

SITE ASSESSMENT REPORT
THOMPSON D28-10 TANK BATTERY

ECMC SPILL TRACKING # 483966
ECMC REMEDIATION # 25228

Prepared for:



2115 117th Avenue
Greeley, CO 80631

Prepared by:



6855 W. 119th Ave
Broomfield, CO 80020

November 3, 2023

Mr. Dan Peterson
Environmental Specialist,
Chevron Rockies Business Unit
Noble Energy Inc.
2115 117th Avenue
Greeley, CO 80631

Re: Site Assessment Report
Thompson D28-10 Tank Battery
Spill/Release Point ID: 483966
Remediation #: 25228
NWNE S28 T4N R64W
Weld County, Colorado

Dear Mr. Peterson:

Below please find a copy of the above referenced Site Assessment Report (Report) for the Thompson D28-10 Tank Battery (Site) located in Weld County, Colorado. The text below describes the tank battery decommissioning, assessment, and associated soil and groundwater sampling conducted by Tasman, Inc. (Tasman), on behalf of Noble Energy, Inc. (Noble) between February 27, 2023 and June 19, 2023.

Introduction

This document describes the results of soil and groundwater sampling activities conducted at the Site to evaluate subsurface impacts. The activities described below were performed in response to the discovery of impacted material beneath the produced water vault (PBV) during decommissioning activities conducted at the Site.

Site Background

The Site is located approximately 7.4 miles south of Kersey in Weld County, Colorado. The Site legal description is the Northwest quarter of the northeast quarter of Section 28, Township 4 North, Range 64 West, 6th Principal Meridian. The Site is on terrain that slopes gradually to the west at latitude 40.280708° and longitude -104.559630° [North American Datum of 1983(NAD83)] and is located approximately 0.43 miles northeast of the intersection of County Road 53 and County Road 40 (Figure 1).

Tasman was initially retained by Noble on February 27, 2023 to complete soil sampling and documentation during Site decommissioning and abandonment activities at the tank battery. As reported in the initial Form 19, historical impacts were confirmed beneath the PBV on March 9, 2023. The Form 19 was submitted to the Energy and Carbon Management Commission (ECMC) on March 9, 2023. The ECMC subsequently issued Spill/Release Point ID Number 483966 for this event. The ECMC assigned Remediation Number 25228 for the project.

Site Decommissioning Activities

On February 27, 2023 and March 2, 2023, Tasman completed decommissioning soil sampling and documentation for the Thompson D28-10 Tank Battery. Soil samples were collected throughout the Site targeting the following different areas and pieces of production equipment:

Area of Site	Sampling	Sample description
Separator	SEP01-DL@4' SEP01-FL@3.5'	One sample collected separator dumpline and flowline riser.
Crude Oil ASTs	AST01@0.5'	One sample collected beneath the crude oil AST
Flare	Flare01@0.5'	One samples collected beneath the flares
Meter House	MH01@0.5' MH02@0.5'	One sample collected beneath each meter house
Produced Water Vault	SS01@2.5' through SS04@2.5', FS01@5.5'	Four excavation sidewall samples collected at the sidewall from the vault excavation and one base samples at the center of the excavation

Eight of the 11 soil samples were submitted to Summit Scientific (Summit) in Golden, Colorado for laboratory analysis. The samples were submitted for laboratory analysis of the ECMC Table 915-1 list of organic compounds in soil using United States Environmental Protection Agency (USEPA) Method 8260B and USEPA Method 8270D, total petroleum hydrocarbons (TPH) using USEPA Methods 8260B and 8015D, pH, electrical conductivity (EC), sodium absorption ratio (SAR) using USEPA saturated paste extraction method, and boron using the hot water-soluble soil extract method. Soil sample FS01@5.5' was also submitted to Summit for laboratory analysis of ECMC Table 915-1 metals in soil using USEPA Method 6020B. Groundwater was not encountered during decommissioning activities at the Site. Decommissioning soil analytical results are summarized on Table 1, illustrated on Figure 2, and the laboratory analytical report is included in Attachment A.

Site Assessment Activities

On June 2, 2023, Tasman completed site assessment activities to delineate subsurface soil impacts identified during Site decommissioning. Tasman advanced six borings to 19 feet below ground surface (ft bgs), using a Geoprobe via direct push drilling techniques. A hydro-excavator was used to pre-clear each soil boring location to a depth of 6-ft bgs prior to mechanically drilling with the Geoprobe. During

soil boring operations, soil samples were collected and field screened for VOCs using a PID and standard headspace sampling techniques. The following soil samples were collected at depths corresponding to initial observed impacts, and the terminal depth of the borings:

BH01@0.5'	BH02@0.5'	BH03@0.5'	BH04@0.5'	BH05@0.5'
BH01@6'	BH02@6'	BH03@6'	BH04@6'	BH05@6'
BH01@18-19'	BH02@18-19'	BH03@18-19'	BH04@18-19'	BH05@18-19'

BH06@0.5'

All ten soil samples collected from the 6 ft bgs and 18-19 ft bgs soil horizons were submitted to Summit Scientific (Summit) in Golden, Colorado for laboratory analysis of the ECMC Table 915-1 list of organic compounds in soil using USEPA Methods 8260B and 8270D, TPH using USEPA Methods 8260B and 8015D, ECMC Table 915-1 metals in soil using USEPA Method 6020B, pH, EC, SAR using USEPA saturated paste extraction method, and boron using the hot water-soluble soil extract method. All six of the soil samples collected from the 0.5 ft bgs soil horizon were submitted to Summit for analysis of pH using USEPA saturated paste extraction method. Site assessment soil sample analytical results are summarized in Table 1 and illustrated on Figure 3. Laboratory analytical reports are included in Attachment A and the boring logs are included in Attachment B.

During soil boring activities groundwater was encountered at approximately 10 ft bgs in the borings. Soil borings BH01 through BH06 were converted to temporary groundwater monitoring wells, and set to depths of 19 ft bgs with 15 ft of 0.010-inch slotted screen interval. Tasman returned to the Site on June 5, 2023, and each temporary monitoring well was developed by purging a minimum of five well volumes of water and allowing the wells to stabilize for at least one week prior to sampling. On June 19, 2023, Tasman collected groundwater samples from the six temporary 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 (1,2,4-TMB), and 1,3,5-trimethylbenzene (1,3,5-TMB) using USEPA Method 8260B, as well as 2-methylnaphthalene using EPA Method 8270D SIM. Groundwater samples were also analyzed for inorganic parameters total dissolved solids (TDS) using Method SM2540C, as well as chloride 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. The groundwater potentiometric surface contour map is illustrated on Figure 4. Groundwater analytical results are summarized in Table 3, illustrated on Figure 5, and the laboratory analytical reports are included in Attachment C.

Results

Laboratory analytical results for one of the eight decommissioning soil samples indicate hydrocarbon concentrations above ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSLs) but below ECMC Table 915-1 Residential Soil Screening Levels (RSSLs). Hydrocarbon compounds detected above ECMC Table 915-1 GSSLs included a combination of 1,2,4-TMB, 1,3,5-TMB, and 2-

M. All ten soil samples collected during site assessment activities are in compliance with ECMC Table 915-1 GSSLs for hydrocarbon compounds.

Laboratory analytical results indicate pH was above ECMC Table 915-1 Soil Suitability for Reclamation (SSR) standards in one decommissioning soil sample (AST01@0.5'). All other samples collected during decommissioning and site assessment activities were in compliance with ECMC Table 915-1 SSR standards for pH, SAR, EC, and boron.

Arsenic was detected above applicable ECMC standards in 11 soil samples submitted for laboratory analysis. To determine if arsenic should be considered a contaminant of concern, a total of ten background samples were collected from five discrete locations and analyzed for arsenic. The average background concentration with a 1.25 multiplier applied was calculated to be 2.16 mg/kg whereas the average site assessment and decommissioning sample concentration for arsenic was calculated to be 2.03 mg/kg. Since the arsenic was observed in background soil samples at greater concentrations than in the site assessment and decommissioning soil samples, arsenic should not be considered a contaminant of concern at the site.

Groundwater laboratory analytical results for temporary monitoring wells BH01 through BH06 indicate that all hydrocarbon compounds were below laboratory detection limits. Monitoring well BH02 was selected as the background location for inorganic levels due to its cross and up-gradient location (Figure 4). When compared to the concentrations of inorganic compounds in groundwater at BH02, all groundwater samples collected are in compliance with ECMC Table 915-1 Groundwater Inorganic Parameters (GIP) standards.

Conclusions

Soil hydrocarbon impacts observed during decommissioning in area of the PBV have been successfully delineated vertically and laterally by site assessment soil borings BH01 through BH06. Since the arsenic was observed in background soil samples at greater concentrations than in the site assessment and decommissioning soil samples, arsenic should not be considered a contaminant of concern at the site. Since the pH exceedance identified at AST01@0.5' has been fully delineated by site assessment soil borings, the pH appears to be limited to a singular point source area that will be removed during reclamation.

Since the hydrocarbon compounds detected in soil samples during decommissioning and site assessment activities are above ECMC Table 915-1 GSSLs but below ECMC Table 915-1 RSSLs, groundwater monitoring will be conducted until four consecutive quarters of compliant results are achieved. Following the receipt of four consecutive quarters of compliant results, Noble will request a No Further Action (NFA) designation for the site.

Remarks

The discussion and conclusions contained in this report represent the professional opinions of Tasman, 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, 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 – Decommissioning & Soil Analytical Results Map (02/27/2023 & 03/02/2023)

Figure 3 – Site Assessment Soil Analytical Results Map (06/02/2023)

Figure 4 – Groundwater Potentiometric Surface Map (06/19/2023)

Figure 5 – Groundwater Analytical Results Map (06/19/2023)

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. - THOMPSON 28-10 FACILITY

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
SEP01-FL@3.5'	02/27/23	<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
SEP01-DL@4'	02/27/23	<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
AST01@0.5'	02/27/23	<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
SS01@2.5'	03/02/23	<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
SS02@2.5'	03/02/23	<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
SS03@2.5'	03/02/23	<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
SS04@2.5'	03/02/23	<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
FS01@5.5'	03/02/23	<0.0020	<0.0050	<0.0050	<0.010	0.067	0.035	<0.0038	1.9	<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	0.00510	0.0192
BH01@6'	06/02/23	<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
BH01@18-19'	06/02/23	<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@6'	06/02/23	<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@18-19'	06/02/23	<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@6'	06/02/23	<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@18-19'	06/02/23	<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@6'	06/02/23	<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@18-19'	06/02/23	<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@6'	06/02/23	<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@18-19'	06/02/23	<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
SEP01-FL@3.5'	02/27/23	7.91	0.107	0.245	0.110
SEP01-DL@4'	02/27/23	7.23	0.274	0.215	0.0870
AST01@0.5'	02/27/23	4.89	0.0363	0.0665	0.0316
SS01@2.5'	03/02/23	7.90	0.0205	0.100	0.0922
SS02@2.5'	03/02/23	7.93	0.0658	0.211	0.141
SS03@2.5'	03/02/23	7.65	0.130	0.144	0.118
SS04@2.5'	03/02/23	7.64	0.0190	0.0856	0.0942
FS01@5.5'	03/02/23	7.85	0.295	0.262	0.128
BH01@0.5'	06/02/23	8.29	NA	NA	NA
BH01@6'	06/02/23	7.52	0.356	0.526	0.0486
BH01@18-19'	06/02/23	8.24	1.67	0.301	0.258
BH02@0.5'	06/02/23	7.94	NA	NA	NA
BH02@6'	06/02/23	7.42	0.0660	0.203	0.0798
BH02@18-19'	06/02/23	7.89	2.73	0.438	0.140
BH03@0.5'	06/02/23	8.03	NA	NA	NA
BH03@6'	06/02/23	7.72	1.36	0.352	0.0648
BH03@18-19'	06/02/23	7.85	1.99	0.356	0.317
BH04@0.5'	06/02/23	7.93	NA	NA	NA
BH04@6'	06/02/23	7.12	0.145	0.315	0.0555
BH04@18-19'	06/02/23	7.92	2.15	0.406	0.171
BH05@0.5'	06/02/23	7.83	NA	NA	NA
BH05@6'	06/02/23	7.71	1.57	0.495	0.0788
BH05@18-19'	06/02/23	8.04	2.44	0.305	0.206
BH06@0.5'	06/02/23	7.61	NA	NA	NA
BG01@0.5'	06/02/23	6.41	NA	NA	NA
BG01@6'	06/02/23	7.80	NA	NA	NA
BG01@18-19'	06/02/23	8.13	NA	NA	NA
BG02@0.5'	06/02/23	8.10	NA	NA	NA
BG02@6'	06/02/23	7.85	NA	NA	NA
BG02@18-19'	06/02/23	8.20	NA	NA	NA
BG03@0.5'	06/02/23	8.14	NA	NA	NA
BG03@6'	06/02/23	8.22	NA	NA	NA
BG03@18-19'	06/02/23	8.19	NA	NA	NA
BG04@0.5'	06/02/23	7.92	NA	NA	NA
BG04@6'	06/02/23	8.27	NA	NA	NA
BG04@18-19'	06/02/23	8.26	NA	NA	NA
BG05@0.5'	06/02/23	6.32	NA	NA	NA
BG05@6'	06/02/23	8.28	NA	NA	NA
BG05@18-19'	06/02/23	8.22	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 SSL ^{2,3}		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FS01@5.5'	03/02/23	1.54	34.2	<0.213	<0.30	2.92	3.02	2.39	<0.260	<0.0213	9.50
BH01@6'	06/02/23	1.44	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH01@18-19'	06/02/23	2.59	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH02@6'	06/02/23	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH02@18-19'	06/02/23	1.61	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH03@6'	06/02/23	2.01	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH03@18-19'	06/02/23	3.57	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH04@6'	06/02/23	1.48	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH04@18-19'	06/02/23	3.54	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH05@6'	06/02/23	0.995	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH05@18-19'	06/02/23	2.31	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG01@6'	06/02/23	1.61	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG01@18-19'	06/02/23	4.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG02@6'	06/02/23	1.61	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG02@18-19'	06/02/23	3.39	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG03@6'	06/02/23	1.79	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG03@18-19'	06/02/23	1.47	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG04@6'	06/02/23	0.521	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG04@18-19'	06/02/23	1.27	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG05@6'	06/02/23	0.540	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG05@18-19'	06/02/23	1.06	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

- Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
- SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

ECMC = Energy and Carbon Management Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total

TABLE 2
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - THOMPSON 28-10 FACILITY

Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.) ⁽¹⁾	Depth to LNAPL (ft.) ⁽¹⁾	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	06/19/23	4741.45	19.21	9.30	ND	ND	4732.28
BH02	06/19/23	4742.57	18.92	9.97	ND	ND	4732.86
BH03	06/19/23	4740.56	18.83	8.76	ND	ND	4731.97
BH04	06/19/23	4740.18	18.66	8.52	ND	ND	4731.82
BH05	06/19/23	4741.49	19.22	9.02	ND	ND	4732.63
BH06	06/19/23	4740.28	18.33	8.36	ND	ND	4732.15

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 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. - THOMPSON 28-10 FACILITY

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)	1-M (µg/L)	2-M (µg/L)	TDS (mg/L)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
ECMC Standard		5	560	700	1,400	140	67	67	1.1 ⁽²⁾	3.6 ⁽²⁾	<1.25 x Background	250 or <1.25 x Background	250 or <1.25 x Background
BH01	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	<0.500	993	246	266
⁽³⁾ BH02	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	<0.500	1,020	289	270
BH03	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	<0.500	855	204	241
BH04	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	<0.500	804	210	236
BH05	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	<0.500	991	291	270
BH06	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	<0.500	1,020	280	299

Notes:

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

⁽²⁾ Groundwater standards referenced from USEPA Regional Screening Level (RSL) Resident Tapwater Table (TR=1E-06, HQ=0.1) November 2022.

