

**SITE ASSESSMENT REPORT**  
**THOMPSON D20-31D TANK BATTERY**

ECMC SPILL TRACKING # 483919  
ECMC REMEDIATION # 26337

Prepared for:



2115 117th Avenue  
Greeley, CO 80631

Prepared by:



6855 W. 119<sup>th</sup> Ave  
Broomfield, CO 80020

November 2, 2023

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

**Re: Site Assessment Report**  
***Thompson D20-31D Tank Battery***  
Spill/Release Point ID: 483919  
Remediation #: 26337  
SWSW S17 T3N R64W  
Weld County, Colorado

Dear Mr. Peterson:

Below please find a copy of the above referenced Site Assessment Report (Report) for the Thompson D20-31D 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 14, 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 produced water vault (PBV) and separator during decommissioning activities conducted at the Site.

## Site Background

The Site is located approximately 11.6 miles south of Kersey in Weld County, Colorado. The Site legal description is the southwest quarter of the southwest quarter of Section 17, Township 3 North, Range 64 West, 6<sup>th</sup> Principal Meridian. The Site is on terrain that slopes gradually to the west at latitude 40.218429° and longitude -104.583963° [North American Datum of 1983(NAD83)] and is located approximately 186 feet northeast of the intersection of County Road 51 and County Road 32 (Figure 1).

Tasman was initially retained by Noble on February 14, 2023 to complete soil sampling and documentation during Site decommissioning and abandonment activities along the tank battery. As reported in the initial Form 19, historical impacts were confirmed beneath the PBV and separator on February 23, 2023. The Form 19 was submitted to the Energy and Carbon Management Commission (ECMC) on February 23, 2023. The ECMC subsequently issued Spill/Release Point ID Number 483919 for this event. The ECMC assigned Remediation Number 26337 for the project.

## Site Decommissioning Activities

On February 14, 2023, Tasman completed decommissioning soil sampling and documentation for the Thompson D20-31D 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@3' SEP01-FL@3'	One sample collected separator dumpline and flowline riser.
Crude Oil ASTs	AST01@0.5' AST02@0.5' AST03@0.5' AST04@0.5'	Four samples collected beneath the crude oil ASTs
Flare	Flare01@0.5' Flare02@0.5'	Two samples collected beneath the flares
Meter House	MH01@0.5'	One sample collected beneath the meter house
Produced Water Vault	SS01@2.5' through SS06@2.5', FS01@5.5', FS02@6'	Six excavation sidewall samples collected at the sidewall from the vault excavation and two base samples at the center of the excavation

Fourteen of the seventeen 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 FS02@6' 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 May 31, 2023, Tasman completed site assessment activities to delineate subsurface soil impacts identified during Site decommissioning. In the area of the PBVs, Tasman advanced eight borings to 15 feet below ground surface (ft bgs), using a combination of hand augers and a Geoprobe via direct push drilling techniques. In the area of the separator, Tasman advanced five borings to 15 feet below

ground surface (ft bgs), using a combination of hand augers and a Geoprobe via direct push drilling techniques. 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@6'	BH02@6'	BH03@6'	BH04@6'	BH05@6'
BH01@14-15'	BH02@14-15'	BH03@14-15'	BH04@14-15'	BH05@14-15'
BH06@6'	BH07@6'	BH08@6'	BH09@1-2'	BH10@4'
BH06@14-15'	BH07@14-15'	BH08@14-15'	BH09@6'	BH10@14-15'
			BH09@14-15'	
BH11@4'	BH12@4'	BH13@4'		
BH11@14-15'	BH12@14-15'	BH13@14-15'		

All 27 site assessment soil samples, shown above, 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. 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 7 ft bgs in the borings. Soil borings BH01 through BH13 were converted to temporary groundwater monitoring wells, and set to depths of 15 ft bgs with 10 ft of 0.010-inch slotted screen interval. Tasman returned to the Site on June 2, 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 13 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 1-methylnaphthalene (1-M) and 2-methylnaphthalene (2-M) 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 three of the 14 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, 1-M, and 2-M. One of the 27 soil samples collected during site assessment activities (BH05@6') exceed ECMC Table 915-1 GSSLs for 1,2,4-TMB, 1-M, and 2-M.

Laboratory analytical results indicate pH was above ECMC Table 915-1 Soil Suitability for Reclamation (SSR) standards in one decommissioning soil sample (FS02@6'). 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 22 of the 27 site assessment soil samples submitted for laboratory analysis.

Groundwater laboratory analytical results for temporary monitoring wells BH01 through BH13 indicate that all hydrocarbon compounds were below laboratory detection limits. Monitoring well BH03 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 BH03, groundwater samples collected from BH10 and BH13 are in exceedance of ECMC Table 915-1 Groundwater Inorganic Parameters (GIP) standards for sulfate ion. The site-specific background assessment is on-going for inorganic parameters.

## Conclusions

Soil hydrocarbon impacts observed during decommissioning in area of the PBVs and separator have been successfully delineated vertically and laterally by site assessment soil borings BH01 through BH13. Background soil samples will be collected to determine if metals and pH should be considered contaminants of concern at the site.

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 and the completion of background soil sampling to eliminate arsenic and pH as contaminants of concern, 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](mailto: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 (02/14/2023)

Figure 3 – Site Assessment Soil Analytical Results Map (05/31/2023)

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

Figure 5 – Site Assessment 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 D20-31D FACILITY**

Soil Sample ID	Date	<sup>1</sup> 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 <sup>2</sup>		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 <sup>2,3</sup>		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
SS01@2.5'	02/14/23	<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'	02/14/23	<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'	02/14/23	<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'	02/14/23	<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
SS05@2.5'	02/14/23	<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
SS06@2.5'	02/14/23	<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'	02/14/23	<0.0020	<0.0050	<0.0050	<0.010	0.010	0.034	<0.0038	1.6	92	<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
FS02@6'	02/14/23	<0.0020	<0.0050	<0.0050	0.029	0.014	0.077	<0.0038	1.2	290	62	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00526	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00931	0.0264
AST01@0.5'	02/14/23	<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
AST02@0.5'	02/14/23	<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
AST03@0.5'	02/14/23	<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
AST04@0.5'	02/14/23	<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-FL@4'	02/14/23	<0.0020	<0.0050	<0.0050	0.021	0.019	0.011	<0.0038	1.2	81	<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'	02/14/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	94	<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@6'	05/31/23	<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@14-15'	05/31/23	<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'	05/31/23	<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@14-15'	05/31/23	<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'	05/31/23	<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@14-15'	05/31/23	<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'	05/31/23	<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@14-15'	05/31/23	<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'	05/31/23	<0.0020	<0.0050	<0.0050	<0.010	0.023	<0.0050	<0.0038	<0.50	150	<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	0.0216	0.0262
BH05@14-15'	05/31/23	<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
BH06@6'	05/31/23	<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
BH06@14-15'	05/31/23	<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
BH07@6'	05/31/23	<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
BH07@14-15'	05/31/23	<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
BH08@6'	05/31/23	<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
BH08@14-15'	05/31/23	<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
BH09@1-2'	05/31/23	<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
BH09@4'	05/31/23	<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
BH09@14-15'	05/31/23	<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
BH10@4'	05/31/23	<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
BH10@14-15'																									



TABLE 1  
SOIL ANALYTICAL DATA  
NOBLE ENERGY, INC. - THOMPSON D20-31D FACILITY

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL <sup>2</sup>		6 - 8.3	<6	<4mmhos/cm	2
SS01@2.5'	02/14/23	7.63	0.0582	0.236	0.0704
SS02@2.5'	02/14/23	7.68	0.0934	0.184	0.0849
SS03@2.5'	02/14/23	7.68	0.116	0.266	0.119
SS04@2.5'	02/14/23	7.96	0.107	0.184	0.0661
SS05@2.5'	02/14/23	7.87	1.28	0.868	0.192
SS06@2.5'	02/14/23	8.18	0.830	0.358	0.199
FS01@5.5'	02/14/23	7.95	0.105	0.257	0.0908
FS02@6'	02/14/23	9.75	1.24	0.444	0.659
AST01@0.5'	02/14/23	8.08	0.210	0.331	0.343
AST02@0.5'	02/14/23	7.71	0.819	0.913	0.209
AST03@0.5'	02/14/23	7.96	0.437	0.407	0.214
AST04@0.5'	02/14/23	7.88	1.05	1.60	0.346
SEP01-FL@4'	02/14/23	8.01	0.243	0.256	0.126
SEP01-DL@4'	02/14/23	7.87	3.11	1.08	0.158
BH01@6'	05/31/23	7.92	2.40	1.31	0.238
BH01@14-15'	05/31/23	8.03	3.89	1.58	0.0889
BH02@6'	05/31/23	8.06	4.42	0.754	0.136
BH02@14-15'	05/31/23	7.96	3.68	1.61	0.0686
BH03@6'	05/31/23	7.72	0.550	0.528	0.165
BH03@14-15'	05/31/23	7.96	4.45	1.49	0.0936
BH04@6'	05/31/23	8.14	4.95	0.667	0.194
BH04@14-15'	05/31/23	8.11	3.90	1.71	0.0662
BH05@6'	05/31/23	8.05	0.613	0.533	0.115
BH05@14-15'	05/31/23	8.13	4.50	2.24	0.0945
BH06@6'	05/31/23	8.08	5.04	0.783	0.120
BH06@14-15'	05/31/23	8.14	3.88	1.68	0.0801
BH07@6'	05/31/23	7.77	0.635	0.434	0.166
BH07@14-15'	05/31/23	8.08	4.01	1.88	0.0775
BH08@6'	05/31/23	8.13	3.35	0.532	0.170
BH08@14-15'	05/31/23	8.12	4.43	2.22	0.0907
BH09@1-2'	05/31/23	7.84	0.655	0.417	0.101
BH09@4'	05/31/23	7.80	0.428	0.379	0.120
BH09@14-15'	05/31/23	8.00	3.85	1.69	0.210
BH10@4'	05/31/23	7.79	0.544	0.370	0.135
BH10@14-15'	05/31/23	7.96	4.15	1.83	0.0488
BH11@4'	05/31/23	7.84	0.257	0.335	0.236
BH11@14-15'	05/31/23	7.74	2.54	2.24	0.0739
BH12@4'	05/31/23	7.86	0.173	0.341	0.122
BH12@14-15'	05/31/23	7.99	4.47	1.66	0.0605
BH13@4'	05/31/23	7.28	0.392	0.471	0.132
BH13@14-15'	05/31/23	8.03	4.66	2.09	0.0543

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 <sup>2</sup>		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL <sup>2,3</sup>		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FS02@6'	02/14/23	2.41	77.2	0.156	<0.30	5.65	6.53	5.23	<0.260	0.0189	19.2
BH01@6'	05/31/23	0.604	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH01@14-15'	05/31/23	0.202	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH02@6'	05/31/23	0.556	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH02@14-15'	05/31/23	0.329	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH03@6'	05/31/23	0.571	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH03@14-15'	05/31/23	0.307	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH04@6'	05/31/23	0.551	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH04@14-15'	05/31/23	0.273	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH05@6'	05/31/23	0.596	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH05@14-15'	05/31/23	0.252	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH06@6'	05/31/23	0.750	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH06@14-15'	05/31/23	0.308	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH07@6'	05/31/23	0.719	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH07@14-15'	05/31/23	0.230	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH08@6'	05/31/23	0.607	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH08@14-15'	05/31/23	0.258	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH09@1-2'	05/31/23	0.567	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH09@4'	05/31/23	1.94	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH09@14-15'	05/31/23	0.799	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH10@4'	05/31/23	1.89	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH10@14-15'	05/31/23	0.915	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH11@4'	05/31/23	2.33	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH11@14-15'	05/31/23	0.639	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH12@4'	05/31/23	1.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH12@14-15'	05/31/23	0.336	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH13@4'	05/31/23	1.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH13@14-15'	05/31/23	0.357	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 petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

mmhos/cm = Millimhos per centimeter

mg/L = Milligrams per liter

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

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

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

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

Benz(a) = Benzanthracene

Benzo(b) = Benzofluoranthene

Benzo(k) = Benzofluoranthene

Benzo(a) = Benzopyrene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene

NA = Not analyzed

**TABLE 2**  
**GROUNDWATER ELEVATION DATA**  
**NOBLE ENERGY, INC. - THOMPSON D20-31D FACILITY**

Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.) <sup>(1)</sup>	Depth to LNAPL (ft.) <sup>(1)</sup>	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	06/19/23	4737.51	14.40	4.92	ND	ND	4733.01
BH02	06/19/23	4738.31	14.57	5.62	ND	ND	4732.98
BH03	06/19/23	4737.75	14.88	5.01	ND	ND	4733.07
BH04	06/19/23	4738.35	14.77	5.74	ND	ND	4733.00
BH05	06/19/23	4737.21	14.85	5.89	ND	ND	4732.76
BH06	06/19/23	4737.67	14.73	5.30	ND	ND	4732.83
BH07	06/19/23	4737.73	14.74	5.40	ND	ND	4732.70
BH08	06/19/23	4738.15	14.41	5.63	ND	ND	4732.77
BH09	06/19/23	4738.15	15.02	5.66	ND	ND	4732.88
BH10	06/19/23	4742.54	18.61	5.66	ND	ND	4732.76
BH11	06/19/23	4738.51	15.01	5.87	ND	ND	4732.81
BH12	06/19/23	4737.90	14.97	5.30	ND	ND	4732.89
BH13	06/19/23	4742.50	18.56	5.82	ND	ND	4732.95

