNAPL = Light non-aqueous phase liquid
 ND = No LNAPL detected

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - HSR CHARLTON 08-20

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	TDS (mg/L)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
COGCC Groundwater Standard ⁽¹⁾		5	560	700	1,400	140	67	67	<1.25 x Background	250 or <1.25 x Background	250 or <1.25 x Background
GW01	9/13/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	NA	NA
BH01	10/27/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	728	203	273
BH02	10/27/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,280	348	634
BH03 ²	10/27/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,070	298	388
BH04	10/27/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	836	212	374
BH05	10/27/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	816	215	365

Notes:

⁽¹⁾ Groundwater standards referenced from 2 CCR 404-1, Table 915-1 (January 15, 2021).

⁽²⁾ Monitoring well used to determine background concentration levels

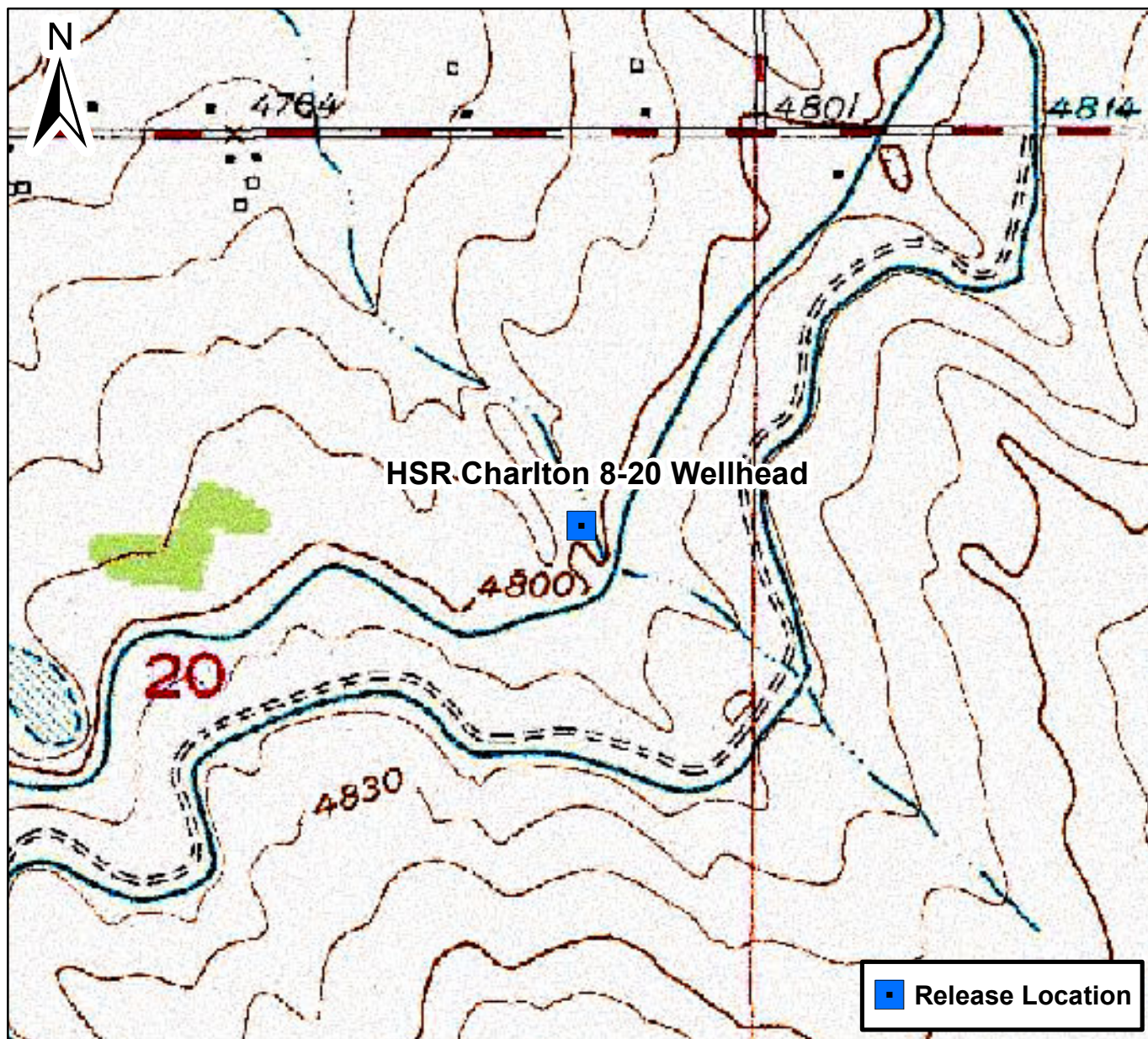
Definitions:

< = Analytical result is less than the indicated laboratory reporting limit
COGCC = Colorado Oil and Gas Conservation Commission
µg/L = Micrograms per liter
mg/L = Milligrams per liter
NA = Not analyzed
1,2,4 - TMB = 1,2,4 Trimethylbenzene
1,3,5 - TMB = 1,3,5 Trimethylbenzene
TDS = Total Dissolved Solids

Highlighted results are equal to or exceed the COGCC Table 915-1 standard

Bold results exceed the COGCC Table 915-1 standard for groundwater inorganic parameters, site-specific background assessment is on-going for groundwater inorganic constituents.

FIGURES




0 875 1,750 Feet

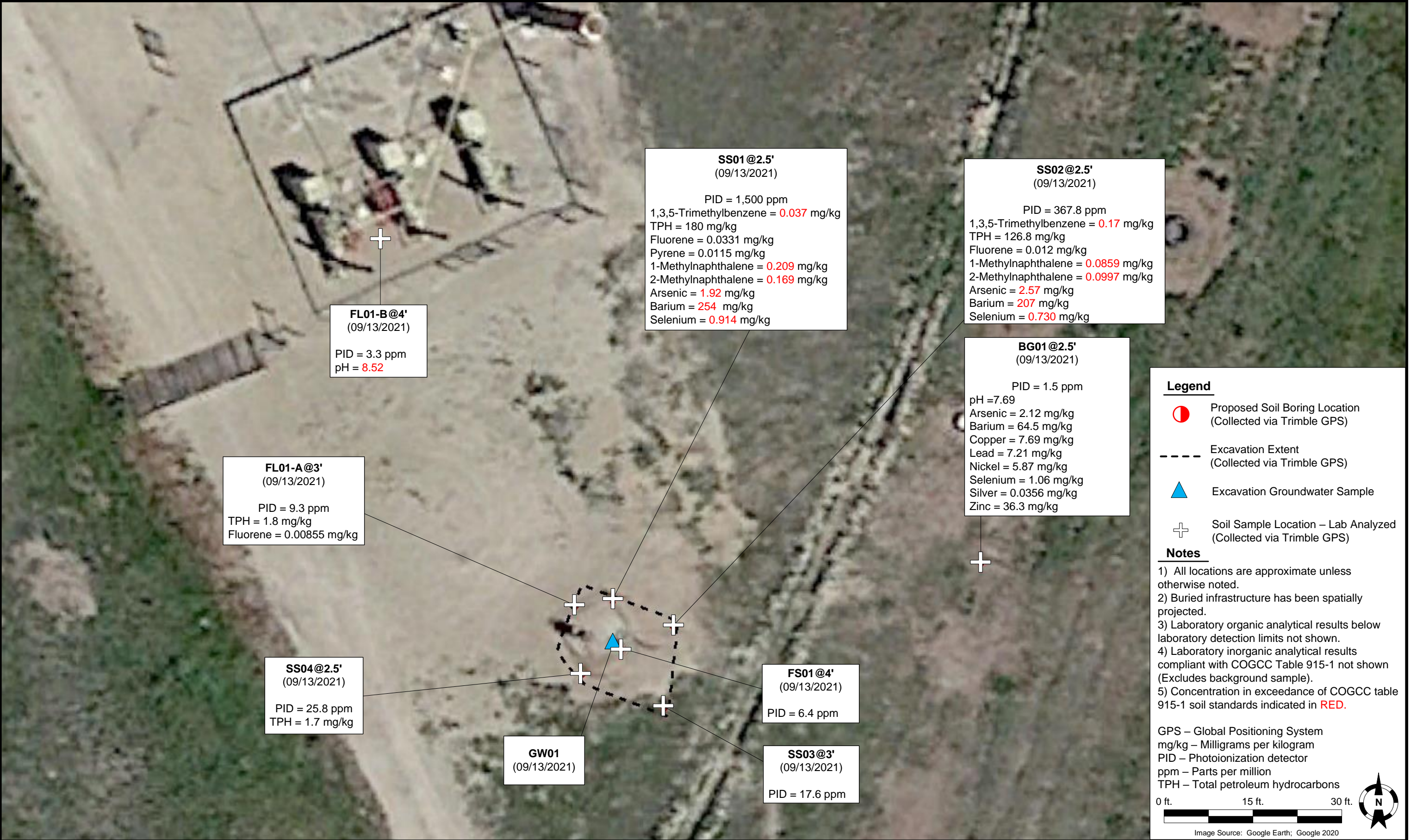
Figure 1


Site Location Map
 HSR Charlton 8-20 Wellhead
 SENE S20 T4N R65W
 Weld County, Colorado

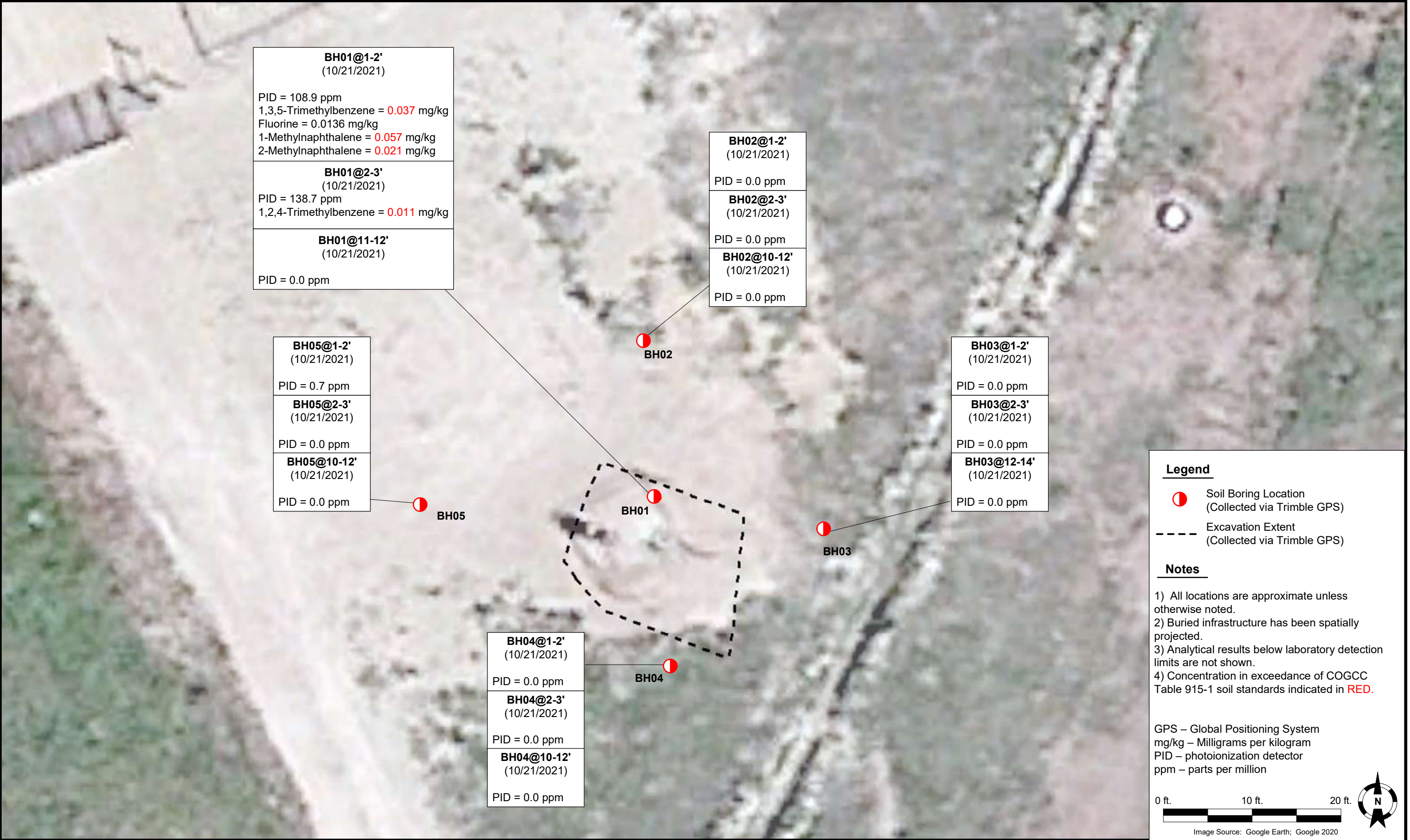





DATE:	11/29/2021	 <div>Tasman Geosciences, Inc. 6855 W 119th Avenue Broomfield, CO 80020</div>	Noble Energy, Inc. – DJ Basin HSR Charlton 08-20 Wellhead SENE, Section 20, Township 4 North, Range 65 West Weld County, Colorado	Site Overview Map	FIGURE 2
DESIGNED BY:	JW				
DRAWN BY:	CA				