⁽³⁾ Monitoring well used for inorganic background levels.

Definitions:

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

ECMC = Energy and Carbon Management Commission

mg/L = Milligrams per liter

NA = Not analyzed

µg/L = Micrograms per liter

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

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

Benz(a) = Benzanthracene

1-M = 1-Methylnaphthalene

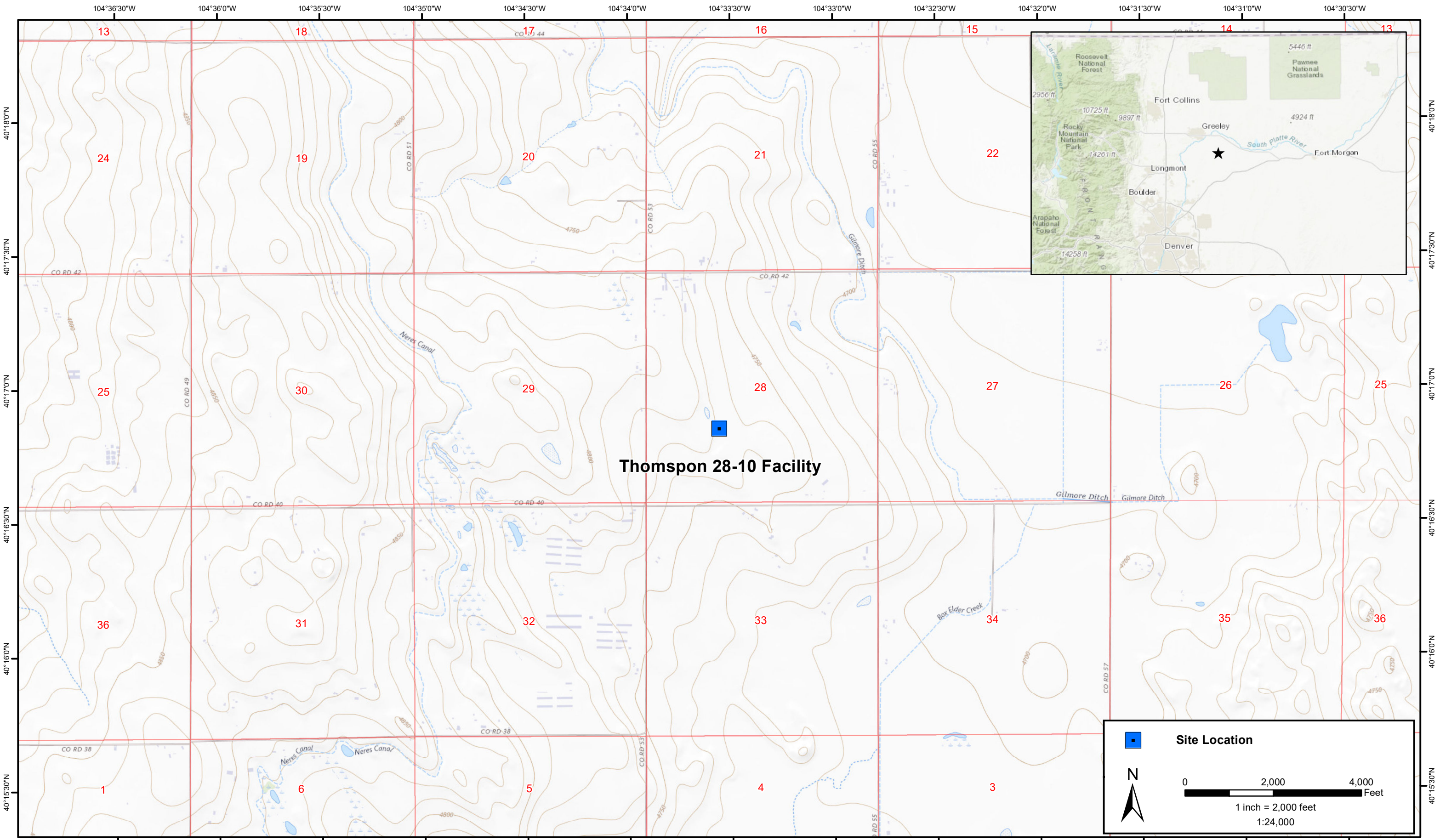
2-M = 2-Methylnaphthalene

TDS = Total Dissolved Solids

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

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

FIGURES



DATE:	March 2023
DESIGNED BY:	S. Vogt
DRAWN BY:	L. Reed



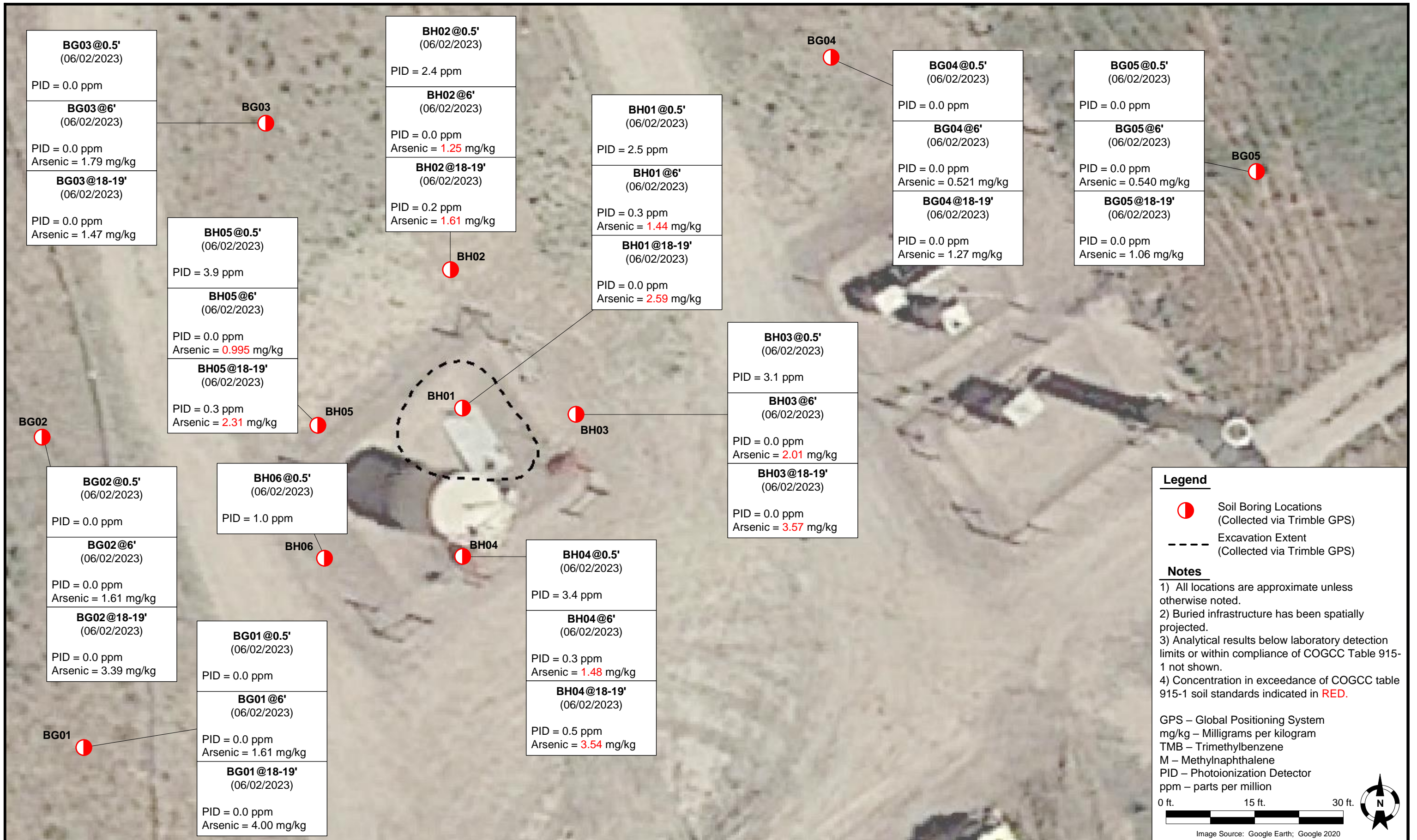
Tasman, Inc.
6855 W. 119th Ave
Broomfield, CO 80020

Noble Energy, Inc - DJ Basin
Thomson 28-10 Facility
NESW Sec 28 T4N-R64W
Weld County, Colorado


Site Location Map

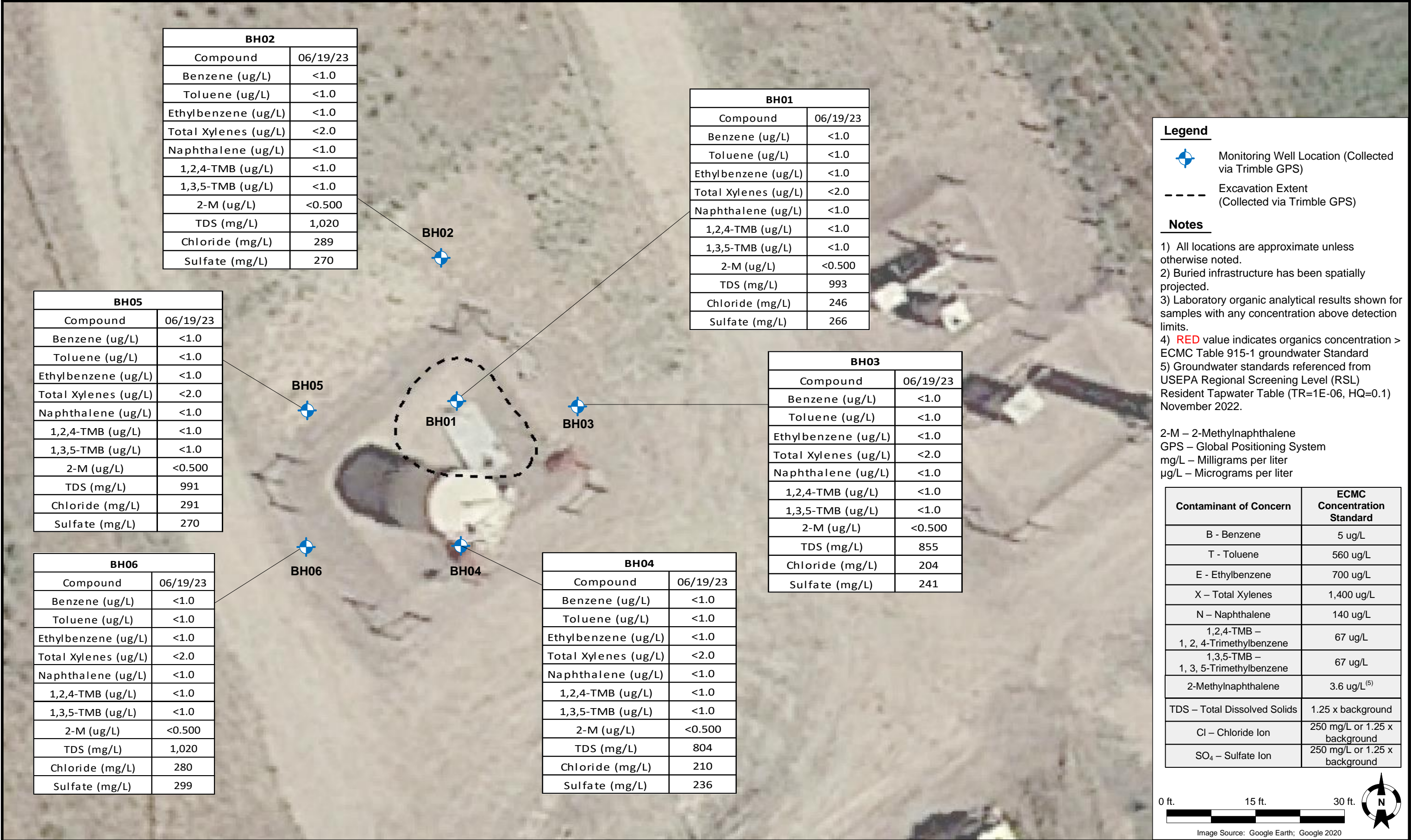
Figure
1







DATE: 6/21/2023	 TASMAN Tasman Geosciences, Inc. 6855 W 119 th Avenue Broomfield, CO 80020	Noble Energy, Inc. – DJ Basin Thompson 28-10 FAC NESW, Section 28, Township 4 North, Range 64 West Weld County, Colorado	Groundwater Potentiometric Surface Contour Map (06/19/2023)	FIGURE 4
DESIGNED BY: JW				
DRAWN BY: LR				



ATTACHMENT A
LABORATORY SOIL ANALYTICAL DATA REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 26, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Thompson 28-10

Work Order #2306058

Enclosed are the results of analyses for samples received by Summit Scientific on 06/02/23 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Jacob Wood". The signature is written in a cursive, flowing style.