**Notes:**

<sup>(1)</sup> 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 D20-31D 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 <sup>(2)</sup>	3.6 <sup>(2)</sup>	<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	<0.500	<0.500	683	21.4	171
BH02	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	2,530	333	1,420
<sup>(3)</sup> BH03	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	2,280	326	1,220
BH04	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	2,350	295	1,270
BH05	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	1,110	89.0	377
BH06	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	2,400	319	1,400
BH07	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	1,080	53.2	239
BH08	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	2,430	330	1,300
BH09	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	2,340	314	1,500
BH10	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	2,750	388	<b>1,610</b>
BH11	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	2,270	347	1,290
BH12	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	2,260	297	1,220
BH13	06/19/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	2,710	382	<b>1,560</b>

**Notes:**

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

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

<sup>(3)</sup> 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

NS = No standard

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

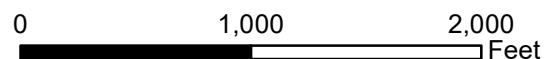
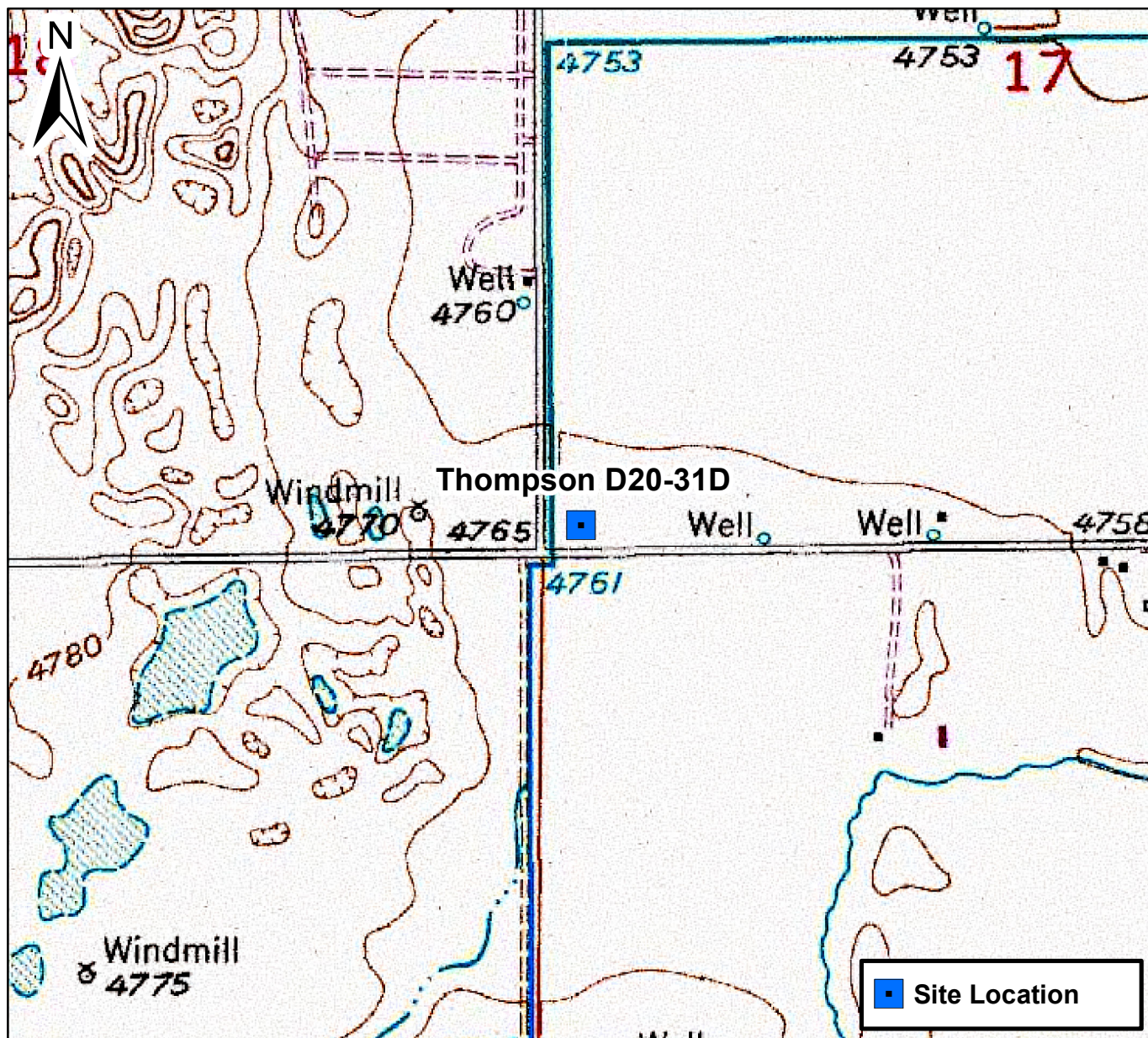
2-M = 2-Methylnaphthalene

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**

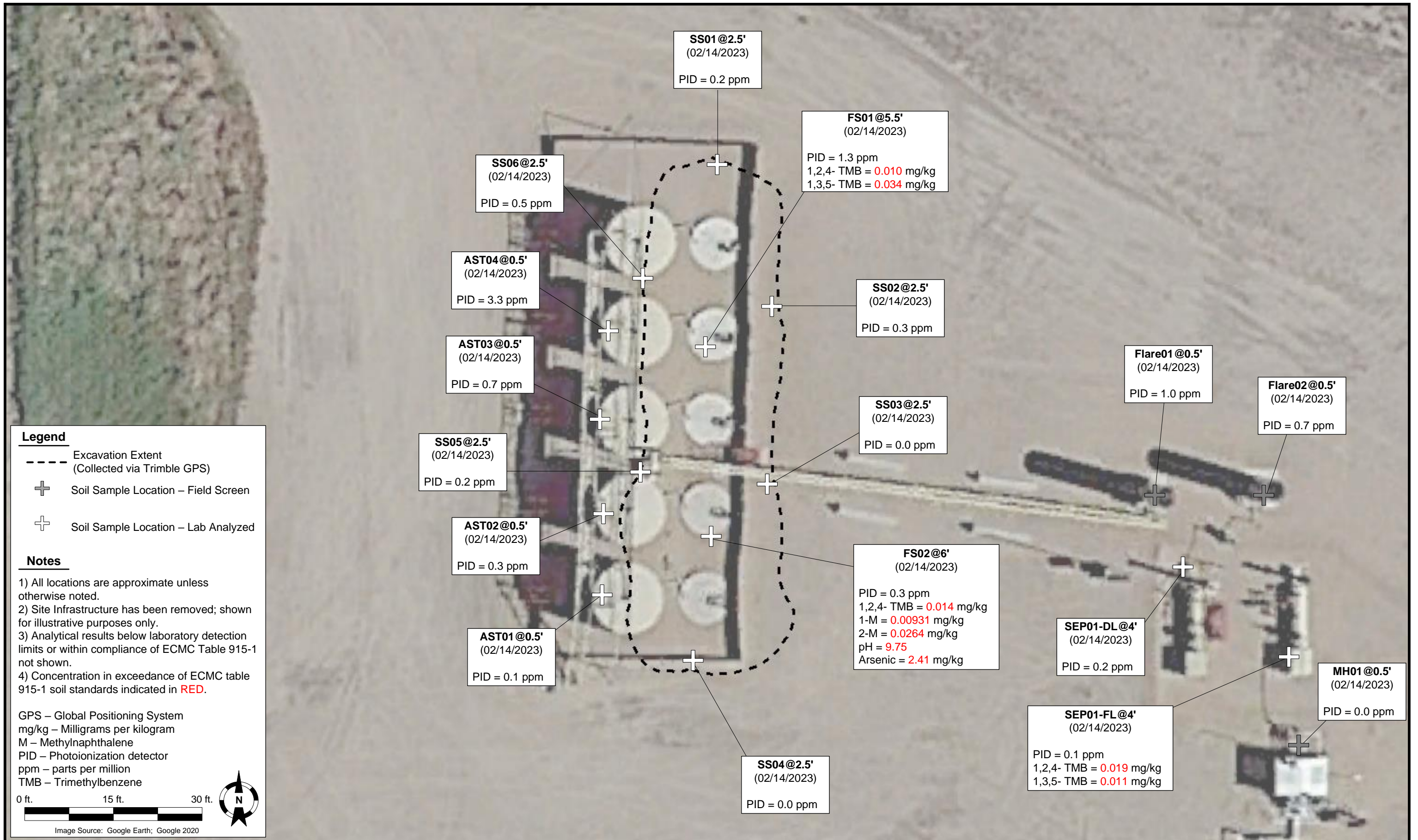


**Figure 1**

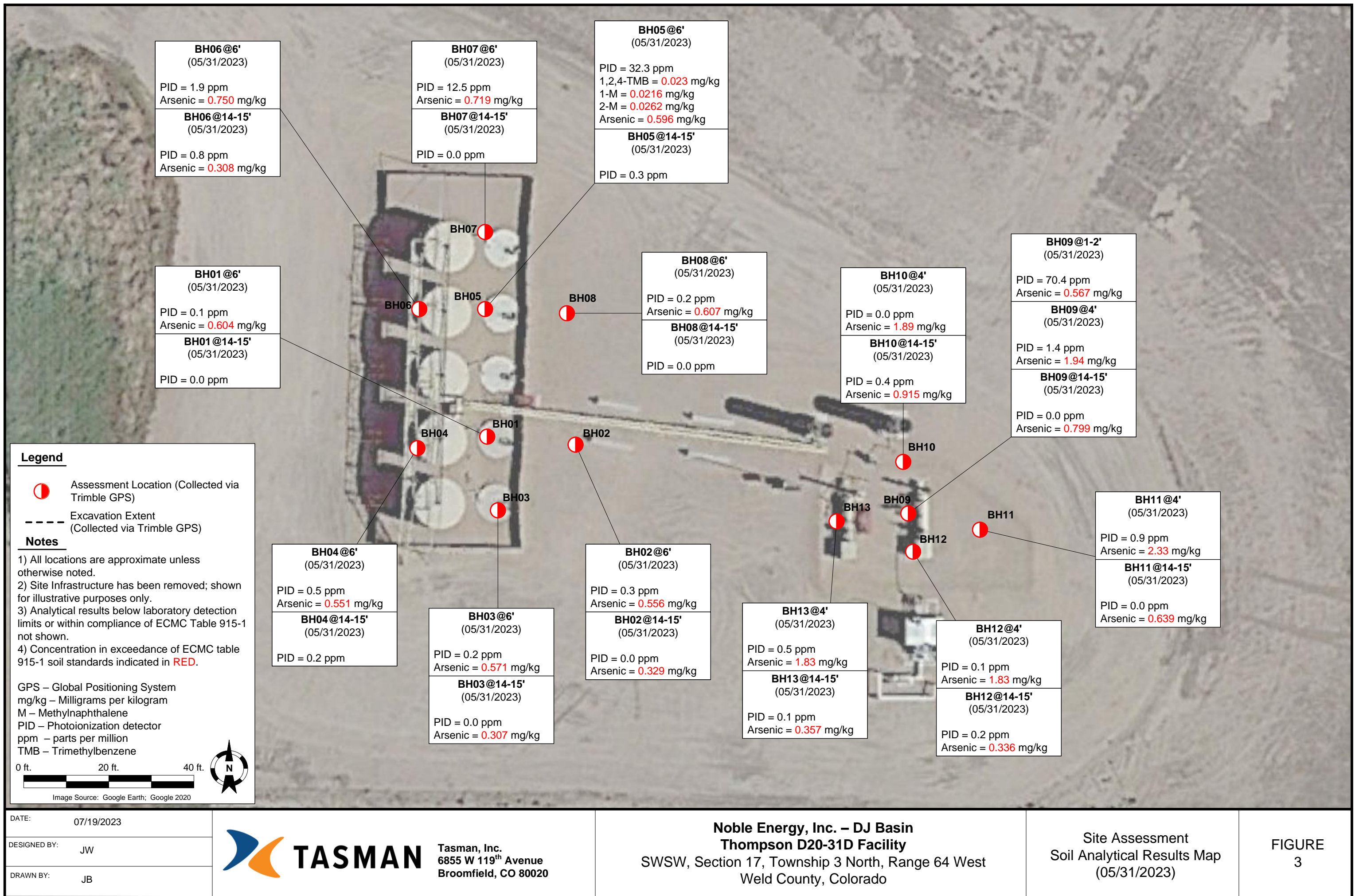
Site Location Map  
Thompson D20-31D Facility  
SWSW S17 T3N R64W Weld  
County, Colorado



















**ATTACHMENT A**  
**LABORATORY SOIL ANALYTICAL DATA REPORTS**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 19, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Thompson D20-31D FAC

Work Order #2305702

Enclosed are the results of analyses for samples received by Summit Scientific on 05/31/23 18:11. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely". The signature is fluid and cursive, with the first name "Scott" and last name "Sheely" clearly distinguishable.