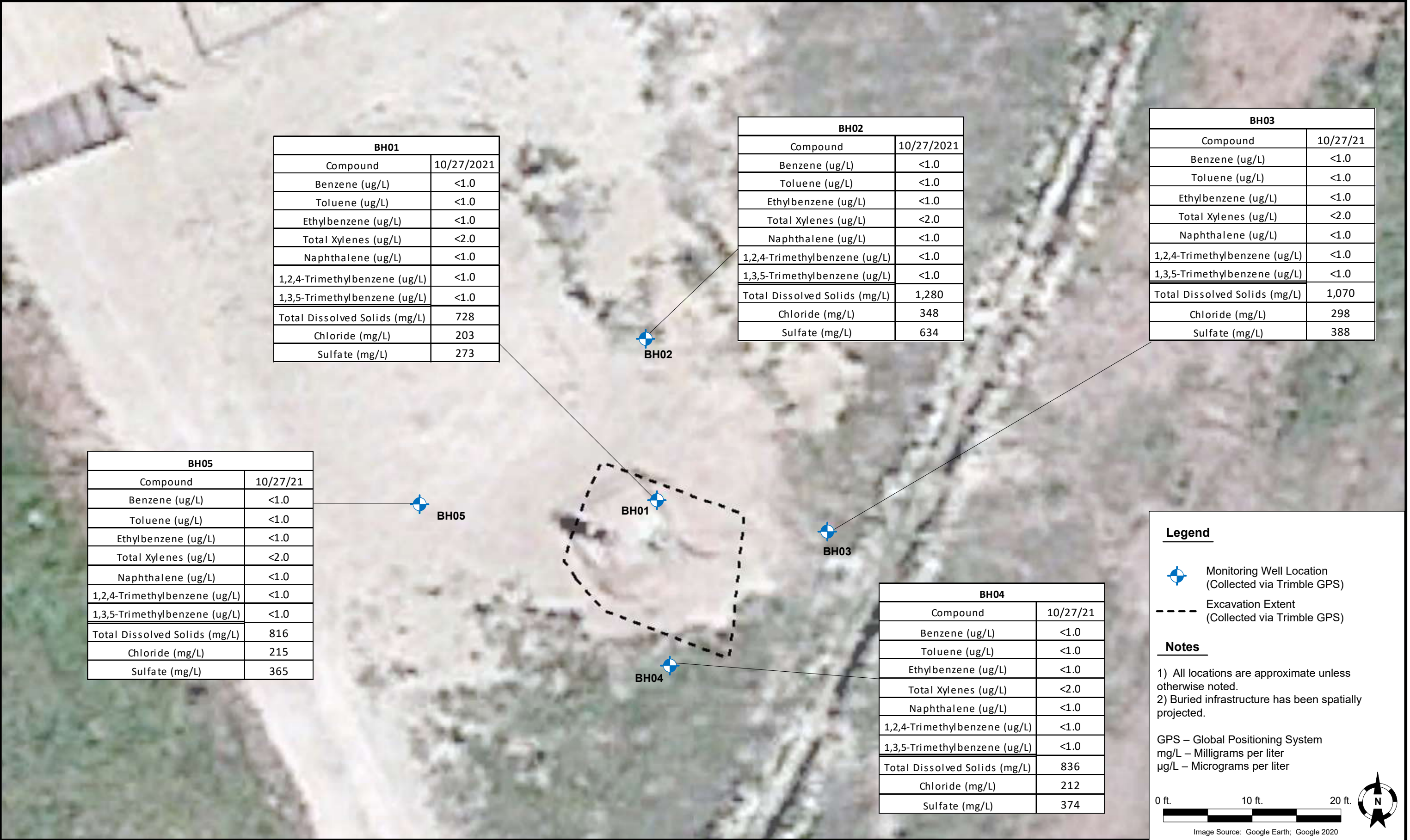


DATE:	09/13/2021	 TASMAN GEOSCIENCES	Tasman Geosciences, Inc. 6855 W 119 th Avenue Broomfield, CO 80020	Noble Energy, Inc. – DJ Basin HSR Charlton 08-20 Wellhead SENE, Section 20, Township 4 North, Range 65 West Weld County, Colorado	Soil and Groundwater Analytical Results Map (9/13/2021)	FIGURE 3
DESIGNED BY:	JW					
DRAWN BY:	CA					





DATE:	11/15/2021	 TASMAN Tasman Geosciences, Inc. 6855 W 119 th Ave. Broomfield, CO 80020	Noble Energy, Inc. – DJ Basin HSR Charlton 08-20 Wellhead SENE, Section 20, Township 4 North, Range 65 West Weld County, Colorado	Groundwater Potentiometric Surface Contour Map (10/27/2021)	FIGURE 5
DESIGNED BY:	JW				
DRAWN BY:	AD				



ATTACHMENT A

LABORATORY SOIL ANALYTICAL DATA REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 08, 2021

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - HSR Charlton 08-20

Work Order #2109182

Enclosed are the results of analyses for samples received by Summit Scientific on 09/13/21 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



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

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@2.5'	2109182-01	Soil	09/13/21 13:30	09/13/21 18:00
SS02@2.5'	2109182-02	Soil	09/13/21 13:35	09/13/21 18:00
SS03@2.5'	2109182-03	Soil	09/13/21 13:40	09/13/21 18:00
SS04@2.5'	2109182-04	Soil	09/13/21 12:40	09/13/21 18:00
FS01@4'	2109182-05	Soil	09/13/21 14:20	09/13/21 18:00
FL01-A@3'	2109182-06	Soil	09/13/21 12:45	09/13/21 18:00
FL01-B@3'	2109182-07	Soil	09/13/21 13:10	09/13/21 18:00
BG01@2.5'	2109182-08	Soil	09/13/21 14:00	09/13/21 18:00
GW01	2109182-10	Water	09/13/21 13:00	09/13/21 18:00

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.

2109182

303-277-9310

Page 1 of 1

Project Manager: Jake Whritenour, Invoice: Jeff White

E-Mail: jwhritenour@tasman-geo.com/ Noble Group

Project Name: HSR Charlton 08-20

Project Number: RC #: 425858729 Task #: 247037

Project Number: RC #: 425858729 Task #: 247037

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	8260 BTEX	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	Naphthalene	1,2,4-TMB 1,3,5	pH, EC, SAR by saturated paste	
1	SS01 @ 2.5'	9/13/21	1330	2			X			X				X	X	X	X	X				
2	SS02 @ 2.5'		1335	2			X			X				X	X	X	X	X				
3	SS03 @ 2.5'		1340	2			X			X				X	X	X	X	X				
4	SS04 @ 2.5'		1246	2			X			X				X	X	X	X	X				
5	F501 @ 4'		1420	2			X			X				X	X	X	X	X				
6	FL01-A @ 3'		1245	2			X			X				X	X	X	X	X				
7	FL01-B @ 3'		1310	2			X			X				X	X	X	X	Y				
8	B601 @ 2.5'		1400	2			X			X							X	X				HOLD
9	B601 @ 4'		1405	1			X			X							X	X				HOLD
10	Gw01		1300	3	X				X				X						X	X		
Relinquished by:		Date/Time:	Received by:				Date/Time:				Turn Around Time				(Check)				Notes:			
		9/13/21 1620	Tasman's Lock Box				9/13/21 1620				Same Day				72 hours							
Relinquished by:		Date/Time:	Received by:				Date/Time:				24 hours				X Standard							
Tasman's Lock Box		9/13/21 1800					9/13/21 1800				48 hours											
Relinquished by:		Date/Time:	Received by:				Date/Time:				Sample Integrity:											
											Temperature Upon Receipt:				14.4							
											Samples Intact:				Yes No							

Sample Receipt Checklist

S2 Work Order_____

Client: Noble FASMAN Client Project ID: HSR Carlton 08-20

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

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

Temp (°C)	14.4
-----------	------

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"/>	on ice
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , 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.

NG
Custodian Printed Name or Initials


Signature of Custodian

9/13/21
Date/Time



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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS01@2.5'
2109182-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 09/13/21 13:30									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.037	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	20	0.50	"	"	"	"	"	"	

Date Sampled: 09/13/21 13:30									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		264 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 09/13/21 13:30									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	160	50	mg/kg	1	BEI0334	09/15/21	09/15/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 09/13/21 13:30									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		120 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS01@2.5'
2109182-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/18/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0331	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0115	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.209	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.169	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		66.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		71.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.180	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS01@2.5'
2109182-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.92	0.227	mg/kg dry	1	BEJ0057	10/05/21	10/07/21	EPA 6020B
Barium	254	0.453	"	"	"	"	"	"
Cadmium	ND	0.227	"	"	"	"	"	"
Copper	6.84	0.453	"	"	"	"	"	"
Lead	6.88	0.227	"	"	"	"	"	"
Nickel	6.39	0.453	"	"	"	"	"	"
Selenium	0.914	0.295	"	"	"	"	"	"
Silver	0.0231	0.0227	"	"	"	"	"	"
Zinc	32.3	0.453	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEJ0061	10/05/21	10/05/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	32.5	0.0567	mg/L dry	1	BEI0350	09/16/21	09/21/21	EPA 6020B	
Magnesium	3.96	0.0567	"	"	"	"	"	"	
Sodium	3.04	0.0567	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.134	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS01@2.5'
2109182-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.2	%	1	BEI0349	09/16/21	09/17/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.708	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.04		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS02@2.5'
2109182-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.17	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6.8	0.50	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		144 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	120	50	mg/kg	1	BEI0334	09/15/21	09/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		123 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS02@2.5'
2109182-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/18/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0120	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0859	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0997	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		51.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		80.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.253	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS02@2.5'
2109182-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.57	0.227	mg/kg dry	1	BEJ0057	10/05/21	10/07/21	EPA 6020B
Barium	207	0.454	"	"	"	"	"	"
Cadmium	ND	0.227	"	"	"	"	"	"
Copper	7.76	0.454	"	"	"	"	"	"
Lead	11.4	0.227	"	"	"	"	"	"
Nickel	6.68	0.454	"	"	"	"	"	"
Selenium	0.730	0.295	"	"	"	"	"	"
Silver	0.0307	0.0227	"	"	"	"	"	"
Zinc	32.0	0.454	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEJ0061	10/05/21	10/05/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	42.3	0.0568	mg/L dry	1	BEI0350	09/16/21	09/21/21	EPA 6020B	
Magnesium	4.95	0.0568	"	"	"	"	"	"	
Sodium	3.55	0.0568	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.138	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS02@2.5'
2109182-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.0	%	1	BEI0349	09/16/21	09/17/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.860	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS03@2.5'
2109182-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEI0334	09/15/21	09/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		121 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS03@2.5'
2109182-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/19/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		63.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		89.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.142	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
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Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS03@2.5'
2109182-03 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Calcium	17.6	0.0601	mg/L dry	1	BEI0350	09/16/21	09/21/21	EPA 6020B
Magnesium	3.33	0.0601	"	"	"	"	"	"
Sodium	3.22	0.0601	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.185	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.2		%	1	BEI0349	09/16/21	09/17/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.853	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.94		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS04@2.5'
2109182-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.7	0.50	"	"	"	"	"	"	