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@0.5'	2306058-01	Soil	06/02/23 08:34	06/02/23 17:00
BH01@6'	2306058-02	Soil	06/02/23 13:24	06/02/23 17:00
BH01@18-19'	2306058-03	Soil	06/02/23 13:50	06/02/23 17:00
BH02@0.5'	2306058-04	Soil	06/02/23 08:32	06/02/23 17:00
BH02@6'	2306058-05	Soil	06/02/23 14:00	06/02/23 17:00
BH02@18-19'	2306058-06	Soil	06/02/23 14:25	06/02/23 17:00
BH03@0.5'	2306058-07	Soil	06/02/23 08:36	06/02/23 17:00
BH03@6'	2306058-08	Soil	06/02/23 14:40	06/02/23 17:00
BH03@18-19'	2306058-09	Soil	06/02/23 14:50	06/02/23 17:00
BH04@0.5'	2306058-10	Soil	06/02/23 08:40	06/02/23 17:00
BH04@6'	2306058-11	Soil	06/02/23 12:45	06/02/23 17:00
BH04@18-19'	2306058-12	Soil	06/02/23 13:10	06/02/23 17:00
BH05@0.5'	2306058-13	Soil	06/02/23 08:30	06/02/23 17:00
BH05@6'	2306058-14	Soil	06/02/23 10:50	06/02/23 17:00
BH05@18-19'	2306058-15	Soil	06/02/23 11:15	06/02/23 17:00
BH06@0.5'	2306058-16	Soil	06/02/23 08:42	06/02/23 17:00
BG01@0.5'	2306058-17	Soil	06/02/23 10:40	06/02/23 17:00
BG01@6'	2306058-18	Soil	06/02/23 10:41	06/02/23 17:00
BG01@18-19'	2306058-19	Soil	06/02/23 11:00	06/02/23 17:00
BG02@0.5'	2306058-20	Soil	06/02/23 10:42	06/02/23 17:00
BG02@6'	2306058-21	Soil	06/02/23 10:43	06/02/23 17:00
BG02@18-19'	2306058-22	Soil	06/02/23 11:02	06/02/23 17:00
BG03@0.5'	2306058-23	Soil	06/02/23 10:45	06/02/23 17:00
BG03@6'	2306058-24	Soil	06/02/23 10:47	06/02/23 17:00
BG03@18-19'	2306058-25	Soil	06/02/23 11:02	06/02/23 17:00
BG04@0.5'	2306058-26	Soil	06/02/23 10:45	06/02/23 17:00
BG04@6'	2306058-27	Soil	06/02/23 10:48	06/02/23 17:00

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.



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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BG04@18-19'	2306058-28	Soil	06/02/23 11:03	06/02/23 17:00
BG05@0.5'	2306058-29	Soil	06/02/23 10:46	06/02/23 17:00
BG05@6'	2306058-30	Soil	06/02/23 10:49	06/02/23 17:00
BG05@18-19'	2306058-31	Soil	06/02/23 11:04	06/02/23 17:00

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.

Client: Noble/Tasman		Send Data To: Project Manager: Jake Whritenour		Send Invoice To: Company: <i>Chevron</i>	
Address: 6855 W. 119th Ave.		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: <i>Thompson 28-10</i>	
City/State/Zip: Broomfield/CO/ 80020				AFE#:	
Phone: 602-881-5716		Project Name: <i>Thompson 28-10</i>		PO/Billing Codes:	
Sampler Name: Dennis Gray		Project Number:		Contact: <i>Dan Peterson</i>	

					Preservative				Matrix			Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other Arsenic	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD	pH	SAR, EC, pH by saturated paste
1	BH01@0.5'	6-2-23	834	1			X			X										X	
2	BH01@6'		1324	2								X		X	X	X	X	X			
3	BH01@18-19'		1350	2								X		X	X	X	X	X			
4	BH02@0.5'		832	1																X	
5	BH02@6'		1400	2								X		X	X	X	X	X			
6	BH02@18-19'		1425	2								X		X	X	X	X	X			
7	BH03@0.5'		836	1																X	
8	BH03@6'		1440	2								X		X	X	X	X	X			
9	BH03@18-19'		1450	2								X		X	X	X	X	X			
10	BH04@0.5'		840	1																X	
11	BH04@6'		1245	2								X		X	X	X	X	X			
12	BH04@18-19'		1310	2								X		X	X	X	X	X			
13	BH05@0.5'		830	1																X	
14	BH05@6'		1050	2								X		X	X	X	X	X			
15	BH05@18-19'		1115	2								X		X	X	X	X	X			

Relinquished by: <i>Dan</i>	Date/Time: 6-2-23 1700	Received by: Tasman Lock Box	Date/Time: 6-2-23 1700	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: 6-2-23 1738	Received by: <i>[Signature]</i>	Date/Time: 6-2-23 1738	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	X Field Turb.	
Temperature Upon Receipt: 60.0		Corrected Temperature: 60.0		IR gun #: 1		HNO3 lot #:

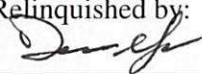
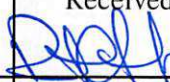
Client: Noble/Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W. 119th Ave.		Project Manager: Jake Whritenour		Company: Chevron	
City/State/Zip: Broomfield/CO/ 80020		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: Thompson 28-10	
Phone: 602-881-5716		Project Name: Thompson 28-10		AFE#:	
Sampler Name: Dennis Gray		Project Number:		PO/Billing Codes:	
				Contact: Dan Peterson	

					Preservative				Matrix			Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other pH	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD	Arsenic, pH	
1	BH06 @ 0.5'	6-2-23	842	1			X			X		X									SAR, EC, pH by saturated paste
2	Ba01 @ 0.5'		1040	1								X									
3	Ba01 @ 6'		1041	1																X	
4	Ba01 @ 18-19'		1100	1																X	
5	Ba02 @ 0.5'		1042	1								X									
6	Ba02 @ 6'		1043	1																X	
7	Ba02 @ 18-19'		1102	1																X	
8	Ba03 @ 0.5'		1045	1								X									
9	Ba03 @ 6'		1047	1																X	
10	Ba03 @ 18-19'		1102	1																X	
11	Ba04 @ 0.5'		1045	1								X									
12	Ba04 @ 6'		1048	1																X	
13	Ba04 @ 18-19'		1103	1																X	
14	Ba05 @ 0.5'		1046	1								X									
15	Ba05 @ 6'		1049	1																X	

Relinquished by: <i>Dennis Gray</i>	Date/Time: 6-2-23 1700	Received by: Tasman Lock Box	Date/Time: 6-2-23 1700	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 6-2-23 1738	Received by: <i>[Signature]</i>	Date/Time: 6-2-23 1738	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 1620	Corrected Temperature: <i>[initials]</i>	IR gun #: 1	HNO3 lot #:			

Client: Noble/Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W. 119th Ave.		Project Manager: Jake Whritenour		Company: Chevron	
City/State/Zip: Broomfield/CO/ 80020		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: Thompson 28-10	
Phone: 602-881-5716		Project Name: Thompson 28-10		AFE#:	
Sampler Name: Dennis Gray		Project Number:		PO/Billing Codes:	
				Contact: Dan Peterson	

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD	Arsenic, pH	
1	BG05018-19	6-2-23	1104	1			X			X										X	SAR, EC, pH by saturated paste
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 6-2-23 1700	Received by: Tasman Lock Box	Date/Time: 6-2-23 1700	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 6-2-23 1738	Received by: 	Date/Time: 6-2-23 1738	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 16.0		Corrected Temperature: 6		IR gun #: 1	HNO3 lot #:	

S₂

3/3

Sample Receipt Checklist

S2 Work Order# 236058

Client: Noble FarmanClient Project ID: Thompson 28-10Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°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 JCE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<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"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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"/>	
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.

AS

Custodian Printed Name

6/2/23

Date/Time

9.24



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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH01@0.5'
2306058-01 (Soil)

Summit Scientific

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

Date Sampled: **06/02/23 08:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.29			pH Units	1	BGF0315	06/08/23	06/08/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH01@6'
2306058-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/23 13:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0185	06/06/23	06/07/23	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: **06/02/23 13:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0501	125 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0354	88.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0432	108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/02/23 13:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0191	06/06/23	06/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/02/23 13:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.8	94.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH01@6'
2306058-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/02/23 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0243	06/07/23	06/08/23	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: **06/02/23 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0229	68.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0233	69.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/02/23 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0486	0.0100	mg/L	1	BGF0384	06/09/23	06/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/02/23 13:24**

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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH01@6'
2306058-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.44	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/02/23 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	55.4	0.0576	mg/L dry	1	BGF0392	06/10/23	06/16/23	EPA 6020B	
Magnesium	13.6	0.0576	"	"	"	"	"	"	
Sodium	11.4	0.0576	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/02/23 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.356	0.00100	units	1	BGF0627	06/17/23	06/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.9		%	1	BGF0375	06/09/23	06/09/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/02/23 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.526	0.0100	mmhos/cm	1	BGF0399	06/11/23	06/11/23	EPA 120.1	

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

Date Sampled: **06/02/23 13:24**

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 - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH01@6'
2306058-02 (Soil)

Summit Scientific

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

pH	7.52	pH Units	1	BGF0398	06/11/23	06/11/23	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH01@18-19'
2306058-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/23 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0185	06/06/23	06/07/23	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: **06/02/23 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0544	136 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0352	87.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0427	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/02/23 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0191	06/06/23	06/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/02/23 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.8	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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH01@18-19'
2306058-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/02/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0243	06/07/23	06/08/23	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: **06/02/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0220	65.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0217	65.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/02/23 13:50**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.258	0.0100	mg/L	1	BGF0384	06/09/23	06/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/02/23 13:50**

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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH01@18-19'
2306058-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.59	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/02/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	22.3	0.0591	mg/L dry	1	BGF0392	06/10/23	06/16/23	EPA 6020B	
Magnesium	6.96	0.0591	"	"	"	"	"	"	
Sodium	35.3	0.0591	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/02/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.67	0.00100	units	1	BGF0627	06/17/23	06/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.6		%	1	BGF0375	06/09/23	06/09/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/02/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.301	0.0100	mmhos/cm	1	BGF0399	06/11/23	06/11/23	EPA 120.1	

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

Date Sampled: **06/02/23 13:50**

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 - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:

07/26/23 13:42

BH01@18-19'

2306058-03 (Soil)

Summit Scientific

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

pH	8.24	pH Units	1	BGF0398	06/11/23	06/11/23	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH02@0.5'
2306058-04 (Soil)

Summit Scientific

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

Date Sampled: **06/02/23 08:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.94			pH Units	1	BGF0315	06/08/23	06/08/23	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH02@6'
2306058-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/23 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0185	06/06/23	06/07/23	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: **06/02/23 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0520	130 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0355	88.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0437	109 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/02/23 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0191	06/06/23	06/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/02/23 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.2	105 %	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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH02@6'
2306058-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/02/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0243	06/07/23	06/08/23	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: **06/02/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0235	70.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0258	77.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/02/23 14:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0798	0.0100	mg/L	1	BGF0384	06/09/23	06/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/02/23 14:00**

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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH02@6'
2306058-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.25	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/02/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	235	0.0560	mg/L dry	1	BGF0392	06/10/23	06/16/23	EPA 6020B	
Magnesium	66.3	0.0560	"	"	"	"	"	"	
Sodium	4.45	0.0560	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/02/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0660	0.00100	units	1	BGF0627	06/17/23	06/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.2		%	1	BGF0375	06/09/23	06/09/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/02/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.203	0.0100	mmhos/cm	1	BGF0399	06/11/23	06/11/23	EPA 120.1	

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

Date Sampled: **06/02/23 14:00**

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 - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:

07/26/23 13:42

BH02@6'
2306058-05 (Soil)

Summit Scientific

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

pH	7.42	pH Units	1	BGF0398	06/11/23	06/11/23	EPA 9045D
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Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH02@18-19'
2306058-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/23 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0185	06/06/23	06/07/23	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: **06/02/23 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0539	135 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0356	89.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0436	109 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/02/23 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0191	06/06/23	06/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/02/23 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.4	107 %	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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH02@18-19'
2306058-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/02/23 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0243	06/07/23	06/08/23	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: **06/02/23 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0204	61.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0232	69.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/02/23 14:25**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.140	0.0100	mg/L	1	BGF0384	06/09/23	06/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/02/23 14:25**

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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH02@18-19'
2306058-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.61	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/02/23 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	23.9	0.0621	mg/L dry	1	BGF0392	06/10/23	06/16/23	EPA 6020B	
Magnesium	6.77	0.0621	"	"	"	"	"	"	
Sodium	58.7	0.0621	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/02/23 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.73	0.00100	units	1	BGF0627	06/17/23	06/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.5		%	1	BGF0375	06/09/23	06/09/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/02/23 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.438	0.0100	mmhos/cm	1	BGF0399	06/11/23	06/11/23	EPA 120.1	

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

Date Sampled: **06/02/23 14:25**

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 - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH02@18-19'
2306058-06 (Soil)

Summit Scientific

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

pH	7.89	pH Units	1	BGF0398	06/11/23	06/11/23	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH03@0.5'
2306058-07 (Soil)

Summit Scientific

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

Date Sampled: **06/02/23 08:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.03			pH Units	1	BGF0315	06/08/23	06/08/23	EPA 9045D	

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Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH03@6'
2306058-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/23 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0185	06/06/23	06/07/23	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: **06/02/23 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0518	130 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0353	88.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0433	108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/02/23 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0191	06/06/23	06/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/02/23 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.0	95.6 %	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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH03@6'
2306058-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/02/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0243	06/07/23	06/08/23	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: **06/02/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0248	74.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0246	73.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/02/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0648	0.0100	mg/L	1	BGF0384	06/09/23	06/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/02/23 14:40**