Scott Sheely For Paul Shrewsbury  
President



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

Project: Noble - Thompson D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@6'	2305702-01	Soil	05/31/23 11:30	05/31/23 18:11
BH01@14-15'	2305702-02	Soil	05/31/23 11:40	05/31/23 18:11
BH02@6'	2305702-03	Soil	05/31/23 11:50	05/31/23 18:11
BH02@14-15'	2305702-04	Soil	05/31/23 12:00	05/31/23 18:11
BH03@6'	2305702-05	Soil	05/31/23 12:15	05/31/23 18:11
BH03@14-15'	2305702-06	Soil	05/31/23 12:20	05/31/23 18:11
BH04@6'	2305702-07	Soil	05/31/23 09:40	05/31/23 18:11
BH04@14-15'	2305702-08	Soil	05/31/23 09:50	05/31/23 18:11
BH05@6'	2305702-09	Soil	05/31/23 10:50	05/31/23 18:11
BH05@14-15'	2305702-10	Soil	05/31/23 11:00	05/31/23 18:11
BH06@6'	2305702-11	Soil	05/31/23 09:15	05/31/23 18:11
BH06@14-15'	2305702-12	Soil	05/31/23 09:25	05/31/23 18:11
BH07@6'	2305702-13	Soil	05/31/23 10:00	05/31/23 18:11
BH07@14-15'	2305702-14	Soil	05/31/23 10:30	05/31/23 18:11
BH08@6'	2305702-15	Soil	05/31/23 11:10	05/31/23 18:11
BH08@14-15'	2305702-16	Soil	05/31/23 11:20	05/31/23 18:11
BH09@1-2'	2305702-17	Soil	05/31/23 13:50	05/31/23 18:11
BH09@4'	2305702-18	Soil	05/31/23 13:55	05/31/23 18:11
BH09@14-15'	2305702-19	Soil	05/31/23 14:00	05/31/23 18:11
BH10@4'	2305702-20	Soil	05/31/23 15:00	05/31/23 18:11
BH10@14-15'	2305702-21	Soil	05/31/23 15:20	05/31/23 18:11
BH11@4'	2305702-22	Soil	05/31/23 14:35	05/31/23 18:11
BH11@14-15'	2305702-23	Soil	05/31/23 14:45	05/31/23 18:11
BH12@4'	2305702-24	Soil	05/31/23 13:20	05/31/23 18:11
BH12@14-15'	2305702-25	Soil	05/31/23 13:30	05/31/23 18:11
BH13@4'	2305702-26	Soil	05/31/23 15:30	05/31/23 18:11
BH13@14-15'	2305702-27	Soil	05/31/23 15:45	05/31/23 18:11

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

---

Summit Scientific

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

A handwritten signature in black ink, appearing to read 'Scott Shuck'.

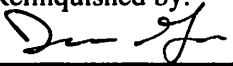


Client: Noble/Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W. 119th Ave.		Project Manager: Jake Whritenour		Company: <u>Chevron</u>	
City/State/Zip: Broomfield/CO/ 80020		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: <u>Thompson D20 -310 Fal</u>	
Phone: 602-881-5716		Project Name: <u>Thompson D20 -310 Fal</u>		AFE#:	
Sampler Name: Dennis Gray		Project Number:		PO/Billing Codes:	
				Contact: <u>Dan Peterson</u>	

					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		
1	BH01@6'	5-31-23	1130	2			X			X				X	X	X	X	X			X	SAR, EC, pH by saturated paste
2	BH01@14-15'		1140																			
3	BH02@6'		1150																			
4	BH02@14-15'		1200																			
5	BH03@6'		1215																			
6	BH03@14-15'		1220																			
7	BH04@6'		940																			
8	BH04@14-15'		950																			
9	BH05@6'		1050																			
10	BH05@14-15'		1100																			
11	BH06@6'		915																			
12	BH06@14-15'		925																			
13	BH07@6'		1000																			
14	BH07@14-15'		1030																			
15	BH08@6'		1110																			

Relinquished by: <u>D. J. [Signature]</u>	Date/Time: <u>5-31-23</u> <u>1720</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>5-31-23</u> <u>1720</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>5/31/23</u> <u>1811</u>	Received by: <u>[Signature]</u>	Date/Time: <u>5/31/23</u> <u>1811</u>	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: <u>10.7</u>		Corrected Temperature <u>0</u>		IR gun #: <u>1</u>	HNO3 lot #: _____	

Send Data To:		Send Invoice To:	
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: Chevron	
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: Thompson D20-310 FAc	
City/State/Zip: Broomfield/CO/ 80020		AFE#:	
Phone: 602-881-5716	Project Name: Thompson D20-310 FAc	PO/Billing Codes:	
Sampler Name: Dennis Gray	Project Number:	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	
1	BH08 @ 14-15'	5-31-23	1120	2			X			X				X	X	X	X	X		X	SAR, EC, pH by saturated paste
2	BH09 @ 1-2'		1350																		
3	BH09 @ 4'		1355																		
4	BH09 @ 14-15'		1400																		
5	BH10 @ 4'		1500																		
6	BH10 @ 14-15'		1520																		
7	BH11 @ 4'		1435																		
8	BH11 @ 14-15'		1445																		
9	BH12 @ 4'		1320																		
10	BH12 @ 14-15'		1330																		
11	BH13 @ 4'		1530																		
12	BH13 @ 14-15'		1545																		
13																					
14																					
15																					

Relinquished by: 	Date/Time: 5-31-23 1720	Received by: Tasman Lock Box	Date/Time: 5-31-23 1720	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 5/31/23 1811	Received by: 	Date/Time: 5/31/23 1811	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: 10.7	Corrected Temperature: 	IR gun #: 1	HNO3 lot #:			



S<sub>2</sub>

2/2  
Sample Receipt Checklist

S2 Work Order# 2305702

Client: Noble/TasmanClient Project ID: Thompson D20-310 FACShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐

Airbill #: \_\_\_\_\_

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

Matrix (Check all that apply)

Air ☐Solid ☒Water ☐Other ☐

Temp (°C)

10.7

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> 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"/>	
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on JUC
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 <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<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)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):				

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

AS  
Custodian Printed Name

5/31/23  
Date/Time

9.25





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

Project: Noble - Thompson D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH01@6'**  
**2305702-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BGF0106	06/02/23	06/03/23	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: **05/31/23 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0437	109 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0409	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0503	126 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0107	06/02/23	06/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	13.5	108 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH01@6'**  
**2305702-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0094	06/02/23	06/03/23	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: **05/31/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0227	68.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0291	87.2 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.238</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 11:30**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH01@6'**  
**2305702-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.604	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	109	0.0587	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	21.7	0.0587	"	"	"	"	"	"	
Sodium	105	0.0587	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.40	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.2		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.31	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 11:30**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH01@6'**  
**2305702-01 (Soil)**

**Summit Scientific**

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

pH	7.92	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH01@14-15'**  
**2305702-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0106	06/02/23	06/03/23	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: **05/31/23 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0413	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0456	114 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0507	127 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0107	06/02/23	06/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.8	118 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH01@14-15'**  
**2305702-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0094	06/02/23	06/03/23	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: **05/31/23 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0244	73.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0294	88.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0889</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 11:40**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH01@14-15'**  
**2305702-02 (Soil)**

### Summit Scientific

#### Total Metals by EPA 6020B

Arsenic	0.202	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	121	0.0581	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	30.6	0.0581	"	"	"	"	"	"	
Sodium	185	0.0581	"	"	"	"	"	"	

#### Calculated Analysis

Date Sampled: **05/31/23 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.89	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

#### Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/31/23 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.1		%	1	BGF0170	06/06/23	06/06/23	Calculation	

#### Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/31/23 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.58	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 11:40**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH01@14-15'**  
**2305702-02 (Soil)**

**Summit Scientific**

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

pH	8.03	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH02@6'**  
**2305702-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0106	06/02/23	06/03/23	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: **05/31/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0410	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0310	77.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0489	122 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0107	06/02/23	06/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.9	120 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH02@6'**  
**2305702-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0094	06/02/23	06/03/23	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: **05/31/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0249	74.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0286	85.7 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.136</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 11:50**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH02@6'**  
**2305702-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.556	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	34.7	0.0581	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	5.90	0.0581	"	"	"	"	"	"	
Sodium	107	0.0581	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.42	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.1		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.754	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 11:50**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH02@6'**  
**2305702-03 (Soil)**

**Summit Scientific**

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

pH	8.06	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH02@14-15'**  
**2305702-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0106	06/02/23	06/03/23	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: **05/31/23 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0432	108 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0560	140 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0494	123 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0107	06/02/23	06/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.3	114 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH02@14-15'**  
**2305702-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0094	06/02/23	06/03/23	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: **05/31/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0221	66.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0322	96.7 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0686</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 12:00**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH02@14-15'**  
**2305702-04 (Soil)**

### Summit Scientific

#### Total Metals by EPA 6020B

Arsenic	0.329	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	118	0.0556	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	31.2	0.0556	"	"	"	"	"	"	
Sodium	174	0.0556	"	"	"	"	"	"	

#### Calculated Analysis

Date Sampled: **05/31/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.68	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

#### Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/31/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.9		%	1	BGF0170	06/06/23	06/06/23	Calculation	

#### Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/31/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.61	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 12:00**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31


**BH02@14-15'**  
**2305702-04 (Soil)**

**Summit Scientific**

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

pH	7.96	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH03@6'**  
**2305702-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0106	06/02/23	06/03/23	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: **05/31/23 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0496	124 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0500	125 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0494	123 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0107	06/02/23	06/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.7	117 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH03@6'**  
**2305702-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0094	06/02/23	06/03/23	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: **05/31/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0212	63.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0258	77.4 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.165</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 12:15**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH03@6'**  
**2305702-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.571	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	55.0	0.0584	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	9.09	0.0584	"	"	"	"	"	"	
Sodium	16.7	0.0584	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.550	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.7		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.528	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 12:15**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH03@6'**  
**2305702-05 (Soil)**

**Summit Scientific**

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

pH	7.72	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH03@14-15'**  
**2305702-06 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0106	06/02/23	06/03/23	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: **05/31/23 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0353	88.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0468	117 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0482	121 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0107	06/02/23	06/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.3	115 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH03@14-15'**  
**2305702-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0094	06/02/23	06/03/23	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: **05/31/23 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0238	71.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0330	98.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0936</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 12:20**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH03@14-15'**  
**2305702-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.307	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	99.0	0.0574	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	21.9	0.0574	"	"	"	"	"	"	
Sodium	188	0.0574	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.45	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.1		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.49	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 12:20**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH03@14-15'**  
**2305702-06 (Soil)**

**Summit Scientific**

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

pH	7.96	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH04@6'**  
**2305702-07 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0106	06/02/23	06/03/23	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: **05/31/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0431	108 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0512	128 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0489	122 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0107	06/02/23	06/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.6	125 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH04@6'**  
**2305702-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGF0094	06/02/23	06/03/23	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: **05/31/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0236	70.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0292	87.6 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>Boron</b>	<b>0.194</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH04@6'**  
**2305702-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.551	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.7	0.0575	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	4.29	0.0575	"	"	"	"	"	"	
Sodium	103	0.0575	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.95	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.9		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.667	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 09:40**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH04@6'**  
**2305702-07 (Soil)**

**Summit Scientific**

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

pH	8.14	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH04@14-15'**  
**2305702-08 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0106	06/02/23	06/03/23	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: **05/31/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0453	113 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0512	128 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0484	121 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0107	06/02/23	06/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.0	120 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH04@14-15'**  
**2305702-08 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGF0094	06/02/23	06/03/23	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: **05/31/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0212	63.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0302	90.7 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>Boron</b>	<b>0.0662</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH04@14-15'**  
**2305702-08 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.273	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	124	0.0581	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	36.5	0.0581	"	"	"	"	"	"	
Sodium	192	0.0581	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.90	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.1		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.71	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 09:50**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31