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEI0334	09/15/21	09/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		120 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS04@2.5'
2109182-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/19/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.178	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS04@2.5'
2109182-04 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Calcium	17.2	0.0569	mg/L dry	1	BEI0350	09/16/21	09/22/21	EPA 6020B
Magnesium	3.14	0.0569	"	"	"	"	"	"
Sodium	1.39	0.0569	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0809	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.8		%	1	BEI0349	09/16/21	09/17/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.431	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.12		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FS01@4'
2109182-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEI0334	09/15/21	09/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		121 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FS01@4'
2109182-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/19/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		50.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.260	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FS01@4'
2109182-05 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Calcium	17.1	0.0626	mg/L dry	1	BEI0350	09/16/21	09/22/21	EPA 6020B
Magnesium	3.26	0.0626	"	"	"	"	"	"
Sodium	4.55	0.0626	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.264	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.9		%	1	BEI0349	09/16/21	09/17/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.572	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FL01-A@3'
2109182-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.8	0.50	"	"	"	"	"	"	

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		130 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEI0334	09/15/21	09/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		123 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FL01-A@3'
2109182-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/19/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.00855	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		46.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		69.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.163	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FL01-A@3'
2109182-06 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Calcium	21.7	0.0595	mg/L dry	1	BEI0350	09/16/21	09/22/21	EPA 6020B
Magnesium	3.23	0.0595	"	"	"	"	"	"
Sodium	1.92	0.0595	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.102	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.1		%	1	BEI0349	09/16/21	09/17/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.752	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.82		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FL01-B@3'
2109182-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEI0334	09/15/21	09/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		122 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FL01-B@3'
2109182-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/19/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		74.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		89.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.218	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FL01-B@3'
2109182-07 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Calcium	25.0	0.0565	mg/L dry	1	BEI0350	09/16/21	09/22/21	EPA 6020B
Magnesium	4.25	0.0565	"	"	"	"	"	"
Sodium	1.53	0.0565	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0745	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.4		%	1	BEI0349	09/16/21	09/17/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.311	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.52		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

BG01@2.5'
2109182-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/13/21 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.12	0.231	mg/kg dry	1	BEJ0057	10/05/21	10/07/21	EPA 6020B	
Barium	64.5	0.462	"	"	"	"	"	"	
Cadmium	ND	0.231	"	"	"	"	"	"	
Copper	7.69	0.462	"	"	"	"	"	"	
Lead	7.21	0.231	"	"	"	"	"	"	
Nickel	5.87	0.462	"	"	"	"	"	"	
Selenium	1.06	0.300	"	"	"	"	"	"	
Silver	0.0356	0.0231	"	"	"	"	"	"	
Zinc	36.3	0.462	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/13/21 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEJ0061	10/05/21	10/05/21	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	86.6		%	1	BEJ0060	"	10/05/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.69		pH Units	1	BEJ0073	10/05/21	10/05/21	EPA 9045D	

Summit Scientific

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Project Number: RC# 425858729 Task # 247037
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Reported:
10/08/21 12:57

GW01
2109182-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEI0275	09/13/21	09/14/21	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **09/13/21 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		140 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		21-167		"	"	"	"	

Summit Scientific

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Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

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 BEI0275 - EPA 5030 Water MS

Blank (BEI0275-BLK1)

Prepared: 09/13/21 Analyzed: 09/14/21

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.9	23-173			
Surrogate: Toluene-d8	14.1		"	13.3		106	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.5	21-167			

LCS (BEI0275-BS1)

Prepared: 09/13/21 Analyzed: 09/14/21

Benzene	28.9	1.0	ug/l	33.3		86.6	51-132			
Toluene	34.7	1.0	"	33.3		104	51-138			
Ethylbenzene	37.1	1.0	"	33.3		111	58-146			
m,p-Xylene	74.5	2.0	"	66.7		112	57-144			
o-Xylene	36.8	1.0	"	33.3		110	53-146			
Naphthalene	33.5	1.0	"	33.3		100	70-130			
1,2,4-Trimethylbenzene	39.3	1.0	"	33.3		118	70-130			
1,3,5-Trimethylbenzene	39.2	1.0	"	33.3		118	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.8	23-173			
Surrogate: Toluene-d8	13.5		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	21-167			

Matrix Spike (BEI0275-MS1)

Source: 2109158-01

Prepared: 09/13/21 Analyzed: 09/14/21

Benzene	28.6	1.0	ug/l	33.3	ND	85.9	34-141			
Toluene	33.2	1.0	"	33.3	ND	99.5	27-151			
Ethylbenzene	37.1	1.0	"	33.3	ND	111	29-160			
m,p-Xylene	73.7	2.0	"	66.7	ND	111	20-166			
o-Xylene	35.4	1.0	"	33.3	ND	106	33-159			
Naphthalene	43.0	1.0	"	33.3	ND	129	70-130			
1,2,4-Trimethylbenzene	38.5	1.0	"	33.3	ND	115	70-130			
1,3,5-Trimethylbenzene	38.1	1.0	"	33.3	ND	114	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.7	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.7	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		101	21-167			

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

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 BEI0275 - EPA 5030 Water MS

Matrix Spike Dup (BEI0275-MSD1)		Source: 2109158-01			Prepared: 09/13/21		Analyzed: 09/14/21			
Benzene	28.9	1.0	ug/l	33.3	ND	86.7	34-141	0.939	30	
Toluene	34.1	1.0	"	33.3	ND	102	27-151	2.85	30	
Ethylbenzene	37.0	1.0	"	33.3	ND	111	29-160	0.324	30	
m,p-Xylene	74.2	2.0	"	66.7	ND	111	20-166	0.743	30	
o-Xylene	35.9	1.0	"	33.3	ND	108	33-159	1.21	30	
Naphthalene	41.6	1.0	"	33.3	ND	125	70-130	3.21	30	
1,2,4-Trimethylbenzene	39.2	1.0	"	33.3	ND	118	70-130	1.98	30	
1,3,5-Trimethylbenzene	38.4	1.0	"	33.3	ND	115	70-130	0.707	30	
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.3		107	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.9	21-167			

Batch BEI0333 - EPA 5030 Soil MS

Blank (BEI0333-BLK1)		Prepared: 09/15/21 Analyzed: 09/16/21								
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	21-167			

Summit Scientific

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

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 BEI0333 - EPA 5030 Soil MS

LCS (BEI0333-BS1)

Prepared: 09/15/21 Analyzed: 09/16/21

Benzene	0.118	0.0020	mg/kg	0.100		118		70-130			
Toluene	0.104	0.0050	"	0.100		104		70-130			
Ethylbenzene	0.0900	0.0050	"	0.100		90.0		70-130			
m,p-Xylene	0.171	0.010	"	0.200		85.7		70-130			
o-Xylene	0.0898	0.0050	"	0.100		89.8		70-130			
1,2,4-Trimethylbenzene	0.0861	0.0050	"	0.100		86.1		70-130			
1,3,5-Trimethylbenzene	0.0835	0.0050	"	0.100		83.5		70-130			
Naphthalene	0.0892	0.0038	"	0.100		89.2		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0463		"	0.0400		116		23-173			
Surrogate: Toluene-d8	0.0437		"	0.0400		109		20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4		21-167			

Matrix Spike (BEI0333-MS1)

Source: 2109182-01

Prepared: 09/15/21 Analyzed: 09/16/21

Benzene	0.0811	0.0020	mg/kg	0.100	ND	81.1		70-130			
Toluene	0.0579	0.0050	"	0.100	ND	57.9		70-130			QM-07
Ethylbenzene	0.0368	0.0050	"	0.100	ND	36.8		70-130			QM-07
m,p-Xylene	0.152	0.010	"	0.200	ND	75.9		70-130			
o-Xylene	0.0834	0.0050	"	0.100	ND	83.4		70-130			
1,2,4-Trimethylbenzene	0.0949	0.0050	"	0.100	ND	94.9		70-130			
1,3,5-Trimethylbenzene	0.146	0.0050	"	0.100	0.0374	108		70-130			
Naphthalene	0.0680	0.0038	"	0.100	ND	68.0		70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0408		"	0.0400		102		23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2		20-170			
Surrogate: 4-Bromofluorobenzene	0.0450		"	0.0400		112		21-167			

Matrix Spike Dup (BEI0333-MSD1)

Source: 2109182-01

Prepared: 09/15/21 Analyzed: 09/16/21

Benzene	0.0663	0.0020	mg/kg	0.100	ND	66.3		70-130	20.0	30	QM-07
Toluene	0.0461	0.0050	"	0.100	ND	46.1		70-130	22.7	30	QM-07
Ethylbenzene	0.0257	0.0050	"	0.100	ND	25.7		70-130	35.5	30	QM-07
m,p-Xylene	0.114	0.010	"	0.200	ND	56.9		70-130	28.6	30	QM-07
o-Xylene	0.0799	0.0050	"	0.100	ND	79.9		70-130	4.26	30	
1,2,4-Trimethylbenzene	0.0659	0.0050	"	0.100	ND	65.9		70-130	36.0	30	QM-07
1,3,5-Trimethylbenzene	0.164	0.0050	"	0.100	0.0374	127		70-130	11.9	30	
Naphthalene	0.0480	0.0038	"	0.100	ND	48.0		70-130	34.5	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0395		"	0.0400		98.7		23-173			
Surrogate: Toluene-d8	0.0429		"	0.0400		107		20-170			
Surrogate: 4-Bromofluorobenzene	0.0487		"	0.0400		122		21-167			

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEI0334 - EPA 3550A

Blank (BEI0334-BLK1)

Prepared & Analyzed: 09/15/21

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BEI0334-BS1)

Prepared & Analyzed: 09/15/21

C10-C28 (DRO)	595	50	mg/kg	500	119	70-130
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Matrix Spike (BEI0334-MS1)

Source: 2109182-02

Prepared & Analyzed: 09/15/21

C10-C28 (DRO)	696	50	mg/kg	500	117	116	70-130
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Matrix Spike Dup (BEI0334-MSD1)

Source: 2109182-02

Prepared & Analyzed: 09/15/21

C10-C28 (DRO)	694	50	mg/kg	500	117	115	70-130	0.330	20
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Summit Scientific

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEI0310 - EPA 5030 Soil MS

Blank (BEI0310-BLK1)

Prepared: 09/15/21 Analyzed: 09/18/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0243		"	0.0333		72.8	40-150			
Surrogate: Fluoranthene-d10	0.0286		"	0.0333		85.9	40-150			

LCS (BEI0310-BS1)

Prepared: 09/15/21 Analyzed: 09/18/21

Acenaphthene	0.0315	0.00500	mg/kg	0.0333		94.6	31-137			
Anthracene	0.0356	0.00500	"	0.0333		107	30-120			
Benzo (a) anthracene	0.0326	0.00500	"	0.0333		97.8	30-120			
Benzo (a) pyrene	0.0314	0.00500	"	0.0333		94.1	30-120			
Benzo (b) fluoranthene	0.0298	0.00500	"	0.0333		89.4	30-120			
Benzo (k) fluoranthene	0.0290	0.00500	"	0.0333		86.9	30-120			
Chrysene	0.0309	0.00500	"	0.0333		92.8	30-120			
Dibenz (a,h) anthracene	0.0148	0.00500	"	0.0333		44.3	30-120			
Fluoranthene	0.0315	0.00500	"	0.0333		94.6	30-120			
Fluorene	0.0345	0.00500	"	0.0333		104	30-120			
Indeno (1,2,3-cd) pyrene	0.0168	0.00500	"	0.0333		50.4	30-120			
Pyrene	0.0342	0.00500	"	0.0333		103	35-142			
1-Methylnaphthalene	0.0257	0.00500	"	0.0333		77.2	35-142			
2-Methylnaphthalene	0.0251	0.00500	"	0.0333		75.4	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0242		"	0.0333		72.6	40-150			
Surrogate: Fluoranthene-d10	0.0337		"	0.0333		101	40-150			