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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH03@6'
2306058-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.01	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/02/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.2	0.0574	mg/L dry	1	BGF0392	06/10/23	06/16/23	EPA 6020B	
Magnesium	7.84	0.0574	"	"	"	"	"	"	
Sodium	32.7	0.0574	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/02/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.36	0.00100	units	1	BGF0627	06/17/23	06/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	BGF0375	06/09/23	06/09/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/02/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.352	0.0100	mmhos/cm	1	BGF0399	06/11/23	06/11/23	EPA 120.1	

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

Date Sampled: **06/02/23 14:40**

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

Project: Noble - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH03@6'
2306058-08 (Soil)

Summit Scientific

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

pH	7.72	pH Units	1	BGF0398	06/11/23	06/11/23	EPA 9045D
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH03@18-19'
2306058-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/23 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0185	06/06/23	06/07/23	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: **06/02/23 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0551	138 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0355	88.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0434	108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/02/23 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0191	06/06/23	06/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/02/23 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.3	90.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH03@18-19'
2306058-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/02/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0243	06/07/23	06/08/23	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: **06/02/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0209	62.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0227	68.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/02/23 14:50**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.317	0.0100	mg/L	1	BGF0384	06/09/23	06/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/02/23 14:50**

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



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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH03@18-19'
2306058-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.57	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/02/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	19.4	0.0561	mg/L dry	1	BGF0392	06/10/23	06/16/23	EPA 6020B	
Magnesium	5.98	0.0561	"	"	"	"	"	"	
Sodium	39.1	0.0561	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/02/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.99	0.00100	units	1	BGF0627	06/17/23	06/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.2		%	1	BGF0375	06/09/23	06/09/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/02/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.356	0.0100	mmhos/cm	1	BGF0399	06/11/23	06/11/23	EPA 120.1	

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

Date Sampled: **06/02/23 14:50**

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

Project: Noble - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:

07/26/23 13:42

BH03@18-19'

2306058-09 (Soil)

Summit Scientific

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

pH	7.85	pH Units	1	BGF0398	06/11/23	06/11/23	EPA 9045D
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Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH04@0.5'
2306058-10 (Soil)

Summit Scientific

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

Date Sampled: **06/02/23 08:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.93			pH Units	1	BGF0315	06/08/23	06/08/23	EPA 9045D	

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH04@6'
2306058-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/23 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0185	06/06/23	06/07/23	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: **06/02/23 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0550	138 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0357	89.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0431	108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/02/23 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0191	06/06/23	06/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/02/23 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.2	89.8 %	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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH04@6'
2306058-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/02/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0243	06/07/23	06/08/23	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: **06/02/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0233	69.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0223	66.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/02/23 12:45**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0555	0.0100	mg/L	1	BGF0384	06/09/23	06/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/02/23 12:45**

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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH04@6'
2306058-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.48	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/02/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	192	0.0573	mg/L dry	1	BGF0392	06/10/23	06/16/23	EPA 6020B	
Magnesium	47.5	0.0573	"	"	"	"	"	"	
Sodium	8.65	0.0573	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/02/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.145	0.00100	units	1	BGF0627	06/17/23	06/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.3		%	1	BGF0375	06/09/23	06/09/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/02/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.315	0.0100	mmhos/cm	1	BGF0399	06/11/23	06/11/23	EPA 120.1	

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

Date Sampled: **06/02/23 12:45**

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 - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH04@6'
2306058-11 (Soil)

Summit Scientific

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

pH	7.12	pH Units	1	BGF0398	06/11/23	06/11/23	EPA 9045D
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Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH04@18-19'
2306058-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/23 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0185	06/06/23	06/07/23	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: **06/02/23 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0553	138 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0355	88.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0431	108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/02/23 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0191	06/06/23	06/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/02/23 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.1	88.7 %	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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH04@18-19'
2306058-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/02/23 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGF0243	06/07/23	06/08/23	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: **06/02/23 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0207	62.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0199	59.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/02/23 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.171	0.0100	mg/L	1	BGF0384	06/09/23	06/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/02/23 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH04@18-19'
2306058-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.54	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/02/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.8	0.0599	mg/L dry	1	BGF0392	06/10/23	06/16/23	EPA 6020B	
Magnesium	7.10	0.0599	"	"	"	"	"	"	
Sodium	47.8	0.0599	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/02/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.15	0.00100	units	1	BGF0627	06/17/23	06/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.4		%	1	BGF0375	06/09/23	06/09/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/02/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.406	0.0100	mmhos/cm	1	BGF0399	06/11/23	06/11/23	EPA 120.1	

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

Date Sampled: **06/02/23 13:10**

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 - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH04@18-19'
2306058-12 (Soil)

Summit Scientific

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

pH	7.92	pH Units	1	BGF0398	06/11/23	06/11/23	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH05@0.5'
2306058-13 (Soil)

Summit Scientific

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

Date Sampled: **06/02/23 08:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.83			pH Units	1	BGF0315	06/08/23	06/08/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH05@6'
2306058-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0185	06/06/23	06/07/23	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: **06/02/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0553	138 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0352	88.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0428	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/02/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0191	06/06/23	06/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/02/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.7	102 %	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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH05@6'
2306058-14 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/02/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0243	06/07/23	06/08/23	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: **06/02/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0240	71.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0240	71.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/02/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0788	0.0100	mg/L	1	BGF0384	06/09/23	06/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/02/23 10:50**

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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH05@6'
2306058-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.995	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/02/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	36.0	0.0570	mg/L dry	1	BGF0392	06/10/23	06/16/23	EPA 6020B	
Magnesium	9.56	0.0570	"	"	"	"	"	"	
Sodium	41.1	0.0570	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/02/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.57	0.00100	units	1	BGF0627	06/17/23	06/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.7		%	1	BGF0375	06/09/23	06/09/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/02/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.495	0.0100	mmhos/cm	1	BGF0399	06/11/23	06/11/23	EPA 120.1	

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

Date Sampled: **06/02/23 10:50**

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 - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH05@6'
2306058-14 (Soil)

Summit Scientific

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

pH	7.71	pH Units	1	BGF0398	06/11/23	06/11/23	EPA 9045D
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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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH05@18-19'
2306058-15 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/23 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0185	06/06/23	06/07/23	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: **06/02/23 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0575	144 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0356	88.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0430	108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/02/23 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0191	06/06/23	06/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/02/23 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.6	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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH05@18-19'
2306058-15 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/02/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0243	06/07/23	06/08/23	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: **06/02/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0214	64.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0211	63.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/02/23 11:15**

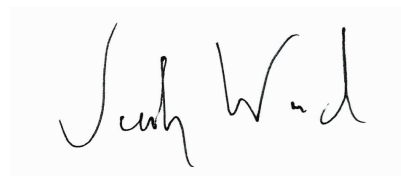
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.206	0.0100	mg/L	1	BGF0384	06/09/23	06/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/02/23 11:15**

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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH05@18-19'
2306058-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.31	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/02/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	15.3	0.0610	mg/L dry	1	BGF0392	06/10/23	06/16/23	EPA 6020B	
Magnesium	3.84	0.0610	"	"	"	"	"	"	
Sodium	41.2	0.0610	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/02/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.44	0.00100	units	1	BGF0627	06/17/23	06/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.0		%	1	BGF0375	06/09/23	06/09/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/02/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.305	0.0100	mmhos/cm	1	BGF0399	06/11/23	06/11/23	EPA 120.1	

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

Date Sampled: **06/02/23 11:15**

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 - Thompson 28-10

Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH05@18-19'
2306058-15 (Soil)

Summit Scientific

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

pH	8.04	pH Units	1	BGF0398	06/11/23	06/11/23	EPA 9045D
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Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BH06@0.5'
2306058-16 (Soil)

Summit Scientific

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

Date Sampled: **06/02/23 08:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.61			pH Units	1	BGF0315	06/08/23	06/08/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG01@0.5'
2306058-17 (Soil)

Summit Scientific

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

Date Sampled: **06/02/23 10:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	6.41			pH Units	1	BGF0315	06/08/23	06/08/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG01@6'
2306058-18 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/02/23 10:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.61	0.200		mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 10:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	88.9			%	1	BGF0375	06/09/23	06/09/23	Calculation	

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

Date Sampled: **06/02/23 10:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.80			pH Units	1	BGG0812	07/25/23	07/25/23	EPA 9045D	I-03

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG01@18-19'
2306058-19 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/02/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.00	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.3		%	1	BGF0375	06/09/23	06/09/23	Calculation	

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

Date Sampled: **06/02/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.13		pH Units	1	BGG0812	07/25/23	07/25/23	EPA 9045D	I-03

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG02@0.5'
2306058-20 (Soil)

Summit Scientific

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

Date Sampled: **06/02/23 10:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.10			pH Units	1	BGF0315	06/08/23	06/08/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG02@6'
2306058-21 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/02/23 10:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.61	0.200		mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 10:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	90.7			%	1	BGF0375	06/09/23	06/09/23	Calculation	

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

Date Sampled: **06/02/23 10:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.85			pH Units	1	BGG0812	07/25/23	07/25/23	EPA 9045D	I-03

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG02@18-19'
2306058-22 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/02/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.39	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.6		%	1	BGF0375	06/09/23	06/09/23	Calculation	

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

Date Sampled: **06/02/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BGG0812	07/25/23	07/25/23	EPA 9045D	I-03

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG03@0.5'
2306058-23 (Soil)

Summit Scientific

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

Date Sampled: **06/02/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.14			pH Units	1	BGF0315	06/08/23	06/08/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG03@6'
2306058-24 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/02/23 10:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.79	0.200	mg/kg dry	1	BGF0299	06/08/23	06/13/23	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 10:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.1		%	1	BGF0375	06/09/23	06/09/23	Calculation	

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

Date Sampled: **06/02/23 10:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.22		pH Units	1	BGG0812	07/25/23	07/25/23	EPA 9045D	I-03

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG03@18-19'
2306058-25 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/02/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.47	0.200	mg/kg dry	1	BGF0318	06/08/23	06/09/23	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.9		%	1	BGF0375	06/09/23	06/09/23	Calculation	

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

Date Sampled: **06/02/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.19		pH Units	1	BGG0812	07/25/23	07/25/23	EPA 9045D	I-03

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG04@0.5'
2306058-26 (Soil)

Summit Scientific

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

Date Sampled: **06/02/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.92			pH Units	1	BGF0315	06/08/23	06/08/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG04@6'
2306058-27 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/02/23 10:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	0.521	0.200		mg/kg dry	1	BGF0318	06/08/23	06/09/23	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 10:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	89.5			%	1	BGF0375	06/09/23	06/09/23	Calculation	

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

Date Sampled: **06/02/23 10:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.27			pH Units	1	BGG0812	07/25/23	07/25/23	EPA 9045D	I-03

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG04@18-19'
2306058-28 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/02/23 11:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.27	0.200	mg/kg dry	1	BGF0318	06/08/23	06/09/23	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 11:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.3		%	1	BGF0375	06/09/23	06/09/23	Calculation	

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

Date Sampled: **06/02/23 11:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.26		pH Units	1	BGG0812	07/25/23	07/25/23	EPA 9045D	I-03

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG05@0.5'
2306058-29 (Soil)

Summit Scientific

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

Date Sampled: **06/02/23 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	6.32			pH Units	1	BGF0315	06/08/23	06/08/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG05@6'
2306058-30 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/02/23 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.540	0.200	mg/kg dry	1	BGF0318	06/08/23	06/09/23	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.0		%	1	BGF0375	06/09/23	06/09/23	Calculation	

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

Date Sampled: **06/02/23 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.28		pH Units	1	BGG0812	07/25/23	07/25/23	EPA 9045D	I-03

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

BG05@18-19'
2306058-31 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/02/23 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.06	0.200	mg/kg dry	1	BGF0318	06/08/23	06/09/23	EPA 6020B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/02/23 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.2		%	1	BGF0375	06/09/23	06/09/23	Calculation	

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

Date Sampled: **06/02/23 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.22		pH Units	1	BGG0812	07/25/23	07/25/23	EPA 9045D	I-03

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGF0185 - EPA 5030 Soil MS

Blank (BGF0185-BLK1)

Prepared & Analyzed: 06/06/23

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	0.0582		"	0.0400		146	50-150			
Surrogate: Toluene-d8	0.0372		"	0.0400		93.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0429		"	0.0400		107	50-150			

LCS (BGF0185-BS1)

Prepared & Analyzed: 06/06/23

Benzene	0.0704	0.0020	mg/kg	0.0750		93.9	70-130			
Toluene	0.0813	0.0050	"	0.0750		108	70-130			
Ethylbenzene	0.0797	0.0050	"	0.0750		106	70-130			
m,p-Xylene	0.142	0.010	"	0.150		94.6	70-130			
o-Xylene	0.0696	0.0050	"	0.0750		92.8	70-130			
1,2,4-Trimethylbenzene	0.0619	0.0050	"	0.0750		82.5	70-130			
1,3,5-Trimethylbenzene	0.0770	0.0050	"	0.0750		103	70-130			
Naphthalene	0.0597	0.0038	"	0.0750		79.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0514		"	0.0400		129	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0459		"	0.0400		115	50-150			

Matrix Spike (BGF0185-MS1)

Source: 2306023-01

Prepared: 06/06/23 Analyzed: 06/07/23

Benzene	0.0667	0.0020	mg/kg	0.0750	ND	88.9	70-130			
Toluene	0.0806	0.0050	"	0.0750	ND	107	70-130			
Ethylbenzene	0.0786	0.0050	"	0.0750	ND	105	70-130			
m,p-Xylene	0.140	0.010	"	0.150	ND	93.4	70-130			
o-Xylene	0.0690	0.0050	"	0.0750	ND	92.0	70-130			
1,2,4-Trimethylbenzene	0.0614	0.0050	"	0.0750	ND	81.9	70-130			
1,3,5-Trimethylbenzene	0.0766	0.0050	"	0.0750	ND	102	70-130			
Naphthalene	0.0591	0.0038	"	0.0750	ND	78.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0496		"	0.0400		124	50-150			
Surrogate: Toluene-d8	0.0388		"	0.0400		96.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0450		"	0.0400		113	50-150			