**BH04@14-15'**  
**2305702-08 (Soil)**

**Summit Scientific**

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

pH	8.11	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH05@6'**  
**2305702-09 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0106	06/02/23	06/03/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.023</b>	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/31/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0474	118 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0545	136 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0646	162 %	50-150		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>C10-C28 (DRO)</b>	<b>150</b>	50	mg/kg	1	BGF0107	06/02/23	06/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.8	126 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH05@6'**  
**2305702-09 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0094	06/02/23	06/03/23	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	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0216</b>	0.00500	"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0262</b>	0.00500	"	"	"	"	"	"	

Date Sampled: **05/31/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0324	97.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0270	81.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.115</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/15/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 10:50**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH05@6'**  
**2305702-09 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.596	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	66.6	0.0586	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	8.11	0.0586	"	"	"	"	"	"	
Sodium	19.9	0.0586	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.613	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.4		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.533	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 10:50**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH05@6'**  
**2305702-09 (Soil)**

**Summit Scientific**

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

pH	8.05	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH05@14-15'**  
**2305702-10 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0106	06/02/23	06/03/23	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: **05/31/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0376	94.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0497	124 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0504	126 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0107	06/02/23	06/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.0	120 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH05@14-15'**  
**2305702-10 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGF0094	06/02/23	06/03/23	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: **05/31/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0226	67.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0253	76.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>Boron</b>	<b>0.0945</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/15/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH05@14-15'**  
**2305702-10 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.252	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	170	0.0603	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	44.6	0.0603	"	"	"	"	"	"	
Sodium	255	0.0603	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.50	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.0		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.24	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 11:00**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH05@14-15'**  
**2305702-10 (Soil)**

**Summit Scientific**

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

pH	8.13	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH06@6'**  
**2305702-11 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0106	06/02/23	06/03/23	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: **05/31/23 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0506	126 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0340	85.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0510	128 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0107	06/02/23	06/03/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.6	125 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH06@6'**  
**2305702-11 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/05/23	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: **05/31/23 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0135	40.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0140	42.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>Boron</b>	<b>0.120</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/15/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH06@6'**  
**2305702-11 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.750	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	33.3	0.0636	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	6.31	0.0636	"	"	"	"	"	"	
Sodium	121	0.0636	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.04	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	78.6		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.783	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 09:15**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31


**BH06@6'**  
**2305702-11 (Soil)**

**Summit Scientific**

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

pH	8.08	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH06@14-15'**  
**2305702-12 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 09:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/05/23	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: **05/31/23 09:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0384	96.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0438	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	96.9 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 09:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 09:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.4	91.0 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH06@14-15'**  
**2305702-12 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 09:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/05/23	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: **05/31/23 09:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0176	52.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0258	77.4 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 09:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>Boron</b>	<b>0.0801</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/15/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 09:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH06@14-15'**  
**2305702-12 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.308	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	117	0.0590	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	40.2	0.0590	"	"	"	"	"	"	
Sodium	191	0.0590	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.88	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.8		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.68	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 09:25**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31


**BH06@14-15'**  
**2305702-12 (Soil)**

**Summit Scientific**

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

pH	8.14	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH07@6'**  
**2305702-13 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/05/23	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: **05/31/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0465	116 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0463	116 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0389	97.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.8	94.1 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH07@6'**  
**2305702-13 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/05/23	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: **05/31/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0187	56.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0180	54.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.166</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/15/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 10:00**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH07@6'**  
**2305702-13 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.719	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	55.8	0.0620	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	9.11	0.0620	"	"	"	"	"	"	
Sodium	19.4	0.0620	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.635	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.7		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.434	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 10:00**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH07@6'**  
**2305702-13 (Soil)**

**Summit Scientific**

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

pH	7.77	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH07@14-15'**  
**2305702-14 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/05/23	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: **05/31/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0412	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0460	115 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.0 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.8	94.5 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH07@14-15'**  
**2305702-14 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/05/23	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: **05/31/23 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0217	65.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0283	85.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>Boron</b>	<b>0.0775</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/15/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH07@14-15'**  
**2305702-14 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.230	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	133	0.0584	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	41.7	0.0584	"	"	"	"	"	"	
Sodium	207	0.0584	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.01	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.6		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.88	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 10:30**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31


**BH07@14-15'**  
**2305702-14 (Soil)**

**Summit Scientific**

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

pH	8.08	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH08@6'**  
**2305702-15 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/05/23	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: **05/31/23 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0390	97.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0445	111 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0387	96.8 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.6	93.1 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH08@6'**  
**2305702-15 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/05/23	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: **05/31/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0167	50.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0236	70.7 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.170</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/15/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 11:10**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH08@6'**  
**2305702-15 (Soil)**

### Summit Scientific

#### Total Metals by EPA 6020B

Arsenic	0.607	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.7	0.0575	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	6.67	0.0575	"	"	"	"	"	"	
Sodium	75.7	0.0575	"	"	"	"	"	"	

#### Calculated Analysis

Date Sampled: **05/31/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.35	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

#### Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/31/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	BGF0170	06/06/23	06/06/23	Calculation	

#### Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/31/23 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.532	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 11:10**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH08@6'**  
**2305702-15 (Soil)**

**Summit Scientific**

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

pH	8.13	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH08@14-15'**  
**2305702-16 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/05/23	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: **05/31/23 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0417	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0458	114 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0375	93.8 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.6	93.2 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH08@14-15'**  
**2305702-16 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/05/23	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: **05/31/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0201	60.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0274	82.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0907</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/15/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 11:20**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH08@14-15'**  
**2305702-16 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.258	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B	
---------	-------	-------	-----------	---	---------	----------	----------	-----------	--

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

Date Sampled: **05/31/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	168	0.0597	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	38.5	0.0597	"	"	"	"	"	"	
Sodium	245	0.0597	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.43	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.7		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.22	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 11:20**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH08@14-15'**  
**2305702-16 (Soil)**

**Summit Scientific**

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

pH	8.12	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH09@1-2'**  
**2305702-17 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/05/23	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: **05/31/23 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0398	99.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0446	111 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0374	93.6 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.4	99.6 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH09@1-2'**  
**2305702-17 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/05/23	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: **05/31/23 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0152	45.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0166	49.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>Boron</b>	<b>0.101</b>	0.0100	mg/L	1	BGF0173	06/06/23	06/15/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH09@1-2'**  
**2305702-17 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.567	0.200	mg/kg dry	1	BGF0164	06/06/23	06/09/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	46.5	0.0581	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	8.43	0.0581	"	"	"	"	"	"	
Sodium	18.5	0.0581	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.655	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.1		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.417	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 13:50**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31


**BH09@1-2'**  
**2305702-17 (Soil)**

**Summit Scientific**

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

pH	7.84	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH09@4'**  
**2305702-18 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/06/23	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: **05/31/23 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0428	107 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0441	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0373	93.2 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.8	94.3 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH09@4'**  
**2305702-18 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/05/23	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: **05/31/23 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0149	44.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0180	53.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.120</b>	0.0100	mg/L	1	BGF0174	06/06/23	06/09/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 13:55**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH09@4'**  
**2305702-18 (Soil)**

### Summit Scientific

#### Total Metals by EPA 6020B

Arsenic	1.94	0.200	mg/kg dry	1	BGF0154	06/06/23	06/08/23	EPA 6020B
---------	------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	39.4	0.0561	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	7.01	0.0561	"	"	"	"	"	"	
Sodium	11.1	0.0561	"	"	"	"	"	"	

#### Calculated Analysis

Date Sampled: **05/31/23 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.428	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

#### Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/31/23 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.1		%	1	BGF0170	06/06/23	06/06/23	Calculation	

#### Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/31/23 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.379	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 13:55**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31


**BH09@4'**  
**2305702-18 (Soil)**

**Summit Scientific**

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

pH	7.80	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH09@14-15'**  
**2305702-19 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/06/23	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: **05/31/23 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0391	97.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0442	111 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0376	94.0 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.3	98.7 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH09@14-15'**  
**2305702-19 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/05/23	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: **05/31/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0182	54.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0234	70.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.210</b>	0.0100	mg/L	1	BGF0174	06/06/23	06/09/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 14:00**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH09@14-15'**  
**2305702-19 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.799	0.200	mg/kg dry	1	BGF0154	06/06/23	06/08/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	114	0.0566	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	39.1	0.0566	"	"	"	"	"	"	
Sodium	187	0.0566	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.85	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.3		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.69	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 14:00**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH09@14-15'**  
**2305702-19 (Soil)**

**Summit Scientific**

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

pH	8.00	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH10@4'**  
**2305702-20 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/06/23	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: **05/31/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0413	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0457	114 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.0 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 15:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.4	99.1 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH10@4'**  
**2305702-20 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/05/23	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: **05/31/23 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0146	43.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0200	60.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.135</b>	0.0100	mg/L	1	BGF0174	06/06/23	06/09/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 15:00**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH10@4'**  
**2305702-20 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.89	0.200	mg/kg dry	1	BGF0154	06/06/23	06/08/23	EPA 6020B
---------	------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	35.0	0.0573	mg/L dry	1	BGF0232	06/07/23	06/16/23	EPA 6020B	
Magnesium	6.66	0.0573	"	"	"	"	"	"	
Sodium	13.4	0.0573	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.544	0.00100	units	1	BGF0626	06/17/23	06/17/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.3		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.370	0.0100	mmhos/cm	1	BGF0317	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 15:00**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH10@4'**  
**2305702-20 (Soil)**

**Summit Scientific**

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

pH	7.79	pH Units	1	BGF0316	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH10@14-15'**  
**2305702-21 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 15:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/06/23	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: **05/31/23 15:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0413	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0443	111 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0384	96.0 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 15:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 15:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.2	97.9 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH10@14-15'**  
**2305702-21 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/05/23	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: **05/31/23 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0170	51.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0257	77.2 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0488</b>	0.0100	mg/L	1	BGF0174	06/06/23	06/09/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 15:20**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH10@14-15'**  
**2305702-21 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.915	0.200	mg/kg dry	1	BGF0154	06/06/23	06/08/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	95.9	0.0586	mg/L dry	1	BGF0233	06/07/23	06/10/23	EPA 6020B	
Magnesium	50.9	0.0586	"	"	"	"	"	"	
Sodium	202	0.0586	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.15	0.00100	units	1	BGF0432	06/12/23	06/12/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.4		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.83	0.0100	mmhos/cm	1	BGF0289	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 15:20**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH10@14-15'**  
**2305702-21 (Soil)**

**Summit Scientific**

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

pH	7.96	pH Units	1	BGF0290	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH11@4'**  
**2305702-22 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/06/23	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: **05/31/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0435	109 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0440	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0395	98.8 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.8	94.6 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH11@4'**  
**2305702-22 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/06/23	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: **05/31/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0160	47.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0217	65.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.236</b>	0.0100	mg/L	1	BGF0174	06/06/23	06/09/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 14:35**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH11@4'**  
**2305702-22 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.33	0.200	mg/kg dry	1	BGF0154	06/06/23	06/08/23	EPA 6020B
---------	------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	933	0.0594	mg/L dry	1	BGF0233	06/07/23	06/10/23	EPA 6020B	
Magnesium	225	0.0594	"	"	"	"	"	"	
Sodium	33.7	0.0594	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.257	0.00100	units	1	BGF0432	06/12/23	06/12/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.2		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.335	0.0100	mmhos/cm	1	BGF0289	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 14:35**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH11@4'**  
**2305702-22 (Soil)**

**Summit Scientific**

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

pH	7.84	pH Units	1	BGF0290	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH11@14-15'**  
**2305702-23 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 14:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/06/23	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: **05/31/23 14:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0378	94.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0440	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0386	96.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 14:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 14:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.5	92.3 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH11@14-15'**  
**2305702-23 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/06/23	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: **05/31/23 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0192	57.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0236	70.8 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0739</b>	0.0100	mg/L	1	BGF0174	06/06/23	06/09/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 14:45**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH11@14-15'**  
**2305702-23 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.639	0.200	mg/kg dry	1	BGF0154	06/06/23	06/08/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	428	0.0586	mg/L dry	1	BGF0233	06/07/23	06/10/23	EPA 6020B	
Magnesium	232	0.0586	"	"	"	"	"	"	
Sodium	263	0.0586	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.54	0.00100	units	1	BGF0432	06/12/23	06/12/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.3		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.24	0.0100	mmhos/cm	1	BGF0289	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 14:45**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH11@14-15'**  
**2305702-23 (Soil)**