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEI0310 - EPA 5030 Soil MS

Matrix Spike (BEI0310-MS1)			Source: 2109168-01		Prepared: 09/15/21		Analyzed: 09/18/21	
Acenaphthene	0.0226	0.00500	mg/kg	0.0333	ND	67.8	31-137	
Anthracene	0.0244	0.00500	"	0.0333	ND	73.1	30-120	
Benzo (a) anthracene	0.0256	0.00500	"	0.0333	ND	76.8	30-120	
Benzo (a) pyrene	0.0235	0.00500	"	0.0333	ND	70.4	30-120	
Benzo (b) fluoranthene	0.0324	0.00500	"	0.0333	ND	97.2	30-120	
Benzo (k) fluoranthene	0.0326	0.00500	"	0.0333	ND	97.9	30-120	
Chrysene	0.0242	0.00500	"	0.0333	ND	72.7	30-120	
Dibenz (a,h) anthracene	0.0104	0.00500	"	0.0333	ND	31.3	30-120	
Fluoranthene	0.0239	0.00500	"	0.0333	ND	71.7	30-120	
Fluorene	0.0250	0.00500	"	0.0333	ND	75.1	30-120	
Indeno (1,2,3-cd) pyrene	0.0118	0.00500	"	0.0333	ND	35.3	30-120	
Pyrene	0.0262	0.00500	"	0.0333	ND	78.5	35-142	
1-Methylnaphthalene	0.0189	0.00500	"	0.0333	ND	56.6	15-130	
2-Methylnaphthalene	0.0204	0.00500	"	0.0333	ND	61.2	15-130	
Surrogate: 2-Methylnaphthalene-d10	0.0183		"	0.0333		55.0	40-150	
Surrogate: Fluoranthene-d10	0.0246		"	0.0333		73.8	40-150	

Matrix Spike Dup (BEI0310-MSD1)			Source: 2109168-01		Prepared: 09/15/21		Analyzed: 09/18/21	
Acenaphthene	0.0263	0.00500	mg/kg	0.0333	ND	79.0	31-137	15.3
Anthracene	0.0279	0.00500	"	0.0333	ND	83.8	30-120	13.7
Benzo (a) anthracene	0.0281	0.00500	"	0.0333	ND	84.2	30-120	9.21
Benzo (a) pyrene	0.0262	0.00500	"	0.0333	ND	78.7	30-120	11.2
Benzo (b) fluoranthene	0.0380	0.00500	"	0.0333	ND	114	30-120	15.9
Benzo (k) fluoranthene	0.0304	0.00500	"	0.0333	ND	91.3	30-120	7.06
Chrysene	0.0266	0.00500	"	0.0333	ND	79.8	30-120	9.22
Dibenz (a,h) anthracene	0.0110	0.00500	"	0.0333	ND	32.9	30-120	5.15
Fluoranthene	0.0267	0.00500	"	0.0333	ND	80.1	30-120	11.1
Fluorene	0.0290	0.00500	"	0.0333	ND	87.0	30-120	14.6
Indeno (1,2,3-cd) pyrene	0.0123	0.00500	"	0.0333	ND	36.9	30-120	4.41
Pyrene	0.0283	0.00500	"	0.0333	ND	85.0	35-142	7.93
1-Methylnaphthalene	0.0200	0.00500	"	0.0333	ND	60.0	15-130	5.82
2-Methylnaphthalene	0.0227	0.00500	"	0.0333	ND	68.1	15-130	10.6
Surrogate: 2-Methylnaphthalene-d10	0.0209		"	0.0333		62.8	40-150	
Surrogate: Fluoranthene-d10	0.0280		"	0.0333		84.1	40-150	

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

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

Batch BEI0407 - EPA 3050B

Blank (BEI0407-BLK1)

Prepared: 09/20/21 Analyzed: 09/22/21

Boron ND 0.0100 mg/L

LCS (BEI0407-BS1)

Prepared: 09/20/21 Analyzed: 09/22/21

Boron 5.40 0.0100 mg/L 5.00 108 80-120

Duplicate (BEI0407-DUP1)

Source: 2109182-01

Prepared: 09/20/21 Analyzed: 09/22/21

Boron 0.180 0.0100 mg/L 0.180 0.293 20

Matrix Spike (BEI0407-MS1)

Source: 2109182-01

Prepared: 09/20/21 Analyzed: 09/22/21

Boron 5.57 0.0100 mg/L 5.00 0.180 108 75-125

Matrix Spike Dup (BEI0407-MSD1)

Source: 2109182-01

Prepared: 09/20/21 Analyzed: 09/22/21

Boron 5.53 0.0100 mg/L 5.00 0.180 107 75-125 0.746 25

Summit Scientific

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEJ0057 - EPA 3050B

Blank (BEJ0057-BLK1)

Prepared: 10/05/21 Analyzed: 10/07/21

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BEJ0057-BS1)

Prepared: 10/05/21 Analyzed: 10/07/21

Arsenic	48.0	0.200	mg/kg wet	40.0	120	80-120
Barium	47.6	0.400	"	40.0	119	80-120
Cadmium	2.34	0.200	"	2.00	117	80-120
Copper	48.0	0.400	"	40.0	120	80-120
Lead	20.4	0.200	"	20.0	102	80-120
Nickel	46.3	0.400	"	40.0	116	80-120
Selenium	4.66	0.260	"	4.00	116	80-120
Silver	2.26	0.0200	"	2.00	113	80-120
Zinc	44.6	0.400	"	40.0	112	80-120

Duplicate (BEJ0057-DUP1)

Source: 2109182-01

Prepared: 10/05/21 Analyzed: 10/07/21

Arsenic	1.75	0.227	mg/kg dry	1.92	9.49	20
Barium	249	0.453	"	254	2.01	20
Cadmium	0.137	0.227	"	0.122	11.4	20
Copper	7.48	0.453	"	6.84	8.87	20
Lead	8.10	0.227	"	6.88	16.3	20
Nickel	6.43	0.453	"	6.39	0.733	20
Selenium	1.03	0.295	"	0.914	11.9	20
Silver	0.0239	0.0227	"	0.0231	3.28	20
Zinc	33.2	0.453	"	32.3	2.73	20

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEJ0057 - EPA 3050B

Matrix Spike (BEJ0057-MS1)

Source: 2109182-01

Prepared: 10/05/21 Analyzed: 10/07/21

Arsenic	57.8	0.227	mg/kg dry	45.3	1.92	123	75-125
Barium	307	0.453	"	45.3	254	117	75-125
Cadmium	2.66	0.227	"	2.27	0.122	112	75-125
Copper	55.9	0.453	"	45.3	6.84	108	75-125
Lead	32.9	0.227	"	22.7	6.88	115	75-125
Nickel	56.3	0.453	"	45.3	6.39	110	75-125
Selenium	6.28	0.295	"	4.53	0.914	118	75-125
Silver	2.32	0.0227	"	2.27	0.0231	101	75-125
Zinc	82.4	0.453	"	45.3	32.3	110	75-125

Matrix Spike Dup (BEJ0057-MSD1)

Source: 2109182-01

Prepared: 10/05/21 Analyzed: 10/07/21

Arsenic	53.1	0.227	mg/kg dry	45.3	1.92	113	75-125	8.43	25
Barium	291	0.453	"	45.3	254	81.2	75-125	5.41	25
Cadmium	2.83	0.227	"	2.27	0.122	120	75-125	6.29	25
Copper	59.2	0.453	"	45.3	6.84	115	75-125	5.82	25
Lead	33.9	0.227	"	22.7	6.88	119	75-125	2.81	25
Nickel	60.7	0.453	"	45.3	6.39	120	75-125	7.48	25
Selenium	6.36	0.295	"	4.53	0.914	120	75-125	1.20	25
Silver	2.48	0.0227	"	2.27	0.0231	108	75-125	6.68	25
Zinc	82.5	0.453	"	45.3	32.3	111	75-125	0.175	25

Post Spike (BEJ0057-PS1)

Source: 2109182-01

Prepared: 10/05/21 Analyzed: 10/07/21

Arsenic	127		ug/l	100	4.24	123	75-125
Barium	676		"	100	561	116	75-125
Cadmium	5.72		"	5.00	0.269	109	75-125
Copper	121		"	100	15.1	106	75-125
Lead	59.8		"	50.0	15.2	89.3	75-125
Nickel	122		"	100	14.1	108	75-125
Selenium	14.5		"	10.0	2.02	125	75-125
Silver	5.09		"	5.00	0.0509	101	75-125
Zinc	180		"	100	71.3	109	75-125

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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BEJ0061 - 3060A Mod

Blank (BEJ0061-BLK1)

Prepared & Analyzed: 10/05/21

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BEJ0061-BS1)

Prepared & Analyzed: 10/05/21

Chromium, Hexavalent 28.0 0.30 mg/kg wet 25.0 112 80-120

Duplicate (BEJ0061-DUP1)

Source: 2109182-01

Prepared & Analyzed: 10/05/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BEJ0061-MS1)

Source: 2109182-01

Prepared & Analyzed: 10/05/21

Chromium, Hexavalent 29.2 0.30 mg/kg dry 28.3 ND 103 75-125

Matrix Spike Dup (BEJ0061-MSD1)

Source: 2109182-01

Prepared & Analyzed: 10/05/21

Chromium, Hexavalent 29.2 0.30 mg/kg dry 28.3 ND 103 75-125 0.00 20

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BEI0350 - General Preparation

Blank (BEI0350-BLK1)

Prepared: 09/16/21 Analyzed: 09/21/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEI0350-BS1)

Prepared: 09/16/21 Analyzed: 09/21/21

Calcium	5.50	0.0500	mg/L wet	5.00	110	70-130
Magnesium	5.11	0.0500	"	5.00	102	70-130
Sodium	4.96	0.0500	"	5.00	99.2	70-130

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

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

Batch BEI0349 - General Preparation

Duplicate (BEI0349-DUP1)		Source: 2109182-01			Prepared: 09/16/21 Analyzed: 09/17/21					
% Solids	88.4		%		88.2			0.166	20	

Batch BEJ0060 - General Preparation

Duplicate (BEJ0060-DUP1)		Source: 2109182-08			Prepared & Analyzed: 10/05/21					
% Solids	85.8		%		86.6			0.841	20	

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

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BEI0351 - General Preparation

Blank (BEI0351-BLK1)

Prepared: 09/16/21 Analyzed: 09/17/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEI0351-BS1)

Prepared: 09/16/21 Analyzed: 09/17/21

Specific Conductance (EC) 0.161 0.0100 mmhos/cm 0.150 107 90-110

Duplicate (BEI0351-DUP1)

Source: 2109173-01

Prepared: 09/16/21 Analyzed: 09/17/21

Specific Conductance (EC) 4.08 0.0100 mmhos/cm 4.08 0.00 20

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

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BEI0352 - General Preparation

LCS (BEI0352-BS1)

Prepared: 09/16/21 Analyzed: 09/17/21

pH	9.27		pH Units	9.21	101	95-105
----	------	--	----------	------	-----	--------

Duplicate (BEI0352-DUP1)

Source: 2109173-01

Prepared: 09/16/21 Analyzed: 09/17/21

pH	8.31		pH Units	8.31		0.00	20
----	------	--	----------	------	--	------	----

Batch BEJ0073 - General Preparation

LCS (BEJ0073-BS1)

Prepared & Analyzed: 10/05/21

pH	9.06		pH Units	9.21	98.4	95-105
----	------	--	----------	------	------	--------

Duplicate (BEJ0073-DUP1)

Source: 2109182-08

Prepared & Analyzed: 10/05/21

pH	7.70		pH Units	7.69		0.130	20
----	------	--	----------	------	--	-------	----

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

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

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.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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