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

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

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

Batch BGF0185 - EPA 5030 Soil MS

Matrix Spike Dup (BGF0185-MSD1)		Source: 2306023-01			Prepared: 06/06/23 Analyzed: 06/07/23					
Benzene	0.0708	0.0020	mg/kg	0.0750	ND	94.4	70-130	5.98	30	
Toluene	0.0844	0.0050	"	0.0750	ND	113	70-130	4.62	30	
Ethylbenzene	0.0902	0.0050	"	0.0750	ND	120	70-130	13.8	30	
m,p-Xylene	0.161	0.010	"	0.150	ND	107	70-130	13.6	30	
o-Xylene	0.0788	0.0050	"	0.0750	ND	105	70-130	13.2	30	
1,2,4-Trimethylbenzene	0.0709	0.0050	"	0.0750	ND	94.5	70-130	14.3	30	
1,3,5-Trimethylbenzene	0.0879	0.0050	"	0.0750	ND	117	70-130	13.8	30	
Naphthalene	0.0744	0.0038	"	0.0750	ND	99.2	70-130	23.0	30	
Surrogate: 1,2-Dichloroethane-d4		0.0500	"	0.0400		125	50-150			
Surrogate: Toluene-d8		0.0372	"	0.0400		93.0	50-150			
Surrogate: 4-Bromofluorobenzene		0.0431	"	0.0400		108	50-150			

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Tasman Geosciences
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Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGF0191 - EPA 3550A

Blank (BGF0191-BLK1)

Prepared: 06/06/23 Analyzed: 06/07/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.2		"	12.5		89.5	30-150			

LCS (BGF0191-BS1)

Prepared: 06/06/23 Analyzed: 06/07/23

C10-C28 (DRO)	379	50	mg/kg	500		75.7	70-130			
Surrogate: o-Terphenyl	11.7		"	12.5		93.9	30-150			

Matrix Spike (BGF0191-MS1)

Source: 2306023-01

Prepared: 06/06/23 Analyzed: 06/07/23

C10-C28 (DRO)	363	50	mg/kg	500	11.9	70.2	70-130			
Surrogate: o-Terphenyl	11.3		"	12.5		90.3	30-150			

Matrix Spike Dup (BGF0191-MSD1)

Source: 2306023-01

Prepared: 06/06/23 Analyzed: 06/07/23

C10-C28 (DRO)	376	50	mg/kg	500	11.9	72.8	70-130	3.58	20	
Surrogate: o-Terphenyl	10.9		"	12.5		87.1	30-150			

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

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 BGF0243 - EPA 5030 Soil MS

Blank (BGF0243-BLK1)

Prepared & Analyzed: 06/07/23

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	0.0299		"	0.0333		89.8	40-150			
Surrogate: Fluoranthene-d10	0.0306		"	0.0333		91.7	40-150			

LCS (BGF0243-BS1)

Prepared & Analyzed: 06/07/23

Acenaphthene	0.0301	0.00500	mg/kg	0.0333	90.2	31-137
Anthracene	0.0276	0.00500	"	0.0333	82.7	30-120
Benzo (a) anthracene	0.0233	0.00500	"	0.0333	70.0	30-120
Benzo (a) pyrene	0.0311	0.00500	"	0.0333	93.3	30-120
Benzo (b) fluoranthene	0.0285	0.00500	"	0.0333	85.6	30-120
Benzo (k) fluoranthene	0.0289	0.00500	"	0.0333	86.7	30-120
Chrysene	0.0314	0.00500	"	0.0333	94.1	30-120
Dibenz (a,h) anthracene	0.0258	0.00500	"	0.0333	77.5	30-120
Fluoranthene	0.0275	0.00500	"	0.0333	82.6	30-120
Fluorene	0.0282	0.00500	"	0.0333	84.7	30-120
Indeno (1,2,3-cd) pyrene	0.0266	0.00500	"	0.0333	79.9	30-120
Pyrene	0.0346	0.00500	"	0.0333	104	35-142
1-Methylnaphthalene	0.0209	0.00500	"	0.0333	62.8	35-142
2-Methylnaphthalene	0.0252	0.00500	"	0.0333	75.6	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0283		"	0.0333	85.0	40-150
Surrogate: Fluoranthene-d10	0.0285		"	0.0333	85.4	40-150

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

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 BGF0243 - EPA 5030 Soil MS

Matrix Spike (BGF0243-MS1)			Source: 2306054-01			Prepared & Analyzed: 06/07/23					
Acenaphthene	0.0227	0.00500	mg/kg	0.0333	ND	68.0	31-137				
Anthracene	0.0239	0.00500	"	0.0333	ND	71.6	30-120				
Benzo (a) anthracene	0.0232	0.00500	"	0.0333	ND	69.5	30-120				
Benzo (a) pyrene	0.0225	0.00500	"	0.0333	ND	67.5	30-120				
Benzo (b) fluoranthene	0.0201	0.00500	"	0.0333	ND	60.4	30-120				
Benzo (k) fluoranthene	0.0219	0.00500	"	0.0333	ND	65.8	30-120				
Chrysene	0.0247	0.00500	"	0.0333	ND	74.0	30-120				
Dibenz (a,h) anthracene	0.0165	0.00500	"	0.0333	ND	49.6	30-120				
Fluoranthene	0.0229	0.00500	"	0.0333	ND	68.8	30-120				
Fluorene	0.0224	0.00500	"	0.0333	ND	67.1	30-120				
Indeno (1,2,3-cd) pyrene	0.0151	0.00500	"	0.0333	ND	45.3	30-120				
Pyrene	0.0253	0.00500	"	0.0333	ND	75.9	35-142				
1-Methylnaphthalene	0.0203	0.00500	"	0.0333	ND	60.8	15-130				
2-Methylnaphthalene	0.0222	0.00500	"	0.0333	ND	66.6	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0249		"	0.0333		74.8	40-150				
Surrogate: Fluoranthene-d10	0.0256		"	0.0333		76.8	40-150				

Matrix Spike Dup (BGF0243-MSD1)			Source: 2306054-01			Prepared & Analyzed: 06/07/23					
Acenaphthene	0.0196	0.00500	mg/kg	0.0333	ND	58.7	31-137	14.6	30		
Anthracene	0.0200	0.00500	"	0.0333	ND	60.1	30-120	17.5	30		
Benzo (a) anthracene	0.0202	0.00500	"	0.0333	ND	60.5	30-120	13.9	30		
Benzo (a) pyrene	0.0195	0.00500	"	0.0333	ND	58.5	30-120	14.2	30		
Benzo (b) fluoranthene	0.0174	0.00500	"	0.0333	ND	52.3	30-120	14.4	30		
Benzo (k) fluoranthene	0.0180	0.00500	"	0.0333	ND	54.1	30-120	19.6	30		
Chrysene	0.0205	0.00500	"	0.0333	ND	61.6	30-120	18.3	30		
Dibenz (a,h) anthracene	0.0167	0.00500	"	0.0333	ND	50.1	30-120	0.991	30		
Fluoranthene	0.0189	0.00500	"	0.0333	ND	56.8	30-120	19.0	30		
Fluorene	0.0195	0.00500	"	0.0333	ND	58.5	30-120	13.6	30		
Indeno (1,2,3-cd) pyrene	0.0158	0.00500	"	0.0333	ND	47.4	30-120	4.48	30		
Pyrene	0.0212	0.00500	"	0.0333	ND	63.7	35-142	17.5	30		
1-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.3	15-130	19.0	50		
2-Methylnaphthalene	0.0195	0.00500	"	0.0333	ND	58.6	15-130	12.7	50		
Surrogate: 2-Methylnaphthalene-d10	0.0214		"	0.0333		64.1	40-150				
Surrogate: Fluoranthene-d10	0.0219		"	0.0333		65.7	40-150				

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

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 BGF0384 - EPA 3050B

Blank (BGF0384-BLK1)

Prepared: 06/09/23 Analyzed: 06/16/23

Boron ND 0.0100 mg/L

LCS (BGF0384-BS1)

Prepared: 06/09/23 Analyzed: 06/16/23

Boron 5.76 0.0100 mg/L 5.00 115 80-120

Duplicate (BGF0384-DUP1)

Source: 2306048-21

Prepared: 06/09/23 Analyzed: 06/16/23

Boron 0.0541 0.0100 mg/L 0.0572 5.48 20

Matrix Spike (BGF0384-MS1)

Source: 2306048-21

Prepared: 06/09/23 Analyzed: 06/16/23

Boron 5.64 0.0100 mg/L 5.00 0.0572 112 75-125

Matrix Spike Dup (BGF0384-MSD1)

Source: 2306048-21

Prepared: 06/09/23 Analyzed: 06/16/23

Boron 5.67 0.0100 mg/L 5.00 0.0572 112 75-125 0.411 25

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

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 BGF0299 - EPA 3050B

Blank (BGF0299-BLK1)

Prepared: 06/08/23 Analyzed: 06/13/23

Arsenic ND 0.200 mg/kg wet

LCS (BGF0299-BS1)

Prepared: 06/08/23 Analyzed: 06/13/23

Arsenic 36.4 0.200 mg/kg wet 40.0 91.0 80-120

Duplicate (BGF0299-DUP1)

Source: 2306048-26

Prepared: 06/08/23 Analyzed: 06/13/23

Arsenic 1.15 0.200 mg/kg dry 1.14 1.61 20

Matrix Spike (BGF0299-MS1)

Source: 2306048-26

Prepared: 06/08/23 Analyzed: 06/13/23

Arsenic 34.9 0.200 mg/kg dry 41.9 1.14 80.7 75-125

Matrix Spike Dup (BGF0299-MSD1)

Source: 2306048-26

Prepared: 06/08/23 Analyzed: 06/13/23

Arsenic 38.5 0.200 mg/kg dry 41.9 1.14 89.2 75-125 9.66 25

Batch BGF0318 - EPA 3050B

Blank (BGF0318-BLK1)

Prepared: 06/08/23 Analyzed: 06/09/23

Arsenic ND 0.200 mg/kg wet

LCS (BGF0318-BS1)

Prepared: 06/08/23 Analyzed: 06/09/23

Arsenic 36.9 0.200 mg/kg wet 40.0 92.3 80-120

Duplicate (BGF0318-DUP1)

Source: 2305285-04

Prepared: 06/08/23 Analyzed: 06/09/23

Arsenic 0.963 0.200 mg/kg dry 0.810 17.2 20

Matrix Spike (BGF0318-MS1)

Source: 2305285-04

Prepared: 06/08/23 Analyzed: 06/09/23

Arsenic 11.6 0.200 mg/kg dry 46.6 0.810 23.2 75-125 QM-07

Summit Scientific

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

Project: Noble - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BGF0318 - EPA 3050B

Matrix Spike Dup (BGF0318-MSD1)

Source: 2305285-04

Prepared: 06/08/23 Analyzed: 06/09/23

Arsenic	12.4	0.200	mg/kg dry	46.6	0.810	24.8	75-125	6.40	25	QM-07
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

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

Summit Scientific

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

Batch BGF0392 - General Preparation

Blank (BGF0392-BLK1)

Prepared: 06/10/23 Analyzed: 06/16/23

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

LCS (BGF0392-BS1)

Prepared: 06/10/23 Analyzed: 06/16/23

Calcium	6.13	0.0500	mg/L wet	5.00	123	70-130
Magnesium	5.49	0.0500	"	5.00	110	70-130
Sodium	5.45	0.0500	"	5.00	109	70-130

Summit Scientific

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

Project: Noble - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

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 BGF0375 - General Preparation

Duplicate (BGF0375-DUP1)

Source: 2306058-02

Prepared & Analyzed: 06/09/23

% Solids	87.0	%	86.9	0.165	20
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Summit Scientific

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

Project: Noble - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

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

Summit Scientific

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

Batch BGF0399 - General Preparation

Blank (BGF0399-BLK1)

Prepared & Analyzed: 06/11/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGF0399-BS1)

Prepared & Analyzed: 06/11/23

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 95-105

Duplicate (BGF0399-DUP1)

Source: 2306054-01

Prepared & Analyzed: 06/11/23

Specific Conductance (EC) 6.23 0.0100 mmhos/cm 6.33 1.70 20

Summit Scientific

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

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 BGF0315 - General Preparation

LCS (BGF0315-BS1)				Prepared & Analyzed: 06/08/23						
pH	9.15		pH Units	9.18		99.7	95-105			
Duplicate (BGF0315-DUP1)				Source: 2305166-02		Prepared & Analyzed: 06/08/23				
pH	8.17		pH Units		8.15			0.245	20	

Batch BGF0398 - General Preparation

LCS (BGF0398-BS1)				Prepared & Analyzed: 06/11/23						
pH	9.11		pH Units	9.18		99.2	95-105			
Duplicate (BGF0398-DUP1)				Source: 2306054-01		Prepared & Analyzed: 06/11/23				
pH	7.96		pH Units		8.05			1.12	20	

Batch BGG0812 - General Preparation

LCS (BGG0812-BS1)				Prepared & Analyzed: 07/25/23						
pH	9.02		pH Units	9.18		98.3	95-105			
Duplicate (BGG0812-DUP1)				Source: 2306058-18		Prepared & Analyzed: 07/25/23				
pH	7.81		pH Units		7.80			0.128	20	

Summit Scientific

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

Project: Noble - Thompson 28-10

Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
07/26/23 13:42

Notes and Definitions

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.
I-03	This sample was recieved and analyzed outside of the recommended holding time.
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



TASMAN

6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: AMS PowerProbe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 6/2/23 - 6/2/23

TOTAL WELL DEPTH (FT. BGS): 19

DEPTH TO WATER (FT. BGS): 11'