**Summit Scientific**

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

pH	7.74	pH Units	1	BGF0290	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH12@4'**  
**2305702-24 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/06/23	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: **05/31/23 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0381	95.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0448	112 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0368	91.9 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.4	99.3 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH12@4'**  
**2305702-24 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/06/23	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: **05/31/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0166	49.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0220	65.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.122</b>	0.0100	mg/L	1	BGF0174	06/06/23	06/09/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 13:20**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH12@4'**  
**2305702-24 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.83	0.200	mg/kg dry	1	BGF0154	06/06/23	06/08/23	EPA 6020B
---------	------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	867	0.0592	mg/L dry	1	BGF0233	06/07/23	06/10/23	EPA 6020B	
Magnesium	146	0.0592	"	"	"	"	"	"	
Sodium	20.9	0.0592	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.173	0.00100	units	1	BGF0432	06/12/23	06/12/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.5		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.341	0.0100	mmhos/cm	1	BGF0289	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 13:20**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH12@4'**  
**2305702-24 (Soil)**

**Summit Scientific**

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

pH	7.86	pH Units	1	BGF0290	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH12@14-15'**  
**2305702-25 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/06/23	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: **05/31/23 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0375	93.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0435	109 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0380	95.0 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/06/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.0	95.9 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH12@14-15'**  
**2305702-25 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/06/23	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: **05/31/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0185	55.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0245	73.6 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0605</b>	0.0100	mg/L	1	BGF0174	06/06/23	06/09/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 13:30**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH12@14-15'**  
**2305702-25 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.336	0.200	mg/kg dry	1	BGF0154	06/06/23	06/08/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	77.2	0.0585	mg/L dry	1	BGF0233	06/07/23	06/10/23	EPA 6020B	
Magnesium	39.9	0.0585	"	"	"	"	"	"	
Sodium	194	0.0585	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.47	0.00100	units	1	BGF0432	06/12/23	06/12/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.5		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.66	0.0100	mmhos/cm	1	BGF0289	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 13:30**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH12@14-15'**  
**2305702-25 (Soil)**

**Summit Scientific**

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

pH	7.99	pH Units	1	BGF0290	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH13@4'**  
**2305702-26 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 15:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/06/23	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: **05/31/23 15:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0384	96.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0439	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0383	95.7 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 15:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/06/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 15:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.1	96.8 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH13@4'**  
**2305702-26 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/06/23	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: **05/31/23 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0183	54.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0240	71.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.132</b>	0.0100	mg/L	1	BGF0174	06/06/23	06/09/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 15:30**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH13@4'**  
**2305702-26 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.83	0.200	mg/kg dry	1	BGF0154	06/06/23	06/08/23	EPA 6020B
---------	------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	752	0.0583	mg/L dry	1	BGF0233	06/07/23	06/10/23	EPA 6020B	
Magnesium	192	0.0583	"	"	"	"	"	"	
Sodium	46.5	0.0583	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.392	0.00100	units	1	BGF0432	06/12/23	06/12/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.8		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.471	0.0100	mmhos/cm	1	BGF0289	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 15:30**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH13@4'**  
**2305702-26 (Soil)**

**Summit Scientific**

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

pH	7.28	pH Units	1	BGF0290	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH13@14-15'**  
**2305702-27 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/31/23 15:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGF0140	06/05/23	06/06/23	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: **05/31/23 15:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0379	94.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0444	111 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0363	90.8 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/31/23 15:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0142	06/05/23	06/06/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/31/23 15:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.6	101 %	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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH13@14-15'**  
**2305702-27 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/31/23 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0125	06/05/23	06/06/23	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: **05/31/23 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0210	63.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0257	77.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/31/23 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0543</b>	0.0100	mg/L	1	BGF0174	06/06/23	06/09/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/31/23 15:45**

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

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH13@14-15'**  
**2305702-27 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.357	0.200	mg/kg dry	1	BGF0154	06/06/23	06/08/23	EPA 6020B
---------	-------	-------	-----------	---	---------	----------	----------	-----------

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

Date Sampled: **05/31/23 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	141	0.0586	mg/L dry	1	BGF0233	06/07/23	06/10/23	EPA 6020B	
Magnesium	68.0	0.0586	"	"	"	"	"	"	
Sodium	269	0.0586	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/31/23 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.66	0.00100	units	1	BGF0432	06/12/23	06/12/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/31/23 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.3		%	1	BGF0170	06/06/23	06/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/31/23 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.09	0.0100	mmhos/cm	1	BGF0289	06/08/23	06/08/23	EPA 120.1	

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

Date Sampled: **05/31/23 15:45**

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

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**BH13@14-15'**  
**2305702-27 (Soil)**

**Summit Scientific**

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

pH	8.03	pH Units	1	BGF0290	06/08/23	06/08/23	EPA 9045D
----	------	----------	---	---------	----------	----------	-----------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

## 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 BGF0106 - EPA 5030 Soil MS

##### Blank (BGF0106-BLK1)

Prepared: 06/02/23 Analyzed: 06/07/23

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	0.0356		"	0.0400		88.9	50-150			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	50-150			

##### LCS (BGF0106-BS1)

Prepared: 06/02/23 Analyzed: 06/07/23

Benzene	0.171	0.0020	mg/kg	0.150		114	70-130			
Toluene	0.154	0.0050	"	0.150		103	70-130			
Ethylbenzene	0.157	0.0050	"	0.150		104	70-130			
m,p-Xylene	0.309	0.010	"	0.300		103	70-130			
o-Xylene	0.165	0.0050	"	0.150		110	70-130			
1,2,4-Trimethylbenzene	0.162	0.0050	"	0.150		108	70-130			
1,3,5-Trimethylbenzene	0.159	0.0050	"	0.150		106	70-130			
Naphthalene	0.151	0.0038	"	0.150		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0409		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	50-150			

##### Matrix Spike (BGF0106-MS1)

Source: 2305669-03

Prepared: 06/02/23 Analyzed: 06/07/23

Benzene	0.171	0.0020	mg/kg	0.150	ND	114	70-130			
Toluene	0.156	0.0050	"	0.150	ND	104	70-130			
Ethylbenzene	0.154	0.0050	"	0.150	ND	102	70-130			
m,p-Xylene	0.305	0.010	"	0.300	ND	102	70-130			
o-Xylene	0.164	0.0050	"	0.150	ND	109	70-130			
1,2,4-Trimethylbenzene	0.158	0.0050	"	0.150	ND	106	70-130			
1,3,5-Trimethylbenzene	0.155	0.0050	"	0.150	ND	103	70-130			
Naphthalene	0.157	0.0038	"	0.150	ND	104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.6	50-150			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.5	50-150			

Summit Scientific

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



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

Project: Noble - Thompson D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**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 BGF0106 - EPA 5030 Soil MS**

Matrix Spike Dup (BGF0106-MSD1)		Source: 2305669-03			Prepared: 06/02/23 Analyzed: 06/07/23					
Benzene	0.165	0.0020	mg/kg	0.150	ND	110	70-130	4.02	30	
Toluene	0.150	0.0050	"	0.150	ND	100	70-130	3.69	30	
Ethylbenzene	0.156	0.0050	"	0.150	ND	104	70-130	1.59	30	
m,p-Xylene	0.308	0.010	"	0.300	ND	103	70-130	1.10	30	
o-Xylene	0.162	0.0050	"	0.150	ND	108	70-130	1.25	30	
1,2,4-Trimethylbenzene	0.157	0.0050	"	0.150	ND	104	70-130	1.12	30	
1,3,5-Trimethylbenzene	0.156	0.0050	"	0.150	ND	104	70-130	1.00	30	
Naphthalene	0.156	0.0038	"	0.150	ND	104	70-130	0.576	30	
Surrogate: 1,2-Dichloroethane-d4	0.0397		"	0.0400		99.2	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	50-150			

**Batch BGF0140 - EPA 5030 Soil MS**

Blank (BGF0140-BLK1)		Prepared & Analyzed: 06/05/23								
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	0.0389		"	0.0400		97.3	50-150			
Surrogate: Toluene-d8	0.0447		"	0.0400		112	50-150			
Surrogate: 4-Bromofluorobenzene	0.0371		"	0.0400		92.8	50-150			

Summit Scientific

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



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

Project: Noble - Thompson D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**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 BGF0140 - EPA 5030 Soil MS**

**LCS (BGF0140-BS1)**

Prepared & Analyzed: 06/05/23

Benzene	0.0853	0.0020	mg/kg	0.100			85.3	70-130			
Toluene	0.115	0.0050	"	0.100			115	70-130			
Ethylbenzene	0.111	0.0050	"	0.100			111	70-130			
m,p-Xylene	0.224	0.010	"	0.200			112	70-130			
o-Xylene	0.106	0.0050	"	0.100			106	70-130			
1,2,4-Trimethylbenzene	0.108	0.0050	"	0.100			108	70-130			
1,3,5-Trimethylbenzene	0.115	0.0050	"	0.100			115	70-130			
Naphthalene	0.0875	0.0038	"	0.100			87.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400			103	50-150			
Surrogate: Toluene-d8	0.0467		"	0.0400			117	50-150			
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400			93.4	50-150			

**Matrix Spike (BGF0140-MS1)**

Source: 2305702-12

Prepared & Analyzed: 06/05/23

Benzene	0.0838	0.0020	mg/kg	0.100	ND		83.8	70-130			
Toluene	0.110	0.0050	"	0.100	ND		110	70-130			
Ethylbenzene	0.115	0.0050	"	0.100	ND		115	70-130			
m,p-Xylene	0.231	0.010	"	0.200	ND		115	70-130			
o-Xylene	0.108	0.0050	"	0.100	ND		108	70-130			
1,2,4-Trimethylbenzene	0.111	0.0050	"	0.100	ND		111	70-130			
1,3,5-Trimethylbenzene	0.118	0.0050	"	0.100	ND		118	70-130			
Naphthalene	0.0933	0.0038	"	0.100	ND		93.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0368		"	0.0400			92.0	50-150			
Surrogate: Toluene-d8	0.0441		"	0.0400			110	50-150			
Surrogate: 4-Bromofluorobenzene	0.0363		"	0.0400			90.8	50-150			

**Matrix Spike Dup (BGF0140-MSD1)**

Source: 2305702-12

Prepared & Analyzed: 06/05/23

Benzene	0.0786	0.0020	mg/kg	0.100	ND		78.6	70-130	6.39	30	
Toluene	0.105	0.0050	"	0.100	ND		105	70-130	4.89	30	
Ethylbenzene	0.103	0.0050	"	0.100	ND		103	70-130	11.1	30	
m,p-Xylene	0.208	0.010	"	0.200	ND		104	70-130	10.2	30	
o-Xylene	0.0996	0.0050	"	0.100	ND		99.6	70-130	7.70	30	
1,2,4-Trimethylbenzene	0.104	0.0050	"	0.100	ND		104	70-130	7.08	30	
1,3,5-Trimethylbenzene	0.109	0.0050	"	0.100	ND		109	70-130	7.64	30	
Naphthalene	0.0983	0.0038	"	0.100	ND		98.3	70-130	5.26	30	
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400			96.3	50-150			
Surrogate: Toluene-d8	0.0440		"	0.0400			110	50-150			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400			93.9	50-150			

Summit Scientific

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





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

Project: Noble - Thompson D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**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 BGF0107 - EPA 3550A**

**Blank (BGF0107-BLK1)**

Prepared & Analyzed: 06/02/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.3		"	12.5		114	30-150			

**LCS (BGF0107-BS1)**

Prepared & Analyzed: 06/02/23

C10-C28 (DRO)	491	50	mg/kg	500		98.1	70-130			
Surrogate: o-Terphenyl	13.2		"	12.5		106	30-150			

**Matrix Spike (BGF0107-MS1)**

Source: 2305669-03

Prepared & Analyzed: 06/02/23

C10-C28 (DRO)	494	50	mg/kg	500	7.94	97.2	70-130			
Surrogate: o-Terphenyl	12.8		"	12.5		102	30-150			

**Matrix Spike Dup (BGF0107-MSD1)**

Source: 2305669-03

Prepared & Analyzed: 06/02/23

C10-C28 (DRO)	489	50	mg/kg	500	7.94	96.1	70-130	1.12	20	
Surrogate: o-Terphenyl	12.3		"	12.5		98.4	30-150			

**Batch BGF0142 - EPA 3550A**

**Blank (BGF0142-BLK1)**

Prepared & Analyzed: 06/05/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.0		"	12.5		95.8	30-150			

**LCS (BGF0142-BS1)**

Prepared & Analyzed: 06/05/23

C10-C28 (DRO)	555	50	mg/kg	500		111	70-130			
Surrogate: o-Terphenyl	12.1		"	12.5		97.0	30-150			

Summit Scientific

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



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

Project: Noble - Thompson D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BGF0142 - EPA 3550A**

**Matrix Spike (BGF0142-MS1)**

Source: 2305702-12

Prepared & Analyzed: 06/05/23

C10-C28 (DRO)	579	50	mg/kg	500	27.0	110	70-130			
Surrogate: o-Terphenyl	11.6		"	12.5		93.1	30-150			