November 02, 2021

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

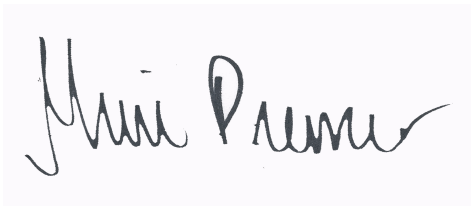
Broomfield, CO 80020

RE: Noble - HSR Charlton 08-20

Work Order #2110380

Enclosed are the results of analyses for samples received by Summit Scientific on 10/21/21 16:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@1-2'	2110380-01	Soil	10/21/21 09:50	10/21/21 16:50
BH01@2-3'	2110380-02	Soil	10/21/21 09:55	10/21/21 16:50
BH01@11-12'	2110380-03	Soil	10/21/21 10:40	10/21/21 16:50
BH02@1-2'	2110380-04	Soil	10/21/21 09:28	10/21/21 16:50
BH02@2-3'	2110380-05	Soil	10/21/21 09:30	10/21/21 16:50
BH02@10-12'	2110380-06	Soil	10/21/21 12:25	10/21/21 16:50
BH03@1-2'	2110380-07	Soil	10/21/21 09:58	10/21/21 16:50
BH03@2-3'	2110380-08	Soil	10/21/21 10:00	10/21/21 16:50
BH03@12-14'	2110380-09	Soil	10/21/21 11:55	10/21/21 16:50
BH04@1-2'	2110380-10	Soil	10/21/21 10:03	10/21/21 16:50
BH04@2-3'	2110380-11	Soil	10/21/21 10:05	10/21/21 16:50
BH04@12-14'	2110380-12	Soil	10/21/21 11:10	10/21/21 16:50
BH05@1-2'	2110380-13	Soil	10/21/21 09:23	10/21/21 16:50
BH05@2-3'	2110380-14	Soil	10/21/21 09:25	10/21/21 16:50
BH05@10-12'	2110380-15	Soil	10/21/21 13:45	10/21/21 16:50

Summit Scientific

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S_2

303-277-9310

Page 1 of 2

Project Number:

www.s2scientific.com

Summit Scientific

S₂

2110380.2

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

Page 2 of 2

Client:	Noble / Tasman Geosciences	Project Manager:	Jake Whritenour, Invoice: <u>Jacob Evans</u>
Address:	6855 W. 119th Ave.	E-Mail:	jwhritenour@tasman-geo.com/ Noble Group
City/State/Zip:	Broomfield / CO/ 80020		
Phone:	303-827-1511	Project Name:	HSR Charlton 08-20
Sampler Name: Hunter Merlo		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	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	Barium		
1	BH04 @ 2-3'	10/21/21	1005	1			X			X				X	X	X			X		pH, EC, SAR by saturated paste
2	BH04 @ 12-14'		1110	1			X			X				X	X	X					
3	BH05 @ 1-2'		0923	1			X			X				X	X	X					
4	BH05 @ 2-3'		0925	1			X			X				X	X	X			X		
5	BH05 @ 10-12'		1345	1			X			X				X	X	X					
6																					
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check) ___ Same Day 72 hours ___ 24 hours <u>X</u> Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: <u>3.4</u> Samples Intact: <u>Yes</u> No	Notes:
<u>Hunter Merlo</u>	10/21/21 1650	Tasman's Lock Box	10/21/21 1650		
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Tasman's Lock Box		<u>[Signature]</u>	10/21/21 1650		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

2/2

2110380

Sample Receipt Checklist

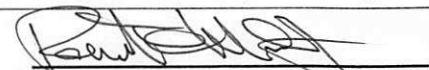
S2 Work Order#

Client: Noble/Tasman Client Project ID: HSR Charlton 08-20Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other ☒ Airbill #: _____Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)Temp (°C) 3.4

Thermometer ID: G86A9201901378

	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 if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<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.

 Custodian Printed Name or Initials

10-21-21
 Date/Time



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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH01@1-2'
2110380-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		125 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH01@1-2'
2110380-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/27/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0136	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0570	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0210	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		77.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.0 %	40-150		"	"	"	"	

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH01@2-3'
2110380-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 09:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.011	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		81.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		119 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 09:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH01@2-3'
2110380-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/27/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		79.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **10/21/21 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	129	0.400	mg/kg dry	1	BEJ0569	10/28/21	10/28/21	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/21/21 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH01@2-3'
2110380-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	80.9	%	1	BEJ0428	10/22/21	10/22/21	Calculation
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Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH01@11-12'
2110380-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		79.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH01@11-12'
2110380-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/27/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		92.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.5 %	40-150		"	"	"	"	

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH02@1-2'
2110380-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 09:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		85.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.0 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 09:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH02@1-2'
2110380-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/27/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		86.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.5 %	40-150		"	"	"	"	

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH02@2-3'
2110380-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		78.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH02@2-3'
2110380-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/27/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		84.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **10/21/21 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	76.2	0.400	mg/kg dry	1	BEJ0569	10/28/21	10/28/21	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/21/21 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH02@2-3'
2110380-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.7	%	1	BEJ0428	10/22/21	10/22/21	Calculation
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH02@10-12'
2110380-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		79.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.2 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH02@10-12'
2110380-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/27/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		84.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		65.9 %	40-150		"	"	"	"	

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH03@1-2'
2110380-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 09:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		82.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.0 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 09:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH03@1-2'
2110380-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 09:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/27/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		92.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.7 %	40-150		"	"	"	"	

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH03@2-3'
2110380-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		75.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.6 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH03@2-3'
2110380-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/28/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		79.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **10/21/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	63.2	0.400	mg/kg dry	1	BEJ0569	10/28/21	10/28/21	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/21/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH03@2-3'
2110380-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.4	%	1	BEJ0428	10/22/21	10/22/21	Calculation
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH03@12-14'
2110380-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		79.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH03@12-14'
2110380-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/28/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		72.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.4 %	40-150		"	"	"	"	

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Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH04@1-2'
2110380-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 10:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 10:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		82.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.3 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 10:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 10:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		121 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
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Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH04@1-2'
2110380-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 10:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/28/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 10:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		65.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		45.1 %	40-150		"	"	"	"	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH04@2-3'
2110380-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		78.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.1 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH04@2-3'
2110380-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/28/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		73.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **10/21/21 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	79.1	0.400	mg/kg dry	1	BEJ0569	10/28/21	10/28/21	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/21/21 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH04@2-3'
2110380-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.8	%	1	BEJ0428	10/22/21	10/22/21	Calculation
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH04@12-14'
2110380-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		81.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH04@12-14'
2110380-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/28/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		61.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		49.6 %	40-150		"	"	"	"	

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH05@1-2'
2110380-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 09:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		79.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 09:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH05@1-2'
2110380-13 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 09:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/28/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		66.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		52.3 %	40-150		"	"	"	"	

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Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH05@2-3'
2110380-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 09:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		78.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.3 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 09:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH05@2-3'
2110380-14 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/28/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		73.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **10/21/21 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	55.2	0.400	mg/kg dry	1	BEJ0569	10/28/21	10/28/21	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/21/21 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH05@2-3'
2110380-14 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.9	%	1	BEJ0428	10/22/21	10/22/21	Calculation
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Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH05@10-12'
2110380-15 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/21 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEJ0519	10/26/21	10/27/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/21/21 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		79.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.1 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/21 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEJ0520	10/26/21	10/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/21 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		113 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

BH05@10-12'
2110380-15 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/21/21 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BEJ0479	10/26/21	10/29/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/21/21 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		78.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.8 %	40-150		"	"	"	"	

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Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

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 BEJ0519 - EPA 5030 Soil MS

Blank (BEJ0519-BLK1)

Prepared & Analyzed: 10/26/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0308		"	0.0400		77.0	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		98.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0351		"	0.0400		87.7	21-167			

LCS (BEJ0519-BS1)

Prepared: 10/26/21 Analyzed: 10/27/21

Benzene	0.0643	0.0020	mg/kg	0.0750		85.7	70-130			
Toluene	0.0629	0.0050	"	0.0750		83.8	70-130			
Ethylbenzene	0.0765	0.0050	"	0.0750		102	70-130			
m,p-Xylene	0.146	0.010	"	0.150		97.5	70-130			
o-Xylene	0.0616	0.0050	"	0.0750		82.2	70-130			
1,2,4-Trimethylbenzene	0.0537	0.0050	"	0.0750		71.6	70-130			
1,3,5-Trimethylbenzene	0.0599	0.0050	"	0.0750		79.9	70-130			
Naphthalene	0.0657	0.0038	"	0.0750		87.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0282		"	0.0400		70.6	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0342		"	0.0400		85.6	21-167			

Matrix Spike (BEJ0519-MS1)

Source: 2110377-01

Prepared: 10/26/21 Analyzed: 10/27/21

Benzene	0.0602	0.0020	mg/kg	0.0750	ND	80.3	70-130			
Toluene	0.0621	0.0050	"	0.0750	ND	82.8	70-130			
Ethylbenzene	0.0819	0.0050	"	0.0750	ND	109	70-130			
m,p-Xylene	0.153	0.010	"	0.150	ND	102	70-130			
o-Xylene	0.0650	0.0050	"	0.0750	ND	86.6	70-130			
1,2,4-Trimethylbenzene	0.0599	0.0050	"	0.0750	ND	79.8	70-130			
1,3,5-Trimethylbenzene	0.0667	0.0050	"	0.0750	ND	88.9	70-130			
Naphthalene	0.0564	0.0038	"	0.0750	ND	75.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0182		"	0.0400		45.5	23-173			
Surrogate: Toluene-d8	0.0389		"	0.0400		97.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0334		"	0.0400		83.4	21-167			

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Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

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 BEJ0519 - EPA 5030 Soil MS

Matrix Spike Dup (BEJ0519-MSD1)		Source: 2110377-01			Prepared: 10/26/21 Analyzed: 10/27/21					
Benzene	0.0669	0.0020	mg/kg	0.0750	ND	89.2	70-130	10.4	30	
Toluene	0.0668	0.0050	"	0.0750	ND	89.1	70-130	7.40	30	
Ethylbenzene	0.0797	0.0050	"	0.0750	ND	106	70-130	2.67	30	
m,p-Xylene	0.151	0.010	"	0.150	ND	100	70-130	1.29	30	
o-Xylene	0.0652	0.0050	"	0.0750	ND	87.0	70-130	0.369	30	
1,2,4-Trimethylbenzene	0.0577	0.0050	"	0.0750	ND	76.9	70-130	3.73	30	
1,3,5-Trimethylbenzene	0.0651	0.0050	"	0.0750	ND	86.8	70-130	2.37	30	
Naphthalene	0.0642	0.0038	"	0.0750	ND	85.6	70-130	13.0	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0259		"	0.0400		64.6	23-173			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0338		"	0.0400		84.4	21-167			

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Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEJ0520 - EPA 3550A

Blank (BEJ0520-BLK1)

Prepared & Analyzed: 10/26/21

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BEJ0520-BS1)

Prepared & Analyzed: 10/26/21

C10-C28 (DRO)	430	50	mg/kg	500	86.0	70-130
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Matrix Spike (BEJ0520-MS1)

Source: 2110377-01

Prepared: 10/26/21 Analyzed: 10/27/21

C10-C28 (DRO)	453	50	mg/kg	500	41.2	82.3	70-130
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Matrix Spike Dup (BEJ0520-MSD1)

Source: 2110377-01

Prepared: 10/26/21 Analyzed: 10/27/21

C10-C28 (DRO)	452	50	mg/kg	500	41.2	82.2	70-130	0.109	20
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Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEJ0479 - EPA 5030 Soil MS

Blank (BEJ0479-BLK1)

Prepared: 10/25/21 Analyzed: 10/27/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0273		"	0.0333		81.8	40-150			
Surrogate: Fluoranthene-d10	0.0224		"	0.0333		67.1	40-150			

LCS (BEJ0479-BS1)

Prepared: 10/25/21 Analyzed: 10/27/21

Acenaphthene	0.0321	0.00500	mg/kg	0.0333		96.4	31-137			
Anthracene	0.0316	0.00500	"	0.0333		94.8	30-120			
Benzo (a) anthracene	0.0306	0.00500	"	0.0333		91.7	30-120			
Benzo (a) pyrene	0.0278	0.00500	"	0.0333		83.5	30-120			
Benzo (b) fluoranthene	0.0324	0.00500	"	0.0333		97.2	30-120			
Benzo (k) fluoranthene	0.0331	0.00500	"	0.0333		99.2	30-120			
Chrysene	0.0292	0.00500	"	0.0333		87.5	30-120			
Dibenz (a,h) anthracene	0.0189	0.00500	"	0.0333		56.7	30-120			
Fluoranthene	0.0342	0.00500	"	0.0333		103	30-120			
Fluorene	0.0315	0.00500	"	0.0333		94.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0147	0.00500	"	0.0333		44.1	30-120			
Pyrene	0.0308	0.00500	"	0.0333		92.5	35-142			
1-Methylnaphthalene	0.0358	0.00500	"	0.0333		107	35-142			
2-Methylnaphthalene	0.0329	0.00500	"	0.0333		98.6	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0377		"	0.0333		113	40-150			
Surrogate: Fluoranthene-d10	0.0310		"	0.0333		93.0	40-150			