Thompson 28-10 Facility

BORING / WELL ID: BH01

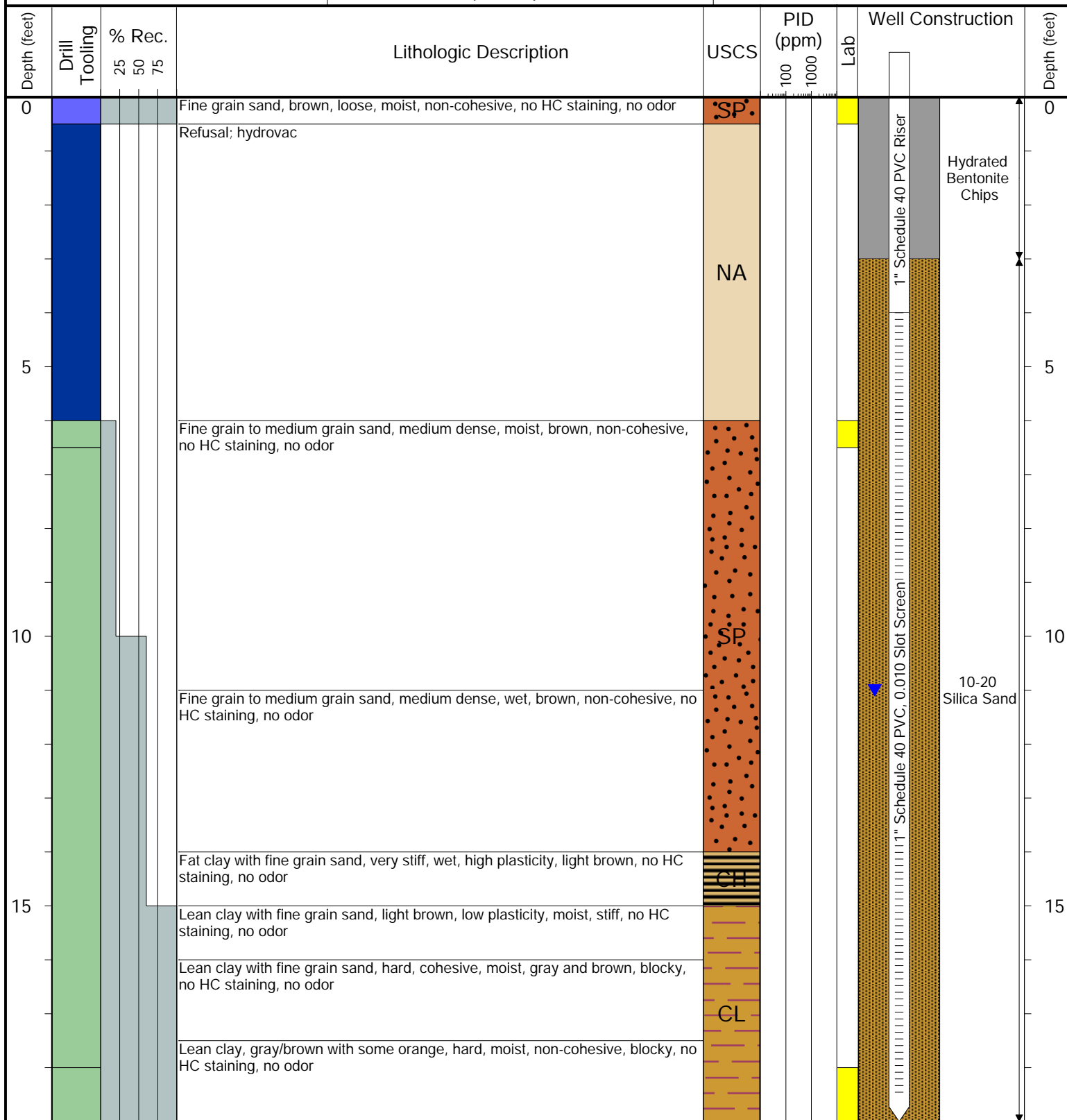
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.280700816

LONGITUDE (NAD 83): -104.55962025

CASING ELEVATION (FT. AMSL): 4741.45

GROUND ELEVATION (FT. AMSL): 4741.58



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Hydrovac

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



TASMAN

6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: AMS PowerProbe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 6/2/23 - 6/2/23

TOTAL WELL DEPTH (FT. BGS): 19

DEPTH TO WATER (FT. BGS): 12'

Thompson 28-10 Facility

BORING / WELL ID: BH02

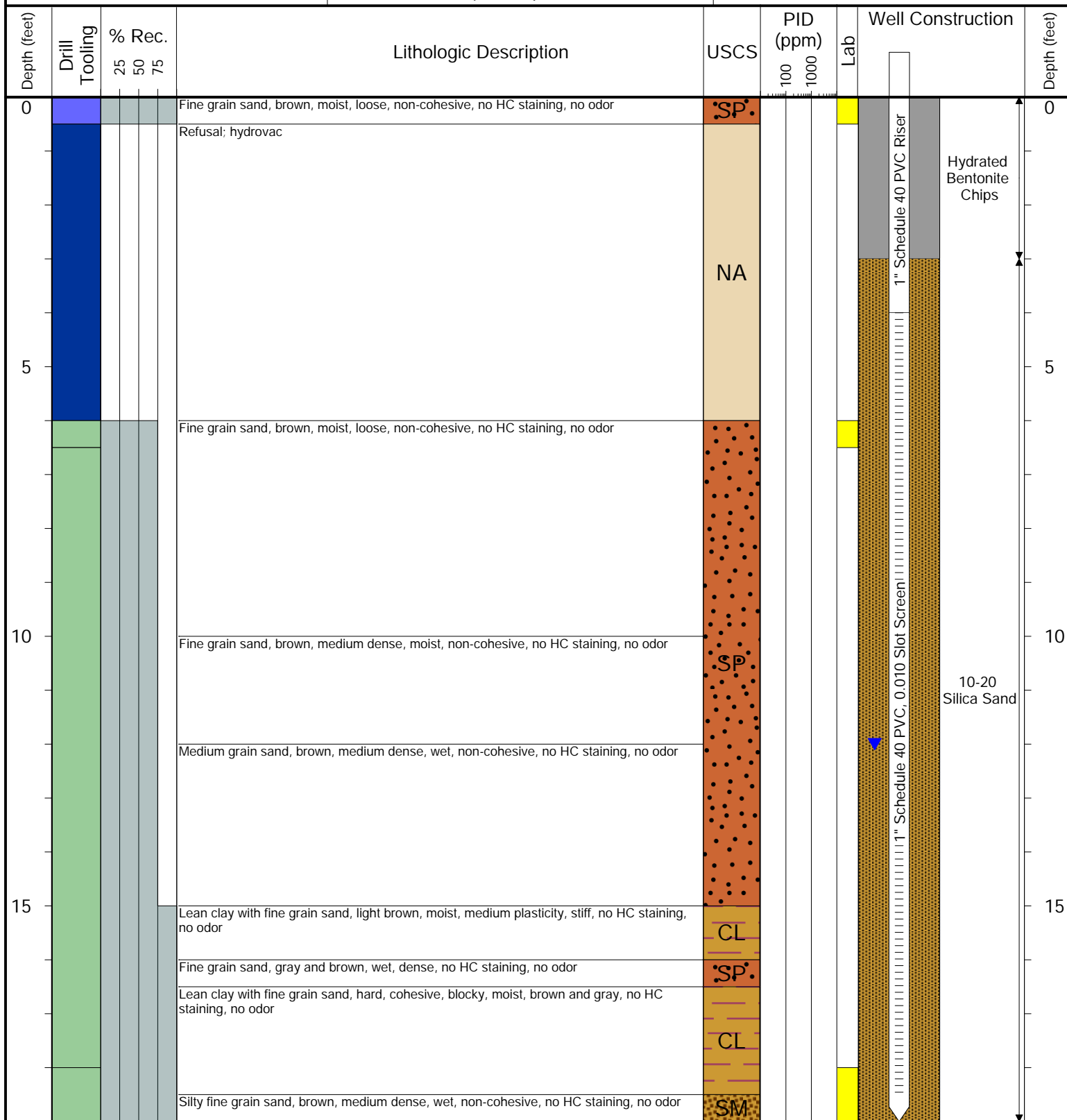
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.2807631243

LONGITUDE (NAD 83): -104.559620222

CASING ELEVATION (FT. AMSL): 4742.57

GROUND ELEVATION (FT. AMSL): 4742.83



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Hydrovac

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



TASMAN

6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: AMS PowerProbe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 6/2/23 - 6/2/23

TOTAL WELL DEPTH (FT. BGS): 19

DEPTH TO WATER (FT. BGS): 10'

Thompson 28-10 Facility

BORING / WELL ID: BH03

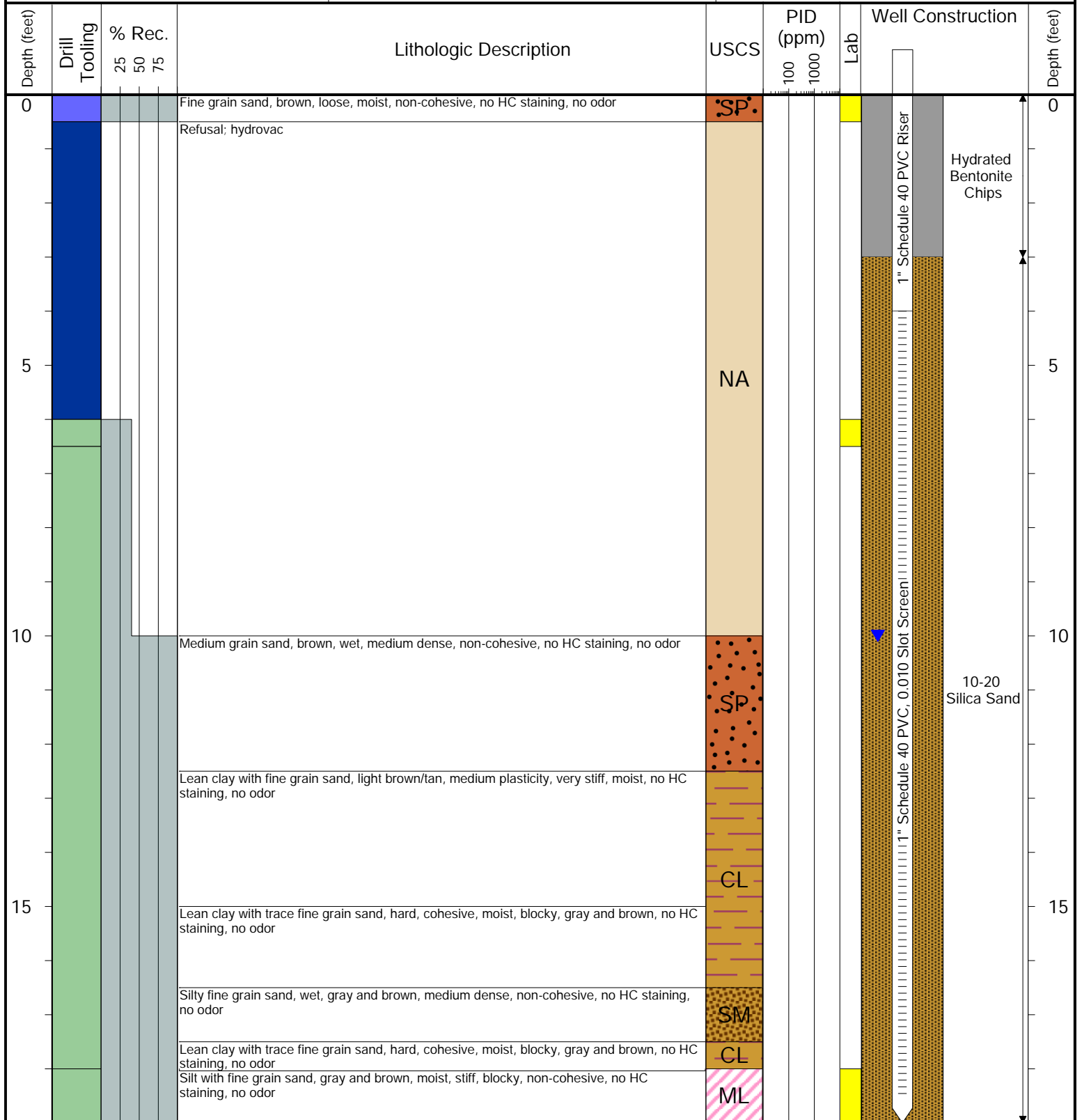
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.2807005968

LONGITUDE (NAD 83): -104.559538149

CASING ELEVATION (FT. AMSL): 4740.56

GROUND ELEVATION (FT. AMSL): 4740.73



Drilling / Sample Method:

Macro-Core
Hollow Stem Auger
Hydrovac
Hand Auger

Laboratory Sample Types:

Geotechnical Lab
Analytical Chemistry Lab
Geotechnical & Analytical Chemistry Lab



TASMAN

6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: AMS PowerProbe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 6/2/23 - 6/2/23

TOTAL WELL DEPTH (FT. BGS): 19

DEPTH TO WATER (FT. BGS): 10'