**Matrix Spike Dup (BGF0142-MSD1)**

Source: 2305702-12

Prepared & Analyzed: 06/05/23

C10-C28 (DRO)	551	50	mg/kg	500	27.0	105	70-130	5.02	20	
Surrogate: o-Terphenyl	11.8		"	12.5		94.2	30-150			

Summit Scientific

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



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

Project: Noble - Thompson D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGF0094 - EPA 5030 Soil MS

##### Blank (BGF0094-BLK1)

Prepared: 06/02/23 Analyzed: 06/03/23

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	0.0305		"	0.0333		91.5	40-150			
Surrogate: Fluoranthene-d10	0.0421		"	0.0333		126	40-150			

##### LCS (BGF0094-BS1)

Prepared: 06/02/23 Analyzed: 06/03/23

Acenaphthene	0.0353	0.00500	mg/kg	0.0333	106	31-137
Anthracene	0.0355	0.00500	"	0.0333	106	30-120
Benzo (a) anthracene	0.0379	0.00500	"	0.0333	114	30-120
Benzo (a) pyrene	0.0400	0.00500	"	0.0333	120	30-120
Benzo (b) fluoranthene	0.0383	0.00500	"	0.0333	115	30-120
Benzo (k) fluoranthene	0.0311	0.00500	"	0.0333	93.4	30-120
Chrysene	0.0368	0.00500	"	0.0333	110	30-120
Dibenz (a,h) anthracene	0.0352	0.00500	"	0.0333	105	30-120
Fluoranthene	0.0390	0.00500	"	0.0333	117	30-120
Fluorene	0.0391	0.00500	"	0.0333	117	30-120
Indeno (1,2,3-cd) pyrene	0.0371	0.00500	"	0.0333	111	30-120
Pyrene	0.0400	0.00500	"	0.0333	120	35-142
1-Methylnaphthalene	0.0279	0.00500	"	0.0333	83.6	35-142
2-Methylnaphthalene	0.0308	0.00500	"	0.0333	92.5	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0290		"	0.0333	87.0	40-150
Surrogate: Fluoranthene-d10	0.0352		"	0.0333	106	40-150

Summit Scientific

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



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

Project: Noble - Thompson D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

## 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 BGF0094 - EPA 5030 Soil MS

Matrix Spike (BGF0094-MS1)			Source: 2305702-01		Prepared: 06/02/23 Analyzed: 06/03/23						
Acenaphthene	0.0328	0.00500	mg/kg	0.0333	ND	98.5	31-137				
Anthracene	0.0312	0.00500	"	0.0333	ND	93.5	30-120				
Benzo (a) anthracene	0.0349	0.00500	"	0.0333	ND	105	30-120				
Benzo (a) pyrene	0.0293	0.00500	"	0.0333	ND	87.8	30-120				
Benzo (b) fluoranthene	0.0390	0.00500	"	0.0333	ND	117	30-120				
Benzo (k) fluoranthene	0.0333	0.00500	"	0.0333	ND	99.8	30-120				
Chrysene	0.0274	0.00500	"	0.0333	ND	82.1	30-120				
Dibenz (a,h) anthracene	0.0310	0.00500	"	0.0333	ND	93.1	30-120				
Fluoranthene	0.0285	0.00500	"	0.0333	ND	85.5	30-120				
Fluorene	0.0317	0.00500	"	0.0333	ND	95.1	30-120				
Indeno (1,2,3-cd) pyrene	0.0351	0.00500	"	0.0333	ND	105	30-120				
Pyrene	0.0390	0.00500	"	0.0333	ND	117	35-142				
1-Methylnaphthalene	0.0268	0.00500	"	0.0333	ND	80.4	15-130				
2-Methylnaphthalene	0.0270	0.00500	"	0.0333	ND	81.1	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0260		"	0.0333		77.9	40-150				
Surrogate: Fluoranthene-d10	0.0317		"	0.0333		95.2	40-150				

Matrix Spike Dup (BGF0094-MSD1)			Source: 2305702-01		Prepared: 06/02/23 Analyzed: 06/03/23						
Acenaphthene	0.0248	0.00500	mg/kg	0.0333	ND	74.5	31-137	27.7	30		
Anthracene	0.0291	0.00500	"	0.0333	ND	87.2	30-120	6.95	30		
Benzo (a) anthracene	0.0269	0.00500	"	0.0333	ND	80.6	30-120	26.0	30		
Benzo (a) pyrene	0.0223	0.00500	"	0.0333	ND	67.0	30-120	26.8	30		
Benzo (b) fluoranthene	0.0343	0.00500	"	0.0333	ND	103	30-120	12.6	30		
Benzo (k) fluoranthene	0.0336	0.00500	"	0.0333	ND	101	30-120	1.11	30		
Chrysene	0.0211	0.00500	"	0.0333	ND	63.4	30-120	25.6	30		
Dibenz (a,h) anthracene	0.0277	0.00500	"	0.0333	ND	83.0	30-120	11.5	30		
Fluoranthene	0.0307	0.00500	"	0.0333	ND	92.1	30-120	7.48	30		
Fluorene	0.0330	0.00500	"	0.0333	ND	99.0	30-120	4.01	30		
Indeno (1,2,3-cd) pyrene	0.0269	0.00500	"	0.0333	ND	80.8	30-120	26.2	30		
Pyrene	0.0317	0.00500	"	0.0333	ND	95.1	35-142	20.7	30		
1-Methylnaphthalene	0.0215	0.00500	"	0.0333	ND	64.6	15-130	21.7	50		
2-Methylnaphthalene	0.0227	0.00500	"	0.0333	ND	68.0	15-130	17.5	50		
Surrogate: 2-Methylnaphthalene-d10	0.0217		"	0.0333		65.1	40-150				
Surrogate: Fluoranthene-d10	0.0235		"	0.0333		70.5	40-150				

Summit Scientific

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



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

Project: Noble - Thompson D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGF0125 - EPA 5030 Soil MS

##### Blank (BGF0125-BLK1)

Prepared & Analyzed: 06/05/23

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	0.0256		"	0.0333		76.7	40-150			
Surrogate: Fluoranthene-d10	0.0360		"	0.0333		108	40-150			

##### LCS (BGF0125-BS1)

Prepared & Analyzed: 06/05/23

Acenaphthene	0.0333	0.00500	mg/kg	0.0333		99.8	31-137			
Anthracene	0.0312	0.00500	"	0.0333		93.7	30-120			
Benzo (a) anthracene	0.0290	0.00500	"	0.0333		86.9	30-120			
Benzo (a) pyrene	0.0259	0.00500	"	0.0333		77.6	30-120			
Benzo (b) fluoranthene	0.0293	0.00500	"	0.0333		88.0	30-120			
Benzo (k) fluoranthene	0.0322	0.00500	"	0.0333		96.5	30-120			
Chrysene	0.0333	0.00500	"	0.0333		100	30-120			
Dibenz (a,h) anthracene	0.0179	0.00500	"	0.0333		53.8	30-120			
Fluoranthene	0.0296	0.00500	"	0.0333		88.7	30-120			
Fluorene	0.0307	0.00500	"	0.0333		92.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0240	0.00500	"	0.0333		72.1	30-120			
Pyrene	0.0380	0.00500	"	0.0333		114	35-142			
1-Methylnaphthalene	0.0241	0.00500	"	0.0333		72.4	35-142			
2-Methylnaphthalene	0.0245	0.00500	"	0.0333		73.6	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0241		"	0.0333		72.4	40-150			
Surrogate: Fluoranthene-d10	0.0301		"	0.0333		90.4	40-150			

Summit Scientific

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



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

Project: Noble - Thompson D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGF0125 - EPA 5030 Soil MS

Matrix Spike (BGF0125-MS1)			Source: 2305702-11		Prepared & Analyzed: 06/05/23					
Acenaphthene	0.0163	0.00500	mg/kg	0.0333	ND	48.9	31-137			
Anthracene	0.0161	0.00500	"	0.0333	ND	48.2	30-120			
Benzo (a) anthracene	0.0170	0.00500	"	0.0333	ND	51.1	30-120			
Benzo (a) pyrene	0.0151	0.00500	"	0.0333	ND	45.2	30-120			
Benzo (b) fluoranthene	0.0159	0.00500	"	0.0333	ND	47.7	30-120			
Benzo (k) fluoranthene	0.0147	0.00500	"	0.0333	ND	44.2	30-120			
Chrysene	0.0173	0.00500	"	0.0333	ND	51.8	30-120			
Dibenz (a,h) anthracene	0.0139	0.00500	"	0.0333	ND	41.7	30-120			
Fluoranthene	0.0153	0.00500	"	0.0333	ND	45.8	30-120			
Fluorene	0.0162	0.00500	"	0.0333	ND	48.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0157	0.00500	"	0.0333	ND	47.2	30-120			
Pyrene	0.0184	0.00500	"	0.0333	ND	55.3	35-142			
1-Methylnaphthalene	0.0163	0.00500	"	0.0333	ND	48.9	15-130			
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.3	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0150		"	0.0333		45.0	40-150			
Surrogate: Fluoranthene-d10	0.0173		"	0.0333		51.8	40-150			

Matrix Spike Dup (BGF0125-MSD1)			Source: 2305702-11		Prepared & Analyzed: 06/05/23					
Acenaphthene	0.0151	0.00500	mg/kg	0.0333	ND	45.2	31-137	7.76	30	
Anthracene	0.0142	0.00500	"	0.0333	ND	42.6	30-120	12.3	30	
Benzo (a) anthracene	0.0151	0.00500	"	0.0333	ND	45.3	30-120	12.0	30	
Benzo (a) pyrene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	1.24	30	
Benzo (b) fluoranthene	0.0140	0.00500	"	0.0333	ND	42.0	30-120	12.5	30	
Benzo (k) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	11.5	30	
Chrysene	0.0149	0.00500	"	0.0333	ND	44.7	30-120	14.9	30	
Dibenz (a,h) anthracene	0.0148	0.00500	"	0.0333	ND	44.3	30-120	6.04	30	
Fluoranthene	0.0157	0.00500	"	0.0333	ND	47.1	30-120	2.80	30	
Fluorene	0.0134	0.00500	"	0.0333	ND	40.1	30-120	18.9	30	
Indeno (1,2,3-cd) pyrene	0.0148	0.00500	"	0.0333	ND	44.3	30-120	6.34	30	
Pyrene	0.0160	0.00500	"	0.0333	ND	48.0	35-142	14.1	30	
1-Methylnaphthalene	0.0175	0.00500	"	0.0333	ND	52.4	15-130	6.86	50	
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.5	15-130	0.482	50	
Surrogate: 2-Methylnaphthalene-d10	0.0160		"	0.0333		48.1	40-150			
Surrogate: Fluoranthene-d10	0.0150		"	0.0333		44.9	40-150			

Summit Scientific

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



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

Project: Noble - Thompson D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**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 BGF0173 - EPA 3050B**

**Blank (BGF0173-BLK1)**

Prepared: 06/06/23 Analyzed: 06/14/23

Boron ND 0.0100 mg/L

**LCS (BGF0173-BS1)**

Prepared: 06/06/23 Analyzed: 06/14/23

Boron 6.74 0.0100 mg/L 7.50 89.9 80-120

**Duplicate (BGF0173-DUP1)**

**Source: 2305700-01**

Prepared: 06/06/23 Analyzed: 06/14/23

Boron 0.142 0.0100 mg/L 0.153 7.75 20

**Matrix Spike (BGF0173-MS1)**

**Source: 2305700-01**

Prepared: 06/06/23 Analyzed: 06/14/23

Boron 7.08 0.0100 mg/L 7.50 0.153 92.4 75-125

**Matrix Spike Dup (BGF0173-MSD1)**

**Source: 2305700-01**

Prepared: 06/06/23 Analyzed: 06/14/23

Boron 6.98 0.0100 mg/L 7.50 0.153 91.0 75-125 1.54 25

**Batch BGF0174 - EPA 3050B**

**Blank (BGF0174-BLK1)**

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

Boron ND 0.0100 mg/L

**LCS (BGF0174-BS1)**

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

Boron 5.54 0.0100 mg/L 5.00 111 80-120

**Duplicate (BGF0174-DUP1)**

**Source: 2305702-18**

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

Boron 0.119 0.0100 mg/L 0.120 0.310 20

**Matrix Spike (BGF0174-MS1)**

**Source: 2305702-18**

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

Boron 5.90 0.0100 mg/L 5.00 0.120 116 75-125

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

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

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

**Batch BGF0174 - EPA 3050B**

**Matrix Spike Dup (BGF0174-MSD1)**

**Source: 2305702-18**

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

Boron	5.44	0.0100	mg/L	5.00	0.120	106	75-125	8.17	25
-------	------	--------	------	------	-------	-----	--------	------	----

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**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 BGF0154 - EPA 3050B**