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6855 W. 119th Ave.
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Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEJ0479 - EPA 5030 Soil MS

Matrix Spike (BEJ0479-MS1)				Source: 2110376-01		Prepared: 10/25/21		Analyzed: 10/27/21	
Acenaphthene	0.0234	0.00500	mg/kg	0.0333	ND	70.1	31-137		
Anthracene	0.0231	0.00500	"	0.0333	ND	69.4	30-120		
Benzo (a) anthracene	0.0235	0.00500	"	0.0333	ND	70.4	30-120		
Benzo (a) pyrene	0.0213	0.00500	"	0.0333	ND	63.9	30-120		
Benzo (b) fluoranthene	0.0248	0.00500	"	0.0333	ND	74.3	30-120		
Benzo (k) fluoranthene	0.0255	0.00500	"	0.0333	ND	76.6	30-120		
Chrysene	0.0227	0.00500	"	0.0333	ND	68.2	30-120		
Dibenz (a,h) anthracene	0.0135	0.00500	"	0.0333	ND	40.4	30-120		
Fluoranthene	0.0253	0.00500	"	0.0333	ND	76.0	30-120		
Fluorene	0.0236	0.00500	"	0.0333	ND	70.7	30-120		
Indeno (1,2,3-cd) pyrene	0.0113	0.00500	"	0.0333	ND	33.8	30-120		
Pyrene	0.0247	0.00500	"	0.0333	ND	74.1	35-142		
1-Methylnaphthalene	0.0265	0.00500	"	0.0333	ND	79.4	15-130		
2-Methylnaphthalene	0.0250	0.00500	"	0.0333	ND	75.1	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0277		"	0.0333		83.0	40-150		
Surrogate: Fluoranthene-d10	0.0237		"	0.0333		71.1	40-150		

Matrix Spike Dup (BEJ0479-MSD1)				Source: 2110376-01		Prepared: 10/25/21		Analyzed: 10/27/21	
Acenaphthene	0.0225	0.00500	mg/kg	0.0333	ND	67.5	31-137	3.88	30
Anthracene	0.0224	0.00500	"	0.0333	ND	67.2	30-120	3.20	30
Benzo (a) anthracene	0.0230	0.00500	"	0.0333	ND	68.9	30-120	2.19	30
Benzo (a) pyrene	0.0208	0.00500	"	0.0333	ND	62.4	30-120	2.40	30
Benzo (b) fluoranthene	0.0249	0.00500	"	0.0333	ND	74.6	30-120	0.465	30
Benzo (k) fluoranthene	0.0254	0.00500	"	0.0333	ND	76.1	30-120	0.576	30
Chrysene	0.0227	0.00500	"	0.0333	ND	68.2	30-120	0.0762	30
Dibenz (a,h) anthracene	0.0129	0.00500	"	0.0333	ND	38.8	30-120	4.07	30
Fluoranthene	0.0249	0.00500	"	0.0333	ND	74.8	30-120	1.62	30
Fluorene	0.0238	0.00500	"	0.0333	ND	71.5	30-120	1.12	30
Indeno (1,2,3-cd) pyrene	0.0103	0.00500	"	0.0333	ND	30.9	30-120	8.96	30
Pyrene	0.0246	0.00500	"	0.0333	ND	73.9	35-142	0.274	30
1-Methylnaphthalene	0.0258	0.00500	"	0.0333	ND	77.4	15-130	2.54	50
2-Methylnaphthalene	0.0246	0.00500	"	0.0333	ND	73.8	15-130	1.75	50
Surrogate: 2-Methylnaphthalene-d10	0.0269		"	0.0333		80.6	40-150		
Surrogate: Fluoranthene-d10	0.0236		"	0.0333		70.8	40-150		

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 - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEJ0569 - EPA 3050B

Blank (BEJ0569-BLK1)

Prepared & Analyzed: 10/28/21

Barium ND 0.400 mg/kg wet

LCS (BEJ0569-BS1)

Prepared & Analyzed: 10/28/21

Barium 41.5 0.400 mg/kg wet 40.0 104 80-120

Duplicate (BEJ0569-DUP1)

Source: 2110380-02

Prepared & Analyzed: 10/28/21

Barium 266 0.400 mg/kg dry 129 69.0 20 QM-02

Matrix Spike (BEJ0569-MS1)

Source: 2110380-02

Prepared & Analyzed: 10/28/21

Barium 370 0.400 mg/kg dry 49.4 129 487 75-125 QM-02

Matrix Spike Dup (BEJ0569-MSD1)

Source: 2110380-02

Prepared & Analyzed: 10/28/21

Barium 169 0.400 mg/kg dry 49.4 129 79.3 75-125 74.8 25 QM-02

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

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

Batch BEJ0428 - General Preparation

Duplicate (BEJ0428-DUP1)

Source: 2110359-01

Prepared & Analyzed: 10/22/21

% Solids	91.1	%		92.2		1.23	20
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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 - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/02/21 13:36

Notes and Definitions

QM-02	The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
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

BORING LOGS



6899 Pecos Street, Unit C
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Hunter Merlo

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Hand Auger/AMS Power Probe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 10/21/2021

TOTAL WELL DEPTH (FT. BGS): 12

DEPTH TO WATER (FT. BGS): 2

HSR Charlton 08-20

BORING / WELL ID: BH01

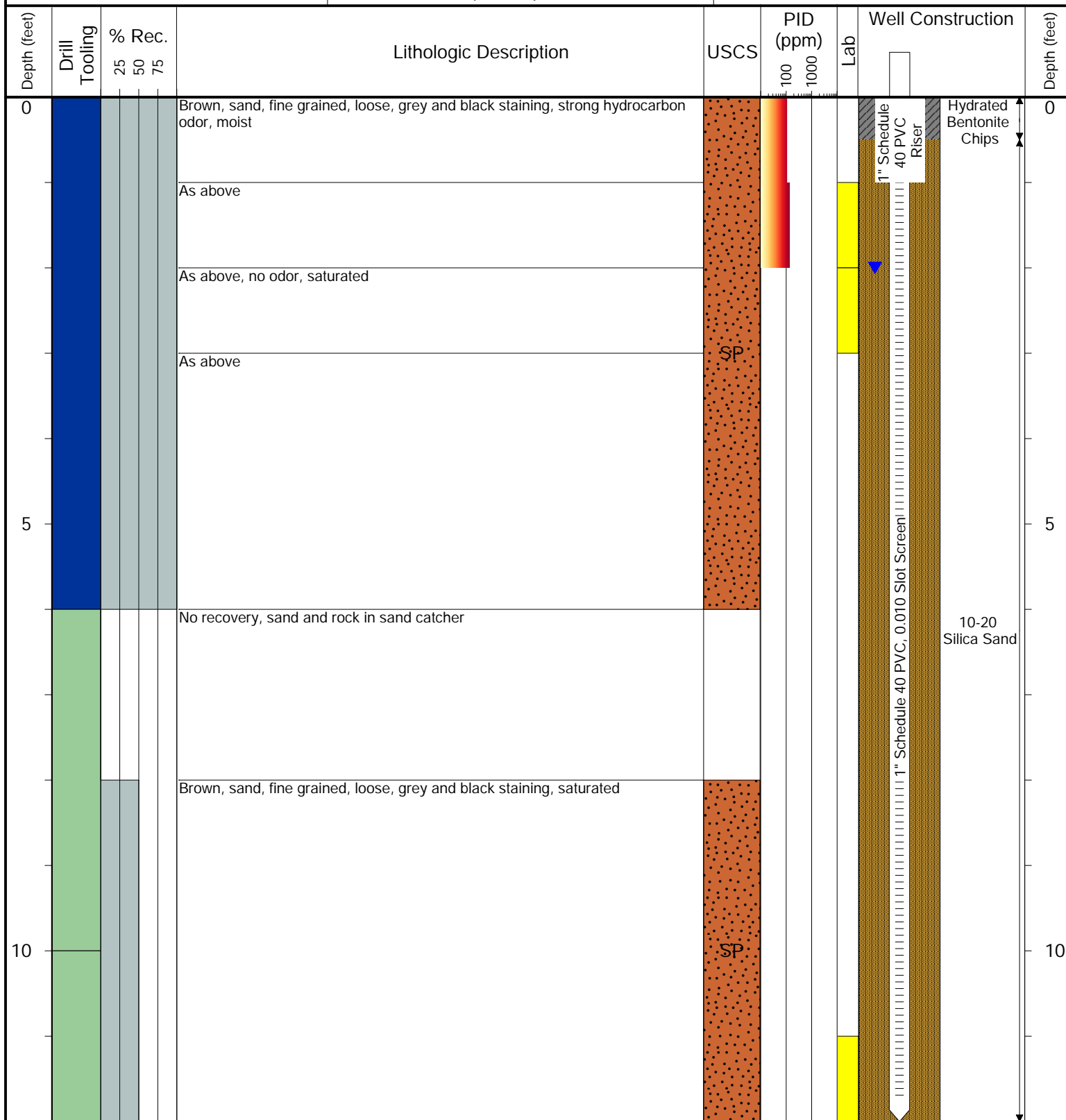
LOCATION: Weld County, Colorado

LATITUDE: 40.300076604177

LONGITUDE: -104.68049272838

CASING ELEVATION (FT. AMSL): 4,709.93

GROUND ELEVATION (FT. AMSL): 4,739.49



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Hunter Merlo

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: AMS Power Probe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 10/21/2021