Thompson 28-10 Facility

BORING / WELL ID: BH04

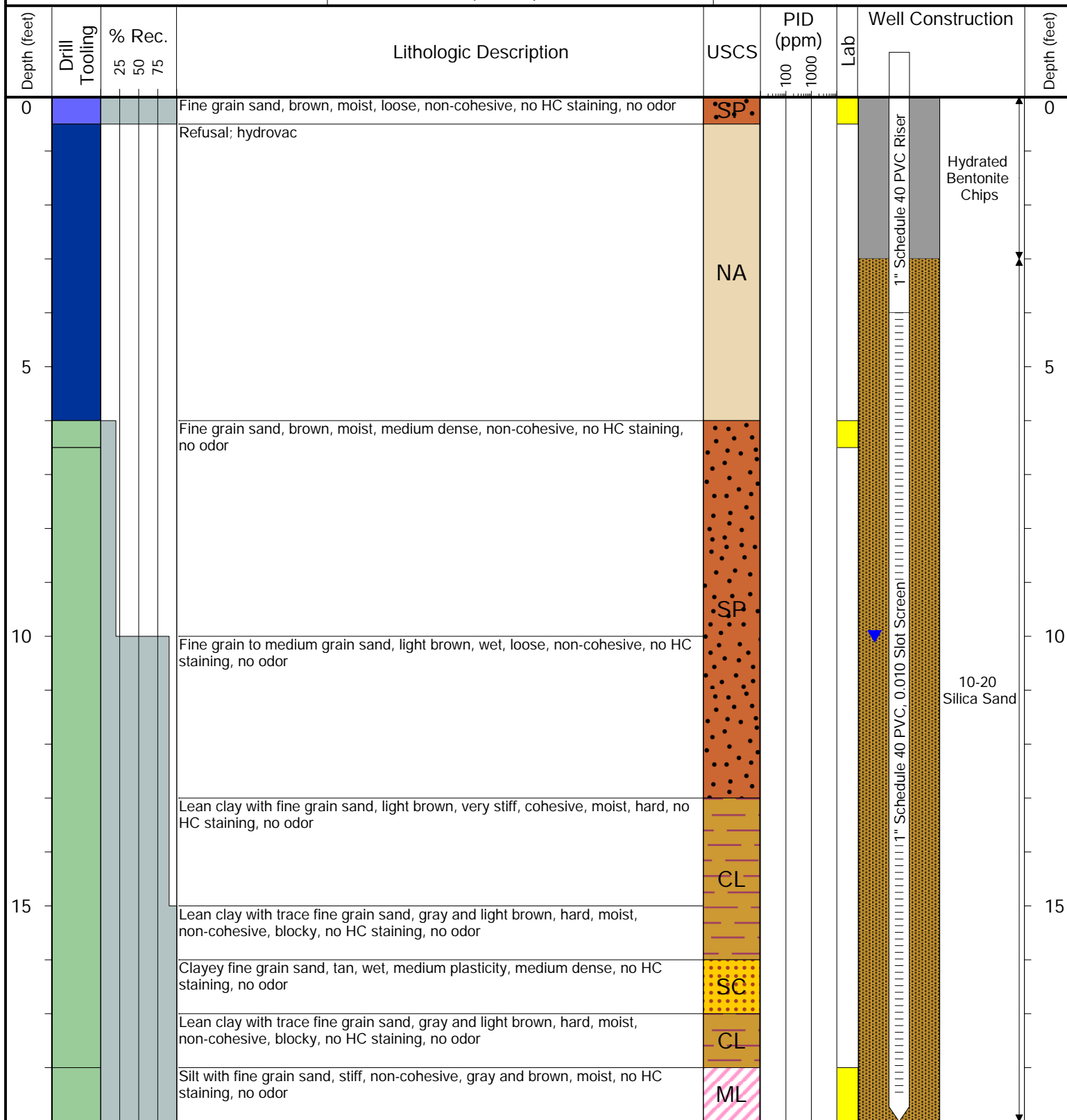
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.2806394075

LONGITUDE (NAD 83): -104.55961978

CASING ELEVATION (FT. AMSL): 4740.18

GROUND ELEVATION (FT. AMSL): 4740.34



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Hydrovac

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



TASMAN

6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: AMS PowerProbe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 6/2/23 - 6/2/23

TOTAL WELL DEPTH (FT. BGS): 19

DEPTH TO WATER (FT. BGS): 10.5'

Thompson 28-10 Facility

BORING / WELL ID: BH05

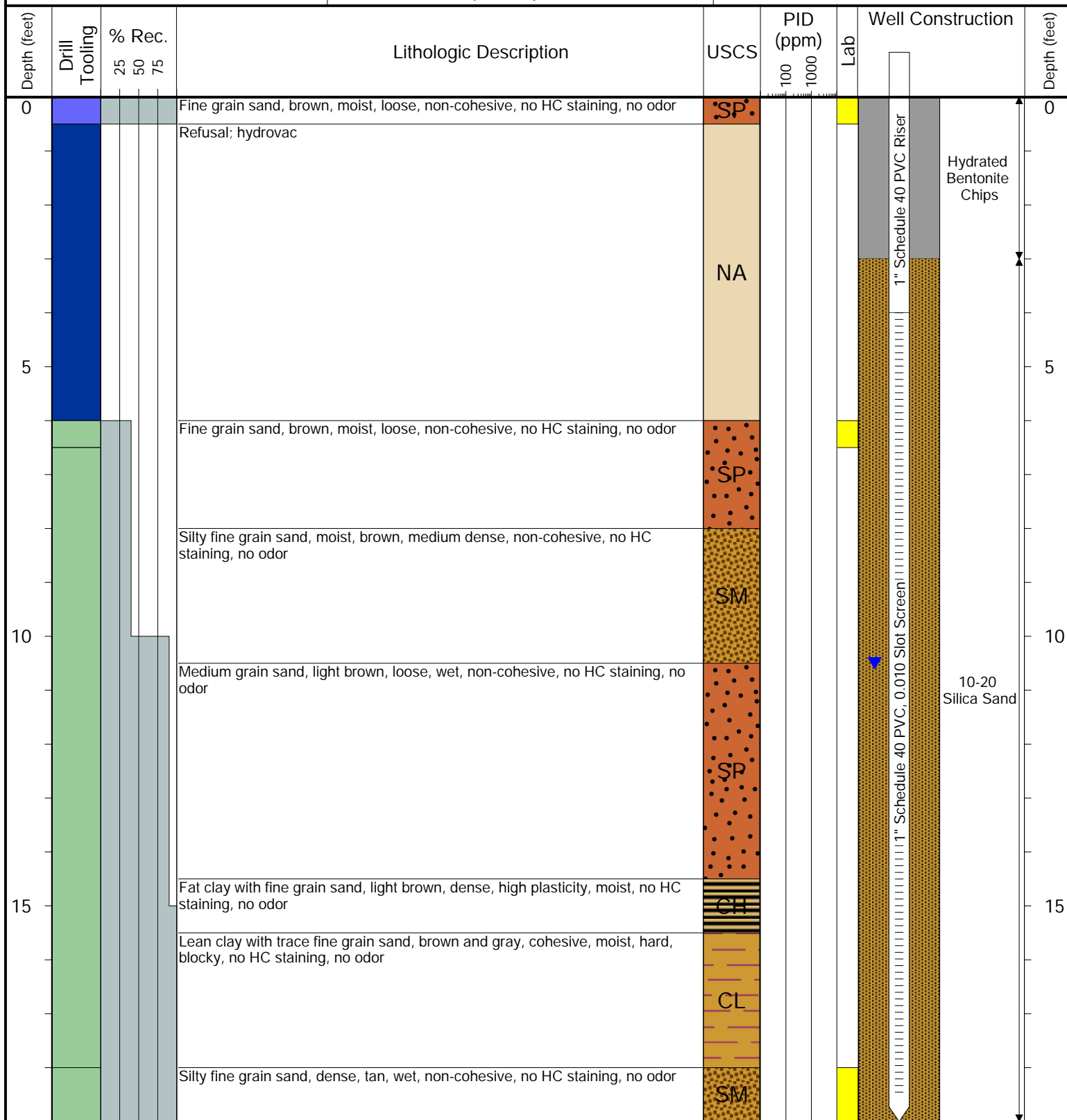
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.2807012222

LONGITUDE (NAD 83): -104.55970248

CASING ELEVATION (FT. AMSL): 4741.49

GROUND ELEVATION (FT. AMSL): 4741.65



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Hydrovac

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



TASMAN

6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: AMS PowerProbe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 6/2/23 - 6/2/23

TOTAL WELL DEPTH (FT. BGS): 19

DEPTH TO WATER (FT. BGS): 10'

Thompson 28-10 Facility

BORING / WELL ID: BH06

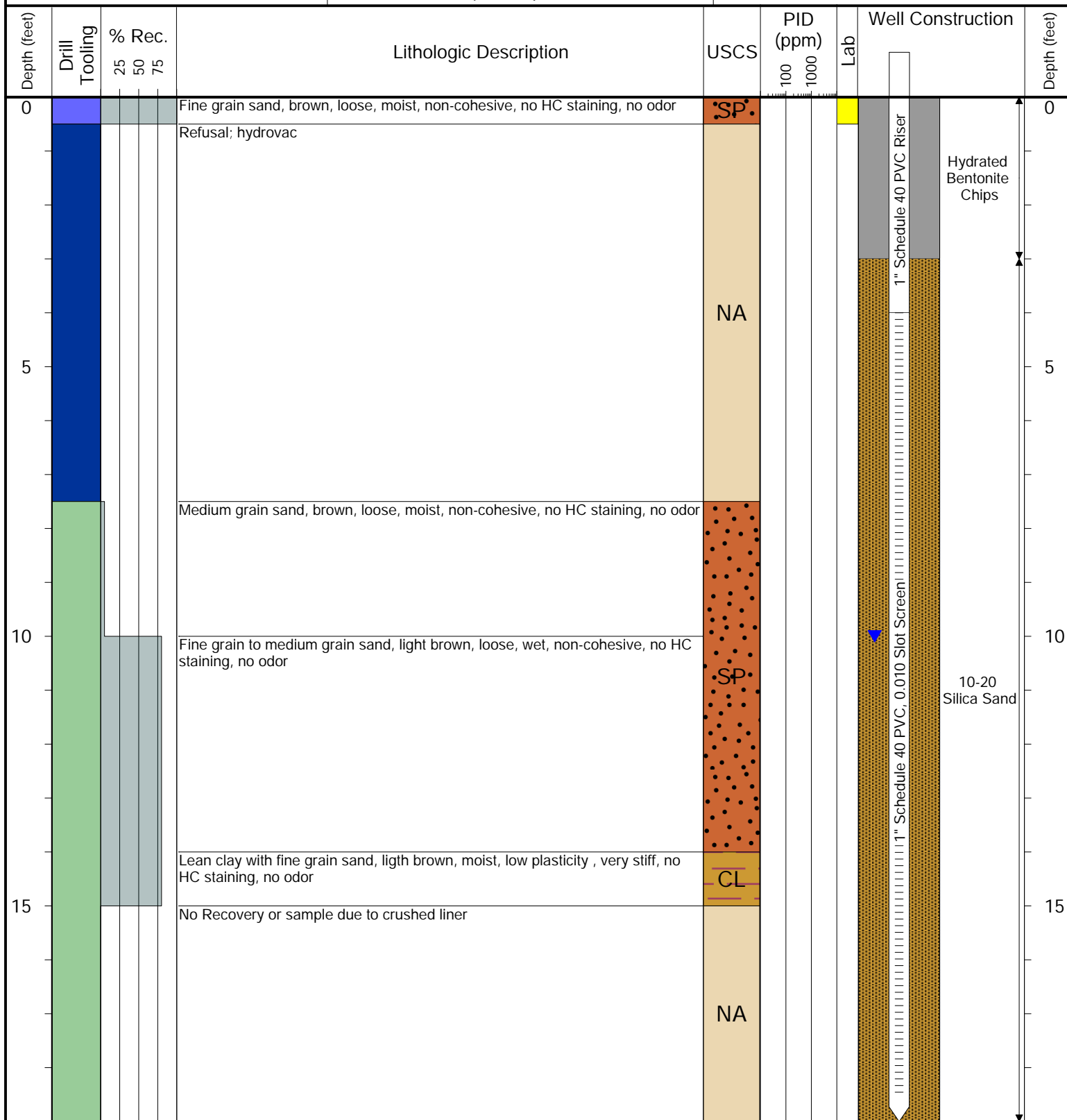
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.2806392506

LONGITUDE (NAD 83): -104.559703816

CASING ELEVATION (FT. AMSL): 4740.28

GROUND ELEVATION (FT. AMSL): 4740.51



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Hydrovac

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab

ATTACHMENT C

LABORATORY GROUNDWATER ANALYTICAL DATA REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 26, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

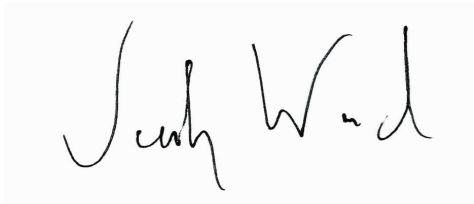
Broomfield, CO 80020

RE: Noble - Thompson 28-10

Work Order #2306387

Enclosed are the results of analyses for samples received by Summit Scientific on 06/20/23 17:44. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Jacob Wood". The signature is written in a cursive, flowing style.

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2306387-01	Water	06/19/23 12:52	06/20/23 17:44
BH02	2306387-02	Water	06/19/23 12:14	06/20/23 17:44
BH03	2306387-03	Water	06/19/23 12:15	06/20/23 17:44
BH04	2306387-04	Water	06/19/23 12:33	06/20/23 17:44
BH05	2306387-05	Water	06/19/23 12:35	06/20/23 17:44
BH06	2306387-06	Water	06/19/23 12:47	06/20/23 17:44

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

4653 Table Mountain Drive
Golden, CO 80403
303-277-9310

Lab ID	Page 1 of 1
2306387	

Client: Noble / Tasman Inc.		Send Data To: Project Manager: Jake Whritenour		Send Invoice To: Company: Noble Energy, Inc.	
Address: 6855 W. 119th. Ave.		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: Thompson 28-10	
City/State/Zip: Broomfield / CO / 80020				AFE#:	
Phone: 303-487-1228		Project Name: Thompson 28-10		PO/Billing Codes:	
Sampler Name: Dalton Hagen		Project Number: N/A		Contact: Dan Peterson	

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	1,2,4-TMB	1,3,5-TMB	TDS	Chloride	Sulfate	PAH	
1	BH01	6/19/23	1252	5	3		2		X				X	X	X	X	X	X	X	X	
2	BH02	I	1214	I	I		I		I				I	I	I	I	I	I	I	I	
3	BH03	I	1215	I	I		I		I				I	I	I	I	I	I	I	I	
4	BH04	I	1233	I	I		I		I				I	I	I	I	I	I	I	I	
5	BH05	I	1235	I	I		I		I				I	I	I	I	I	I	I	I	
6	BH06	I	1247	I	I		I		I				I	I	I	I	I	I	I	I	
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

PAH list:
2-MN

Relinquished by:	Date/Time: 6/19/23 1830	Received by: Tasman Lockbox	Date/Time: 6/19/23 1830	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lockbox	Date/Time: 6/20/23 1744	Received by:	Date/Time: 6/20/23 1744	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 8.3	Corrected Temperature: 6	IR gun #:		HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2306387Client: Noble Tassman Client Project ID: Thompson 28-10Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other: ☐ Airbill #: ☐

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☒ Other ☐Temp (°C) 8.3 Thermometer # (

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°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
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<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"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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"/>	
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

AB
Custodian Printed Name

6/13/20/23
Date/Time



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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

BH01
2306387-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/19/23 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BGF0765	06/21/23	06/22/23	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: **06/19/23 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	13.8	104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.1	106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.9	96.8 %	21-167		"	"	"	"	