**Blank (BGF0154-BLK1)**

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

Arsenic ND 0.200 mg/kg wet

**LCS (BGF0154-BS1)**

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

Arsenic 36.8 0.200 mg/kg wet 40.0 91.9 80-120

**Duplicate (BGF0154-DUP1)**

**Source: 2305439-01**

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

Arsenic 1.20 0.200 mg/kg dry 1.12 6.87 20

**Matrix Spike (BGF0154-MS1)**

**Source: 2305439-01**

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

Arsenic 40.7 0.200 mg/kg dry 42.3 1.12 93.6 75-125

**Matrix Spike Dup (BGF0154-MSD1)**

**Source: 2305439-01**

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

Arsenic 40.1 0.200 mg/kg dry 42.3 1.12 92.2 75-125 1.48 25

**Batch BGF0164 - EPA 3050B**

**Blank (BGF0164-BLK1)**

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

Arsenic ND 0.200 mg/kg wet

**LCS (BGF0164-BS1)**

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

Arsenic 37.9 0.200 mg/kg wet 40.0 94.8 80-120

**Duplicate (BGF0164-DUP1)**

**Source: 2305700-01**

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

Arsenic 0.473 0.200 mg/kg dry 0.507 7.04 20

**Matrix Spike (BGF0164-MS1)**

**Source: 2305700-01**

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

Arsenic 17.6 0.200 mg/kg dry 45.4 0.507 37.8 75-125 QM-05

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**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 BGF0164 - EPA 3050B**

**Matrix Spike Dup (BGF0164-MSD1)**

**Source: 2305700-01**

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

Arsenic	18.0	0.200	mg/kg dry	45.4	0.507	38.6	75-125	1.99	25	QM-05
---------	------	-------	-----------	------	-------	------	--------	------	----	-------

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**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 BGF0232 - General Preparation**

**Blank (BGF0232-BLK1)**

Prepared: 06/07/23 Analyzed: 06/16/23

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

**LCS (BGF0232-BS1)**

Prepared: 06/07/23 Analyzed: 06/16/23

Calcium	5.93	0.0500	mg/L wet	5.00	119	70-130
Magnesium	5.38	0.0500	"	5.00	108	70-130
Sodium	5.72	0.0500	"	5.00	114	70-130

**Batch BGF0233 - General Preparation**

**Blank (BGF0233-BLK1)**

Prepared: 06/07/23 Analyzed: 06/10/23

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

**LCS (BGF0233-BS1)**

Prepared: 06/07/23 Analyzed: 06/10/23

Calcium	4.96	0.0500	mg/L wet	5.00	99.2	70-130
Magnesium	5.60	0.0500	"	5.00	112	70-130
Sodium	5.57	0.0500	"	5.00	111	70-130

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**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 BGF0170 - General Preparation**

**Duplicate (BGF0170-DUP1)**

**Source: 2305393-12**

**Prepared & Analyzed: 06/06/23**

% Solids	88.4	%	87.6	0.914	20
----------	------	---	------	-------	----

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

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

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

**Batch BGF0289 - General Preparation**

**Blank (BGF0289-BLK1)**

Prepared & Analyzed: 06/08/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGF0289-BS1)**

Prepared & Analyzed: 06/08/23

Specific Conductance (EC) 0.158 0.0100 mmhos/cm 0.150 105 95-105

**Duplicate (BGF0289-DUP1)**

**Source: 2305702-21**

Prepared & Analyzed: 06/08/23

Specific Conductance (EC) 1.76 0.0100 mmhos/cm 1.83 3.67 20

**Batch BGF0317 - General Preparation**

**Blank (BGF0317-BLK1)**

Prepared & Analyzed: 06/08/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGF0317-BS1)**

Prepared & Analyzed: 06/08/23

Specific Conductance (EC) 0.158 0.0100 mmhos/cm 0.150 105 95-105

**Duplicate (BGF0317-DUP1)**

**Source: 2305702-01**

Prepared & Analyzed: 06/08/23

Specific Conductance (EC) 1.31 0.0100 mmhos/cm 1.31 0.534 20

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 D20-31D FAC  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

**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 BGF0290 - General Preparation**

**LCS (BGF0290-BS1)**

Prepared & Analyzed: 06/08/23

pH	9.03		pH Units	9.18	98.4	95-105
----	------	--	----------	------	------	--------

**Duplicate (BGF0290-DUP1)**

**Source: 2305702-21**

Prepared & Analyzed: 06/08/23

pH	7.99		pH Units	7.96	0.376	20
----	------	--	----------	------	-------	----

**Batch BGF0316 - General Preparation**

**LCS (BGF0316-BS1)**

Prepared & Analyzed: 06/08/23

pH	9.03		pH Units	9.18	98.4	95-105
----	------	--	----------	------	------	--------

**Duplicate (BGF0316-DUP1)**

**Source: 2305702-01**

Prepared & Analyzed: 06/08/23

pH	7.95		pH Units	7.92	0.378	20
----	------	--	----------	------	-------	----

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 D20-31D FAC

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/19/23 11:31

### Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 6.5

Thompson D20-31D

BORING / WELL ID: BH01

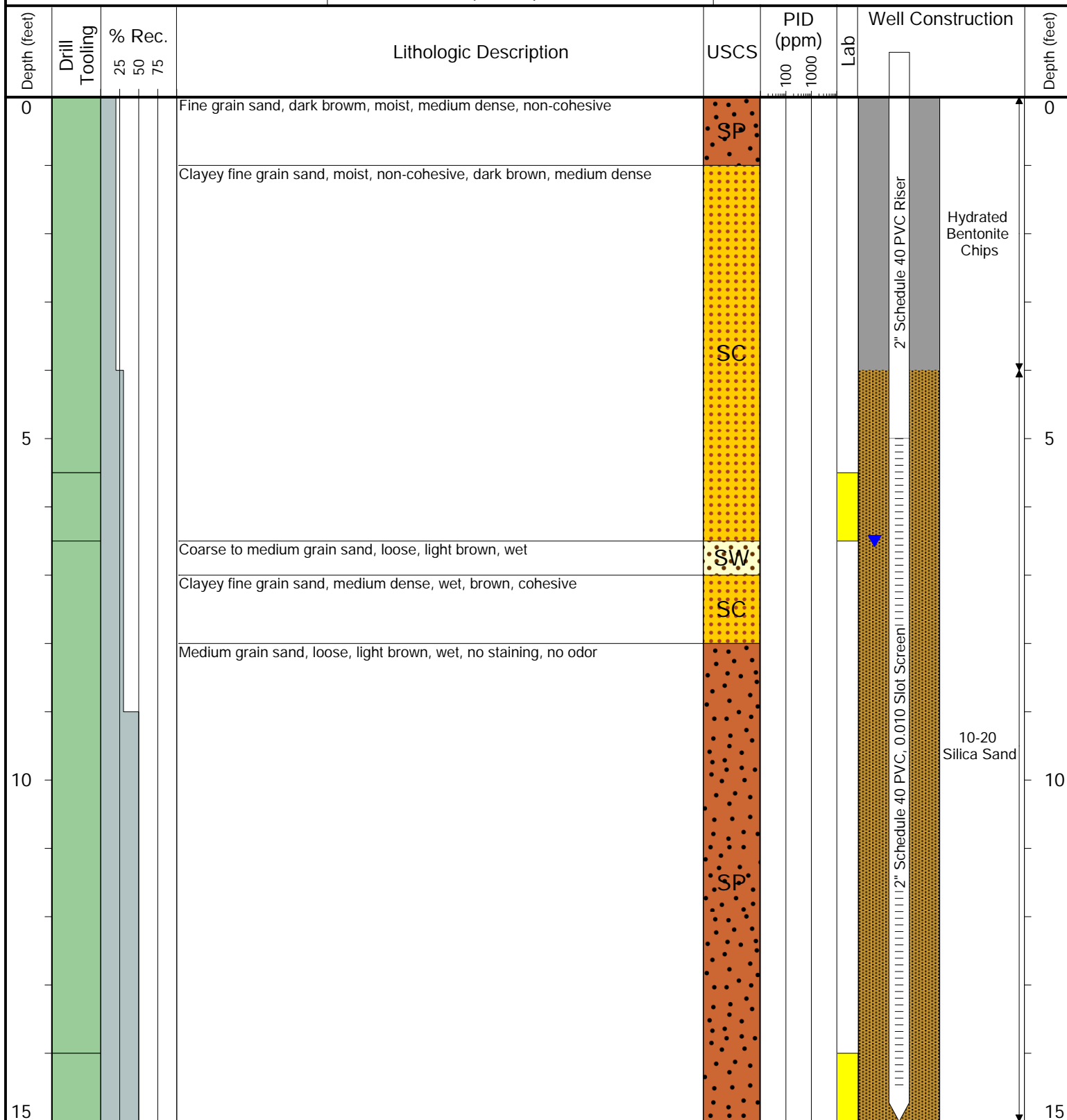
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218442415

LONGITUDE (NAD 83): -104.583973052

CASING ELEVATION (FT. AMSL): 4737.51

GROUND ELEVATION (FT. AMSL): 4737.93



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



# TASMAN

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 7

Thompson D20-31D

BORING / WELL ID: BH02

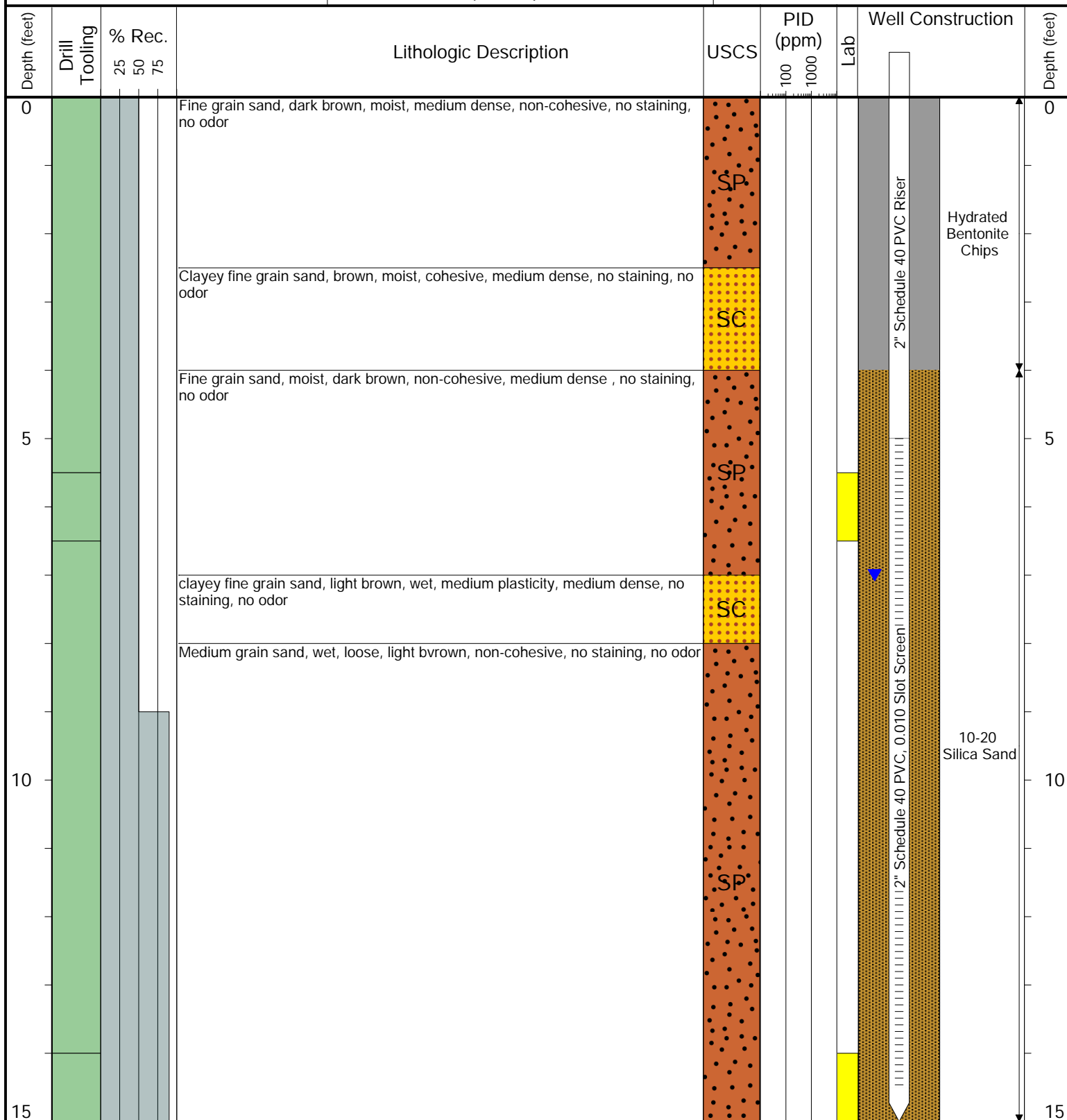
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218437045