TOTAL WELL DEPTH (FT. BGS): 12

DEPTH TO WATER (FT. BGS): 2.5

HSR Charlton 08-20

BORING / WELL ID: BH02

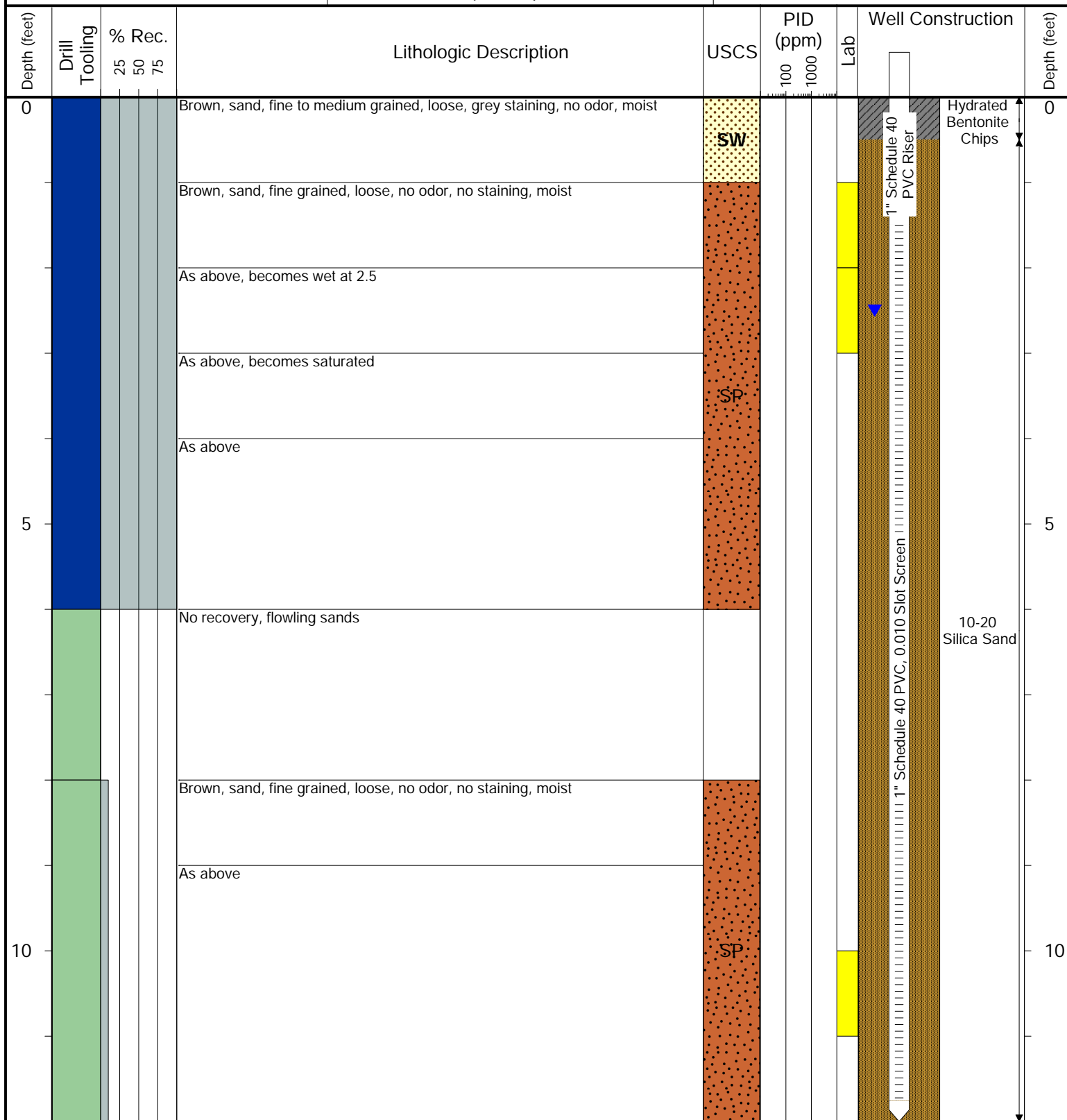
LOCATION: Weld County, Colorado

LATITUDE: 40.30012786887

LONGITUDE: -104.68050080379

CASING ELEVATION (FT. AMSL): 4,706.96

GROUND ELEVATION (FT. AMSL): 4,740.9



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Hunter Merlo

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: AMS Power Probe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 10/21/2021

TOTAL WELL DEPTH (FT. BGS): 14

DEPTH TO WATER (FT. BGS): 3

HSR Charlton 08-20

BORING / WELL ID: BH03

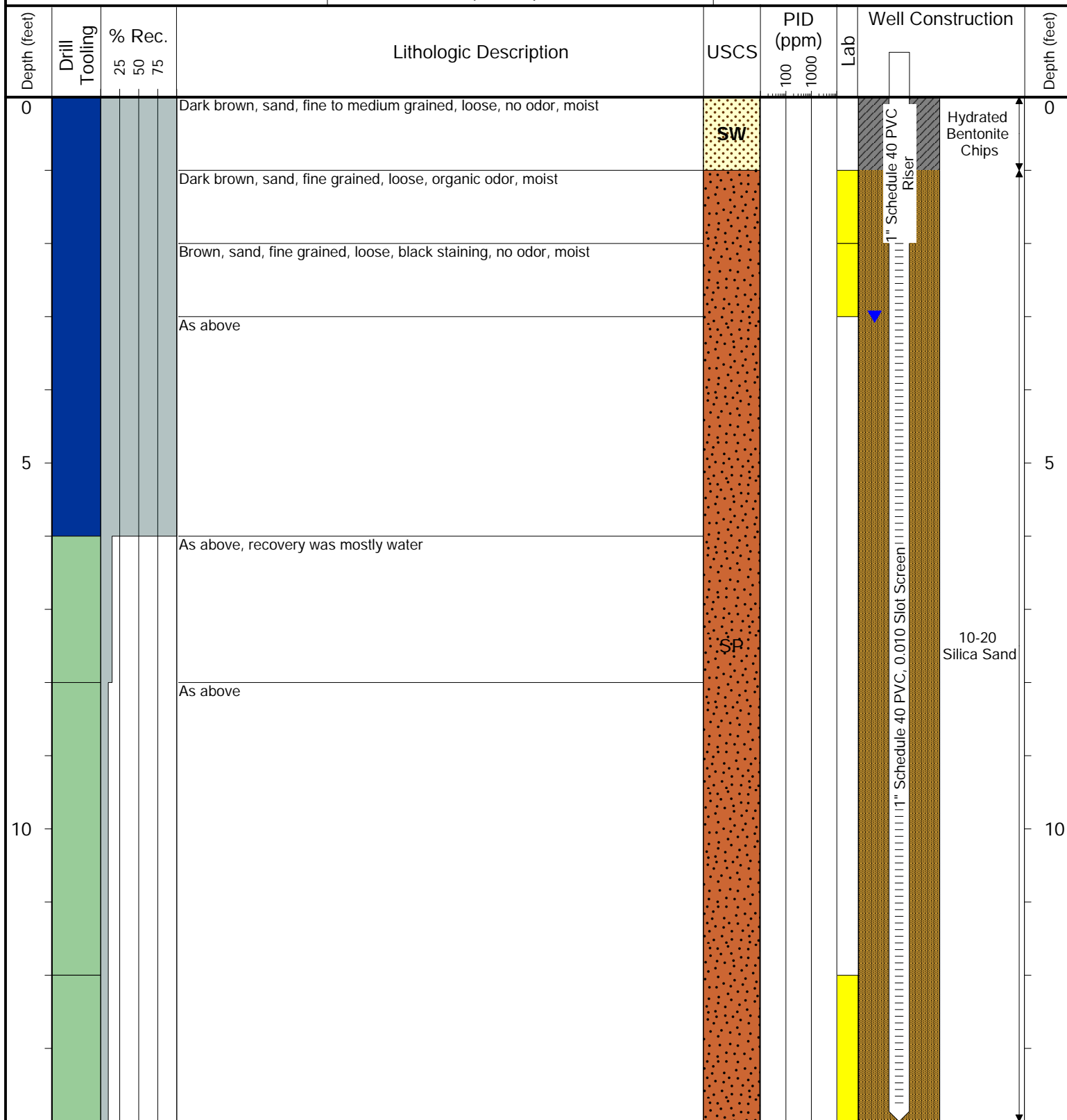
LOCATION: Weld County, Colorado

LATITUDE: 40.300072429814

LONGITUDE: -104.68042427124

CASING ELEVATION (FT. AMSL): 4,705.59

GROUND ELEVATION (FT. AMSL): 4,741.78



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Hunter Merlo

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: AMS Power Probe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 10/21/2021

TOTAL WELL DEPTH (FT. BGS): 14

DEPTH TO WATER (FT. BGS): 2

HSR Charlton 08-20

BORING / WELL ID: BH04

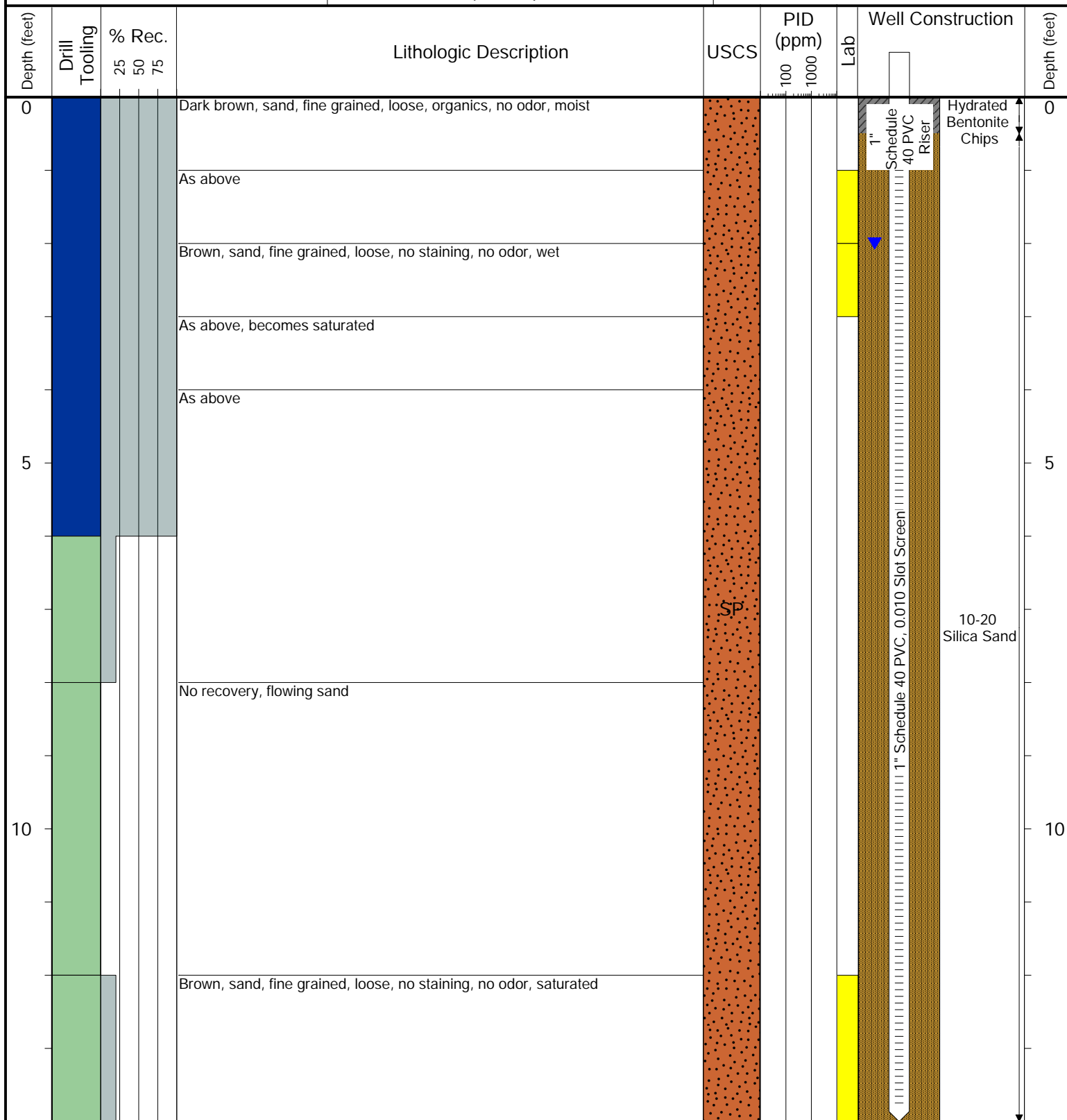
LOCATION: Weld County, Colorado

LATITUDE: 40.30002931201

LONGITUDE: -104.68048994929

CASING ELEVATION (FT. AMSL): 4,706.67

GROUND ELEVATION (FT. AMSL): 4,742.55



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Hunter Merlo

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: AMS Power Probe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 10/21/2021