PAH by EPA Method 8270D SIM

Date Sampled: **06/19/23 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2-Methylnaphthalene	ND	0.500	ug/l	1	BGF0737	06/21/23	06/22/23	EPA 8270D SIM	

Date Sampled: **06/19/23 12:52**

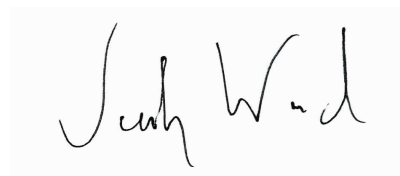
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	1.58	78.9 %	40-150		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/19/23 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

BH01
2306387-01 (Water)

Summit Scientific

Anions by EPA Method 300.0

Chloride	246	12.0	mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0
Sulfate	266	60.0	"	"	"	"	"	"

Total Dissolved Solids by SM2540C

Date Sampled: **06/19/23 12:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	993	10.0		mg/L	1	BGF0747	06/21/23	06/21/23	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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

BH02
2306387-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/19/23 12:14**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGF0765	06/21/23	06/22/23	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: **06/19/23 12:14**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.8	103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.3	107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.4 %	21-167		"	"	"	"	

PAH by EPA Method 8270D SIM

Date Sampled: **06/19/23 12:14**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
2-Methylnaphthalene	ND	0.500	ug/l	1	BGF0737	06/21/23	06/22/23	EPA 8270D SIM	

Date Sampled: **06/19/23 12:14**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.54	77.0 %	40-150		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/19/23 12:14**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	289	12.0	mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	

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 - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

BH02
2306387-02 (Water)

Summit Scientific

Anions by EPA Method 300.0

Sulfate	270	60.0	mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0
---------	-----	------	------	-----	---------	----------	----------	-----------

Total Dissolved Solids by SM2540C

Date Sampled: **06/19/23 12:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1020	10.0	mg/L	1	BGF0747	06/21/23	06/21/23	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 - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

BH03
2306387-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/19/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BGF0765	06/21/23	06/22/23	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: **06/19/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	13.6	102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.1	106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.8	96.2 %	21-167		"	"	"	"	

PAH by EPA Method 8270D SIM

Date Sampled: **06/19/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2-Methylnaphthalene	ND	0.500	ug/l	1	BGF0737	06/21/23	06/22/23	EPA 8270D SIM	

Date Sampled: **06/19/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	1.52	75.8 %	40-150		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/19/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	204	12.0	mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	

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

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

BH03
2306387-03 (Water)

Summit Scientific

Anions by EPA Method 300.0

Sulfate	241	60.0	mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0
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Total Dissolved Solids by SM2540C

Date Sampled: **06/19/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	855	10.0	mg/L	1	BGF0747	06/21/23	06/21/23	SM2540C	

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Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

BH04
2306387-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/19/23 12:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BGF0765	06/21/23	06/22/23	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: **06/19/23 12:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	13.9	104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.5	108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.4	101 %	21-167		"	"	"	"	

PAH by EPA Method 8270D SIM

Date Sampled: **06/19/23 12:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2-Methylnaphthalene	ND	0.500	ug/l	1	BGF0737	06/21/23	06/22/23	EPA 8270D SIM	

Date Sampled: **06/19/23 12:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	1.36	68.1 %	40-150		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/19/23 12:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	210	12.0	mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	

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Project: Noble - Thompson 28-10

Project Number: UWRWE-A2396-ABN

Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

BH04
2306387-04 (Water)

Summit Scientific

Anions by EPA Method 300.0

Sulfate	236	60.0	mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0
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Total Dissolved Solids by SM2540C

Date Sampled: **06/19/23 12:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	804	10.0	mg/L	1	BGF0747	06/21/23	06/21/23	SM2540C	

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Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

BH05
2306387-05 (Water)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/19/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BGF0765	06/21/23	06/22/23	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: **06/19/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	14.2	106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.4	108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.9	96.6 %	21-167		"	"	"	"	

PAH by EPA Method 8270D SIM

Date Sampled: **06/19/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2-Methylnaphthalene	ND	0.500	ug/l	1	BGF0737	06/21/23	06/22/23	EPA 8270D SIM	

Date Sampled: **06/19/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	1.40	70.2 %	40-150		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/19/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	291	12.0	mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	

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Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

BH05
2306387-05 (Water)

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Anions by EPA Method 300.0

Sulfate	270	60.0	mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0
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Total Dissolved Solids by SM2540C

Date Sampled: **06/19/23 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	991	10.0	mg/L	1	BGF0747	06/21/23	06/21/23	SM2540C	

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Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

BH06
2306387-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/19/23 12:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BGF0765	06/21/23	06/22/23	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: **06/19/23 12:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	14.6	109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.1	106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.2	99.4 %	21-167		"	"	"	"	

PAH by EPA Method 8270D SIM

Date Sampled: **06/19/23 12:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2-Methylnaphthalene	ND	0.500	ug/l	1	BGF0737	06/21/23	06/22/23	EPA 8270D SIM	

Date Sampled: **06/19/23 12:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	1.56	78.1 %	40-150		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/19/23 12:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	280	12.0	mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	

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Reported:
06/26/23 10:55

BH06
2306387-06 (Water)

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Anions by EPA Method 300.0

Sulfate	299	60.0	mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0
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Total Dissolved Solids by SM2540C

Date Sampled: **06/19/23 12:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1020	10.0	mg/L	1	BGF0747	06/21/23	06/21/23	SM2540C	

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Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BGF0765 - EPA 5030 Water MS

Blank (BGF0765-BLK1)

Prepared: 06/21/23 Analyzed: 06/22/23

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	13.5		"	13.3		102	23-173			
Surrogate: Toluene-d8	14.1		"	13.3		106	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.3	21-167			

LCS (BGF0765-BS1)

Prepared: 06/21/23 Analyzed: 06/22/23

Benzene	40.0	1.0	ug/l	41.7		96.0	51-132			
Toluene	41.7	1.0	"	41.7		100	51-138			
Ethylbenzene	42.3	1.0	"	41.7		102	58-146			
m,p-Xylene	85.1	2.0	"	83.3		102	57-144			
o-Xylene	42.8	1.0	"	41.7		103	53-146			
Naphthalene	44.3	1.0	"	41.7		106	70-130			
1,2,4-Trimethylbenzene	50.1	1.0	"	41.7		120	70-130			
1,3,5-Trimethylbenzene	51.7	1.0	"	41.7		124	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105	23-173			
Surrogate: Toluene-d8	13.7		"	13.3		103	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.5	21-167			

Matrix Spike (BGF0765-MS1)

Source: 2306386-01

Prepared: 06/21/23 Analyzed: 06/22/23

Benzene	40.1	1.0	ug/l	41.7	ND	96.2	34-141			
Toluene	41.1	1.0	"	41.7	ND	98.7	27-151			
Ethylbenzene	43.5	1.0	"	41.7	ND	104	29-160			
m,p-Xylene	89.7	2.0	"	83.3	ND	108	20-166			
o-Xylene	44.0	1.0	"	41.7	ND	106	33-159			
Naphthalene	57.8	1.0	"	41.7	ND	139	70-130			QM-07
1,2,4-Trimethylbenzene	50.6	1.0	"	41.7	ND	121	70-130			
1,3,5-Trimethylbenzene	52.0	1.0	"	41.7	ND	125	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.9		"	13.3		104	23-173			
Surrogate: Toluene-d8	13.8		"	13.3		103	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.7	21-167			

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Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

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 BGF0765 - EPA 5030 Water MS

Matrix Spike Dup (BGF0765-MSD1)	Source: 2306386-01			Prepared: 06/21/23 Analyzed: 06/22/23						
Benzene	40.8	1.0	ug/l	41.7	ND	98.0	34-141	1.85	30	QM-07
Toluene	42.2	1.0	"	41.7	ND	101	27-151	2.71	30	
Ethylbenzene	43.1	1.0	"	41.7	ND	103	29-160	0.808	30	
m,p-Xylene	83.6	2.0	"	83.3	ND	100	20-166	7.05	30	
o-Xylene	44.2	1.0	"	41.7	ND	106	33-159	0.590	30	
Naphthalene	57.1	1.0	"	41.7	ND	137	70-130	1.17	30	
1,2,4-Trimethylbenzene	51.4	1.0	"	41.7	ND	123	70-130	1.55	30	
1,3,5-Trimethylbenzene	52.9	1.0	"	41.7	ND	127	70-130	1.73	30	
Surrogate: 1,2-Dichloroethane-d4	15.1		"	13.3		113	23-173			
Surrogate: Toluene-d8	14.2		"	13.3		107	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.4	21-167			

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Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

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 BGF0737 - EPA 5030 Water MS

Blank (BGF0737-BLK1)

Prepared & Analyzed: 06/21/23

Acenaphthene	ND	0.500	ug/l								
Acenaphthylene	ND	0.200	"								
Anthracene	ND	0.200	"								
Benzo (a) anthracene	ND	0.100	"								
Benzo (b) fluoranthene	ND	0.200	"								
Benzo (k) fluoranthene	ND	0.200	"								
Benzo (g,h,i) perylene	ND	0.200	"								
Benzo (a) pyrene	ND	0.200	"								
Chrysene	ND	0.200	"								
Dibenz (a,h) anthracene	ND	0.200	"								
Fluoranthene	ND	2.00	"								
Fluorene	ND	0.200	"								
Indeno (1,2,3-cd) pyrene	ND	0.300	"								
Phenanthrene	ND	0.500	"								
Pyrene	ND	1.00	"								
1-Methylnaphthalene	ND	0.500	"								
2-Methylnaphthalene	ND	0.500	"								
Surrogate: 2-Methylnaphthalene-d10	1.73		"	2.00		86.4		40-150			
Surrogate: Fluoranthene-d10	2.33		"	2.00		117		40-150			

LCS (BGF0737-BS1)

Prepared & Analyzed: 06/21/23

Acenaphthene	2.13	0.500	ug/l	2.00		107		30-120			
Acenaphthylene	2.29	0.200	"	2.00		114		30-120			
Anthracene	2.31	0.200	"	2.00		115		30-120			
Benzo (a) anthracene	2.23	0.100	"	2.00		111		30-120			
Benzo (b) fluoranthene	2.35	0.200	"	2.00		118		30-120			
Benzo (k) fluoranthene	2.01	0.200	"	2.00		101		30-120			
Benzo (g,h,i) perylene	2.08	0.200	"	2.00		104		30-120			
Benzo (a) pyrene	2.21	0.200	"	2.00		110		30-120			
Chrysene	2.11	0.200	"	2.00		105		30-120			
Dibenz (a,h) anthracene	2.26	0.200	"	2.00		113		30-120			
Fluoranthene	2.18	2.00	"	2.00		109		30-120			
Fluorene	2.21	0.200	"	2.00		111		30-120			
Indeno (1,2,3-cd) pyrene	2.22	0.300	"	2.00		111		30-120			
Phenanthrene	2.21	0.500	"	2.00		110		30-120			
Pyrene	2.38	1.00	"	2.00		119		30-120			
1-Methylnaphthalene	2.29	0.500	"	2.00		114		30-120			
2-Methylnaphthalene	2.13	0.500	"	2.00		106		0-200			

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Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

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 BGF0737 - EPA 5030 Water MS

LCS (BGF0737-BS1)

Prepared & Analyzed: 06/21/23

Surrogate: 2-Methylnaphthalene-d10	2.35		ug/l	2.00		118		40-150		
Surrogate: Fluoranthene-d10	2.32		"	2.00		116		40-150		

LCS Dup (BGF0737-BSD1)

Prepared & Analyzed: 06/21/23

Acenaphthene	2.20	0.500	ug/l	2.00		110	30-120	3.20	30	
Acenaphthylene	2.32	0.200	"	2.00		116	30-120	1.35	30	
Anthracene	2.30	0.200	"	2.00		115	30-120	0.291	30	
Benzo (a) anthracene	2.35	0.100	"	2.00		118	30-120	5.48	30	
Benzo (b) fluoranthene	2.24	0.200	"	2.00		112	30-120	5.01	30	
Benzo (k) fluoranthene	2.21	0.200	"	2.00		111	30-120	9.49	30	
Benzo (g,h,i) perylene	2.17	0.200	"	2.00		108	30-120	4.42	30	
Benzo (a) pyrene	2.18	0.200	"	2.00		109	30-120	1.34	30	
Chrysene	2.10	0.200	"	2.00		105	30-120	0.229	30	
Dibenz (a,h) anthracene	2.12	0.200	"	2.00		106	30-120	6.20	30	
Fluoranthene	2.25	2.00	"	2.00		112	30-120	3.13	30	
Fluorene	2.20	0.200	"	2.00		110	30-120	0.606	30	
Indeno (1,2,3-cd) pyrene	2.32	0.300	"	2.00		116	30-120	4.32	30	
Phenanthrene	2.35	0.500	"	2.00		117	30-120	6.15	30	
Pyrene	2.17	1.00	"	2.00		109	30-120	9.25	30	
1-Methylnaphthalene	2.02	0.500	"	2.00		101	30-120	12.7	30	
2-Methylnaphthalene	1.93	0.500	"	2.00		96.6	0-200	9.53	200	
Surrogate: 2-Methylnaphthalene-d10	2.08		"	2.00		104		40-150		
Surrogate: Fluoranthene-d10	2.35		"	2.00		117		40-150		

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson 28-10
Project Number: UWRWE-A2396-ABN
Project Manager: Jacob Whritenour

Reported:
06/26/23 10:55

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 BGF0742 - General Preparation

Blank (BGF0742-BLK1)

Prepared: 06/21/23 Analyzed: 06/22/23

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

LCS (BGF0742-BS1)

Prepared & Analyzed: 06/21/23

Chloride	3.24	0.0600	mg/L	3.00	108	90-110
Sulfate	15.9	0.300	"	15.0	106	90-110

Duplicate (BGF0742-DUP1)

Source: 2306386-01

Prepared & Analyzed: 06/21/23

Chloride	22.6	12.0	mg/L	21.4	5.45	20
Sulfate	148	60.0	"	171	14.7	20

Matrix Spike (BGF0742-MS1)

Source: 2306386-01

Prepared & Analyzed: 06/21/23

Chloride	697	12.0	mg/L	600	21.4	113	80-120
Sulfate	3390	60.0	"	3000	171	107	80-120

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.



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Notes and Definitions

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