TOTAL WELL DEPTH (FT. BGS): 12

DEPTH TO WATER (FT. BGS): 2

HSR Charlton 08-20

BORING / WELL ID: BH05

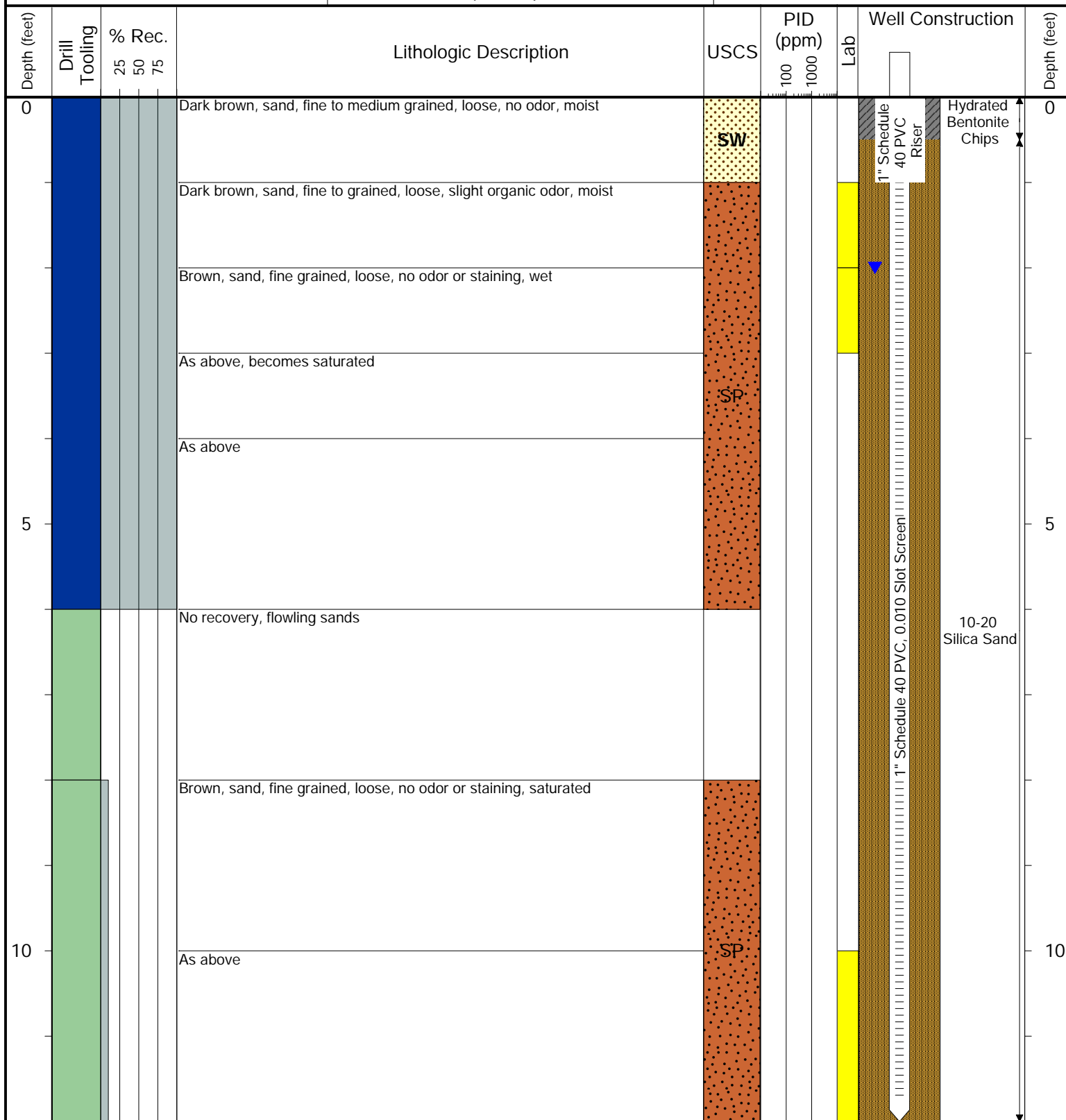
LOCATION: Weld County, Colorado

LATITUDE: 40.300079772345

LONGITUDE: -104.68059409415

CASING ELEVATION (FT. AMSL): 4,707.7

GROUND ELEVATION (FT. AMSL): 4,739.7



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab

ATTACHMENT C

LABORATORY GROUNDWATER ANALYTICAL REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 29, 2021

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

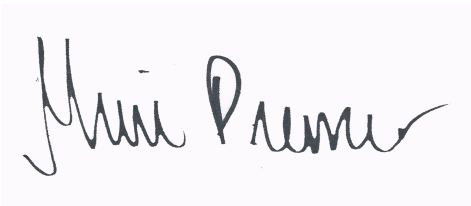
Broomfield, CO 80020

RE: Noble - HSR Charlton 08-20

Work Order #2110490

Enclosed are the results of analyses for samples received by Summit Scientific on 10/28/21 15:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/29/21 14:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2110490-01	Water	10/27/21 14:50	10/28/21 15:50
BH02	2110490-02	Water	10/27/21 14:45	10/28/21 15:50
BH03	2110490-03	Water	10/27/21 14:40	10/28/21 15:50
BH04	2110490-04	Water	10/27/21 14:35	10/28/21 15:50
BH05	2110490-05	Water	10/27/21 14:30	10/28/21 15:50

Sample ID's has been changed per request of SQ on 11/29 - MP11/29

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

2110490

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: Noble / Tasman Geosciences

Project Manager: Jake Whritenour, Invoice:

Address: 6855 W. 119th Ave.

E-Mail: Jwhritenour@tasman-geo.com

City/State/Zip: Broomfield / CO/ 80020

Phone: 303-487-1228

Project Name: HSR Charlton 8-20

Sampler Name: Kilian Collins

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	Naphthalene	1,2,4-TMB	1,3,5-TMB	TDS	Chloride	Sulfate		
1	MW01	10/27&28/21	1450	4			X		X					X	X	X	X	X	X	X	
2	MW02	10/27&28/21	1445	4			X		X					X	X	X	X	X	X	X	
3	MW03	10/27&28/21	1440	4			X		X					X	X	X	X	X	X	X	
4	MW04	10/27&28/21	1435	4			X		X					X	X	X	X	X	X	X	
5	MW05	10/27&28/21	1430	4			X		X					X	X	X	X	X	X	X	
6																					
7																					
8																					
9																					
10																					

Relinquished by: <i>Kilian Collins</i> Date/Time: 10/28/21 1550	Received by: Tasman's Lock Box Date/Time: 10/28/21 1550	Turn Around Time (Check) ___ Same Day ___ 72 hours ___ 24 hours <u>X</u> Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: <u>3.9</u> Samples Intact: <u>Yes</u> No	Notes:
Relinquished by: Tasman's Lock Box Date/Time:	Received by: <i>[Signature]</i> Date/Time: 10-28-21 1550		
Relinquished by: Date/Time:	Received by: Date/Time:		

S₂

2110490

Sample Receipt Checklist

S2 Work Order# _____

Client: Noble / TasmaniaClient Project ID: HSR Charlton 8-20Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other _____

Airbill #: _____

Matrix (check all that apply):

☐ Air☐ Soil/Solid☒ Water☐ Other: _____

(Describe)

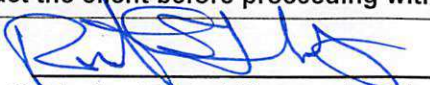
Temp (°C)

3.9

Thermometer ID: G86A9201901378

	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 if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ICE</u>
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" 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, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<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.

 Custodian Printed Name or Initials

10-28-21
 Date/Time



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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/29/21 14:14

BH01
2110490-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/27/21 14:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BEJ0617	10/29/21	11/01/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/27/21 14:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/27/21 14:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	203	12.0	mg/L	200	BEK0038	11/02/21	11/02/21	EPA 300.0	
Sulfate	273	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/27/21 14:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	728	10.0	mg/L	1	BEK0025	11/01/21	11/01/21	SM2540C	

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 - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/29/21 14:14

BH02
2110490-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/27/21 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEJ0617	10/29/21	11/01/21	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **10/27/21 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		106 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.6 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/27/21 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	348	12.0		mg/L	200	BEK0038	11/02/21	11/02/21	EPA 300.0	
Sulfate	634	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/27/21 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1280	10.0		mg/L	1	BEK0025	11/01/21	11/01/21	SM2540C	

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 - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/29/21 14:14

BH03
2110490-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/27/21 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0617	10/29/21	11/01/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/27/21 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/27/21 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	298	12.0	mg/L	200	BEK0038	11/02/21	11/03/21	EPA 300.0	
Sulfate	388	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/27/21 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1070	10.0	mg/L	1	BEK0025	11/01/21	11/01/21	SM2540C	

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/29/21 14:14

BH04
2110490-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/27/21 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0617	10/29/21	11/01/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/27/21 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.3 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/27/21 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	212	12.0	mg/L	200	BEK0038	11/02/21	11/03/21	EPA 300.0	
Sulfate	374	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/27/21 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	836	10.0	mg/L	1	BEK0025	11/01/21	11/01/21	SM2540C	

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/29/21 14:14

BH05
2110490-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/27/21 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0617	10/29/21	11/01/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/27/21 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/27/21 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	215	12.0	mg/L	200	BEK0038	11/02/21	11/03/21	EPA 300.0	
Sulfate	365	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/27/21 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	816	10.0	mg/L	1	BEK0025	11/01/21	11/01/21	SM2540C	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/29/21 14:14

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 BEJ0617 - EPA 5030 Water MS

Blank (BEJ0617-BLK1)

Prepared: 10/29/21 Analyzed: 10/31/21

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.9		"	13.3		104	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.5	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.6	21-167			

LCS (BEJ0617-BS1)

Prepared: 10/29/21 Analyzed: 10/31/21

Benzene	50.0	1.0	ug/l	50.0		100	51-132			
Toluene	50.7	1.0	"	50.0		101	51-138			
Ethylbenzene	50.1	1.0	"	50.0		100	58-146			
m,p-Xylene	98.1	2.0	"	100		98.1	57-144			
o-Xylene	49.2	1.0	"	50.0		98.4	53-146			
Naphthalene	39.5	1.0	"	50.0		79.0	70-130			
1,2,4-Trimethylbenzene	49.3	1.0	"	50.0		98.6	70-130			
1,3,5-Trimethylbenzene	50.5	1.0	"	50.0		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.0		"	13.3		89.9	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		100	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.4	21-167			

Matrix Spike (BEJ0617-MS1)

Source: 2110473-01

Prepared: 10/29/21 Analyzed: 11/01/21

Benzene	48.5	1.0	ug/l	50.0	ND	97.0	34-141			
Toluene	48.0	1.0	"	50.0	ND	96.1	27-151			
Ethylbenzene	53.4	1.0	"	50.0	ND	107	29-160			
m,p-Xylene	104	2.0	"	100	ND	104	20-166			
o-Xylene	49.6	1.0	"	50.0	ND	99.2	33-159			
Naphthalene	43.1	1.0	"	50.0	ND	86.2	70-130			
1,2,4-Trimethylbenzene	55.7	1.0	"	50.0	ND	111	70-130			
1,3,5-Trimethylbenzene	57.0	1.0	"	50.0	ND	114	70-130			
Surrogate: 1,2-Dichloroethane-d4	10.6		"	13.3		79.1	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.8	21-167			

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/29/21 14:14

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 BEJ0617 - EPA 5030 Water MS

Matrix Spike Dup (BEJ0617-MSD1)		Source: 2110473-01			Prepared: 10/29/21 Analyzed: 11/01/21					
Benzene	50.7	1.0	ug/l	50.0	ND	101	34-141	4.36	30	
Toluene	49.7	1.0	"	50.0	ND	99.4	27-151	3.38	30	
Ethylbenzene	55.4	1.0	"	50.0	ND	111	29-160	3.53	30	
m,p-Xylene	107	2.0	"	100	ND	107	20-166	3.44	30	
o-Xylene	51.8	1.0	"	50.0	ND	104	33-159	4.36	30	
Naphthalene	37.6	1.0	"	50.0	ND	75.2	70-130	13.7	30	
1,2,4-Trimethylbenzene	55.2	1.0	"	50.0	ND	110	70-130	0.812	30	
1,3,5-Trimethylbenzene	56.5	1.0	"	50.0	ND	113	70-130	0.864	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	11.1		"	13.3		83.0	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.6	20-170			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.5	21-167			

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/29/21 14:14

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch BEK0038 - General Preparation

Blank (BEK0038-BLK1)

Prepared & Analyzed: 11/02/21

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

LCS (BEK0038-BS1)

Prepared & Analyzed: 11/02/21

Chloride	3.14	0.0600	mg/L	3.00	105	90-110
Sulfate	15.9	0.300	"	15.0	106	90-110

Duplicate (BEK0038-DUP1)

Source: 2110476-04

Prepared & Analyzed: 11/02/21

Chloride	263	12.0	mg/L	263	0.228	20
Sulfate	354	60.0	"	361	1.96	20

Matrix Spike (BEK0038-MS1)

Source: 2110476-04

Prepared & Analyzed: 11/02/21

Chloride	983	12.0	mg/L	600	263	120	80-120
Sulfate	3970	60.0	"	3000	361	120	80-120

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/29/21 14:14

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BEK0025 - General Preparation

Blank (BEK0025-BLK1)

Prepared & Analyzed: 11/01/21

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BEK0025-DUP1)

Source: 2110476-04

Prepared & Analyzed: 11/01/21

Total Dissolved Solids 1100 10.0 mg/L 1090 1.01 20

Summit Scientific

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

Project: Noble - HSR Charlton 08-20

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/29/21 14:14

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