LONGITUDE (NAD 83): -104.583899299

CASING ELEVATION (FT. AMSL): 4738.31

GROUND ELEVATION (FT. AMSL): 4738.6



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



# TASMAN

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 7

Thompson D20-31D

BORING / WELL ID: BH03

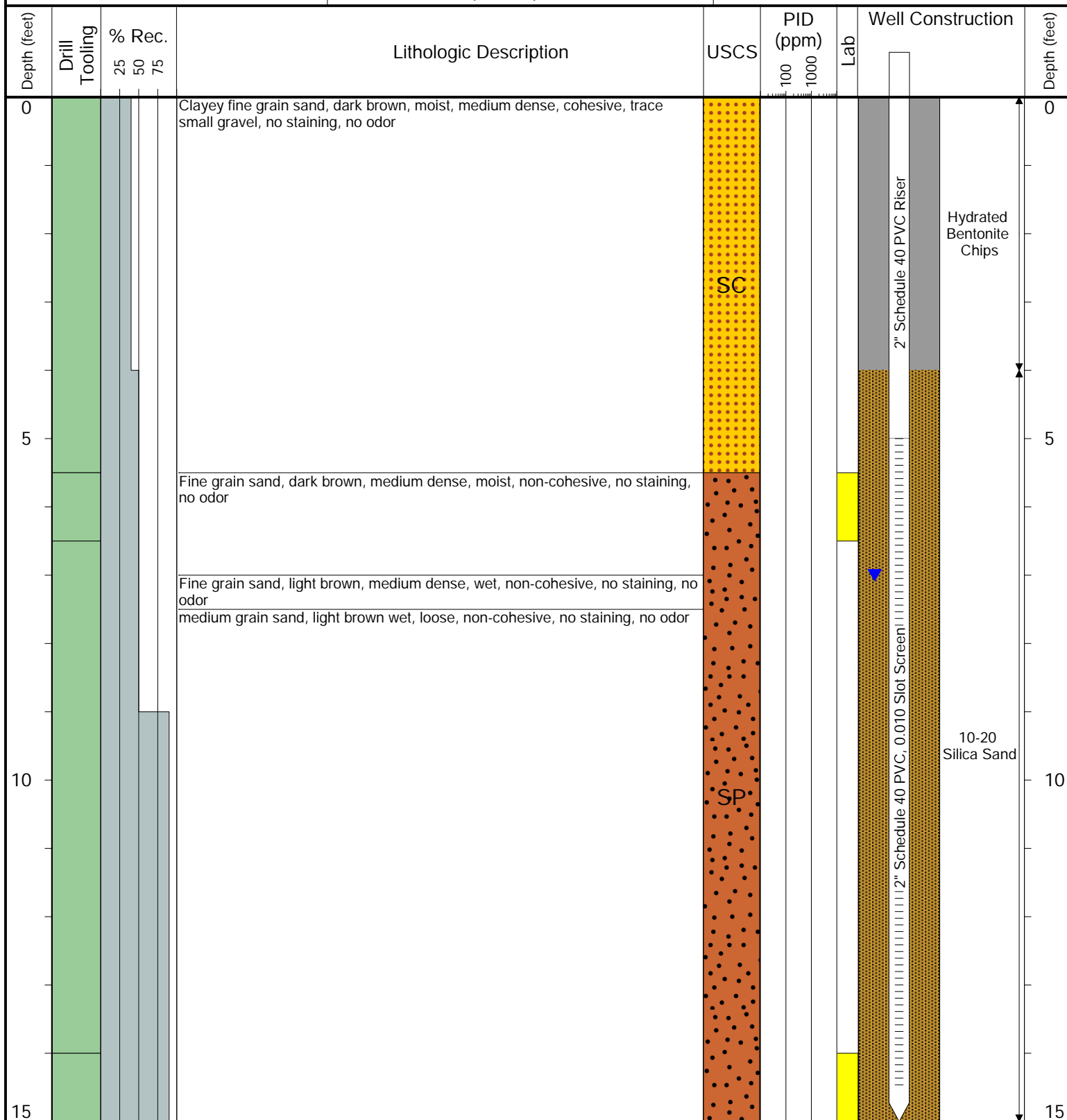
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218394161

LONGITUDE (NAD 83): -104.583964353

CASING ELEVATION (FT. AMSL): 4737.75

GROUND ELEVATION (FT. AMSL): 4738.08



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



# TASMAN

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 6.5

Thompson D20-31D

BORING / WELL ID: BH04

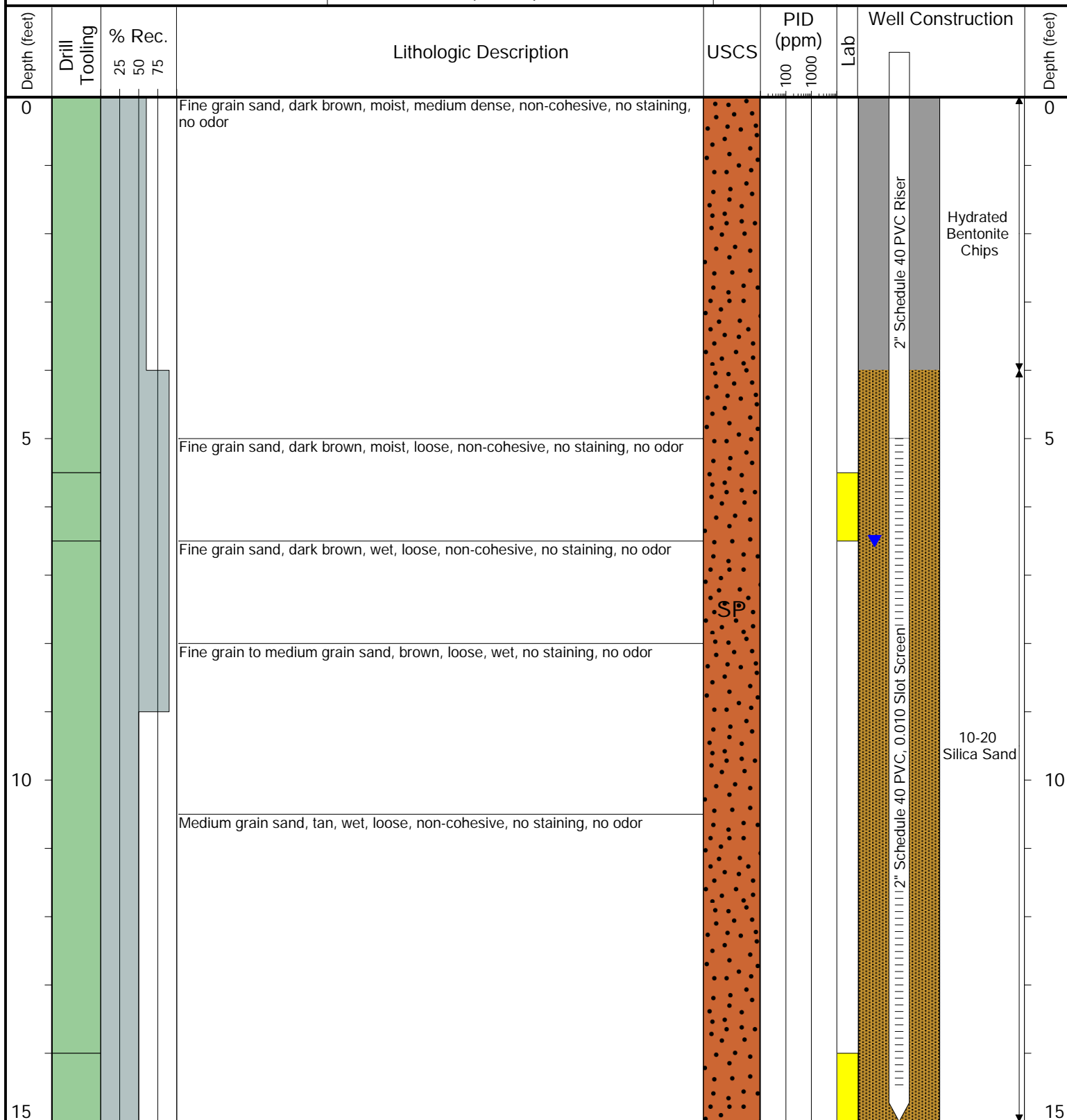
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218434738

LONGITUDE (NAD 83): -104.584032201

CASING ELEVATION (FT. AMSL): 4738.35

GROUND ELEVATION (FT. AMSL): 4738.74



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



# TASMAN

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 6

Thompson D20-31D

BORING / WELL ID: BH05

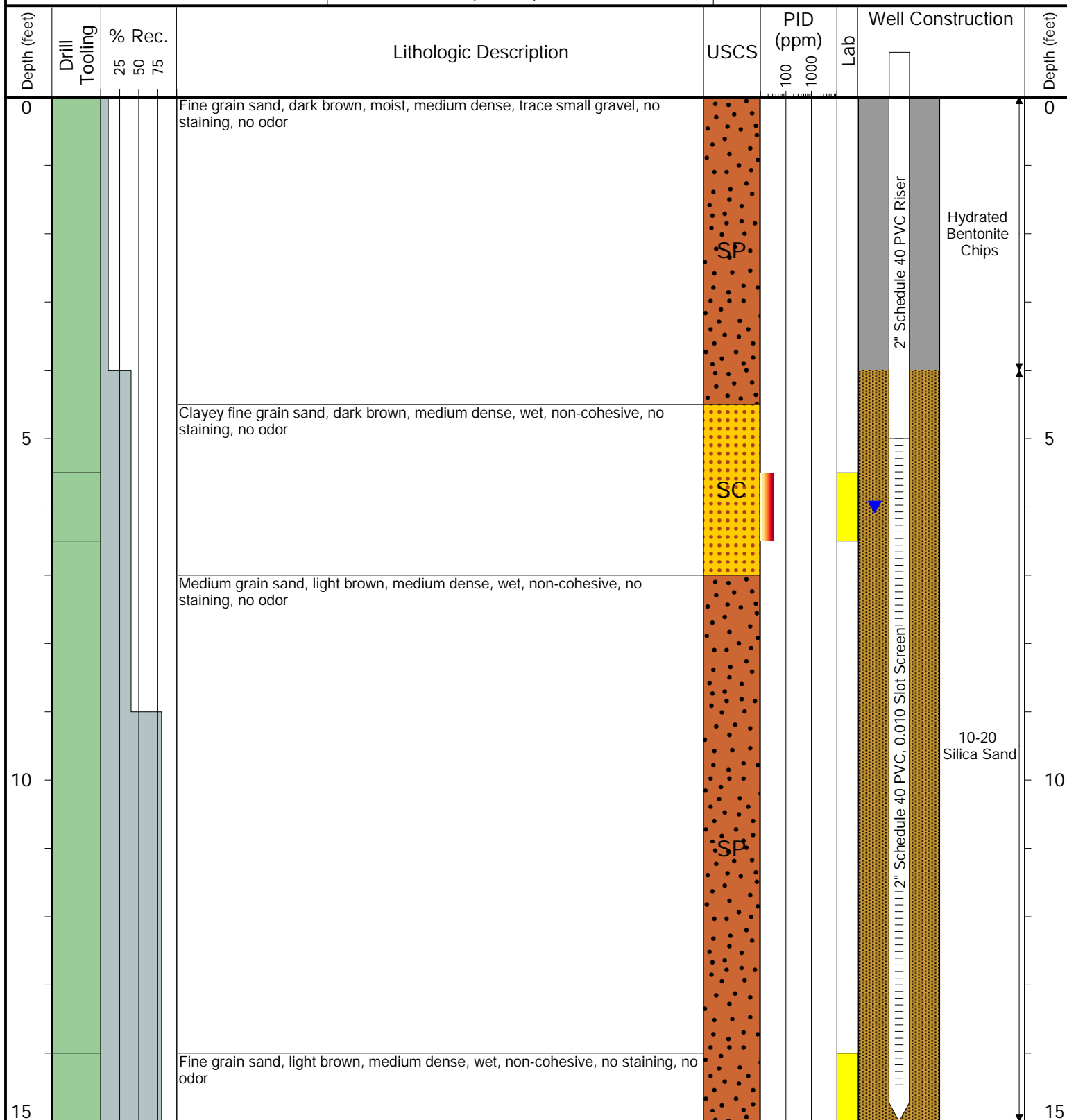
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218524357

LONGITUDE (NAD 83): -104.58397152

CASING ELEVATION (FT. AMSL): 4737.21

GROUND ELEVATION (FT. AMSL): 4738.65



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



# TASMAN

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 6

Thompson D20-31D

BORING / WELL ID: BH06

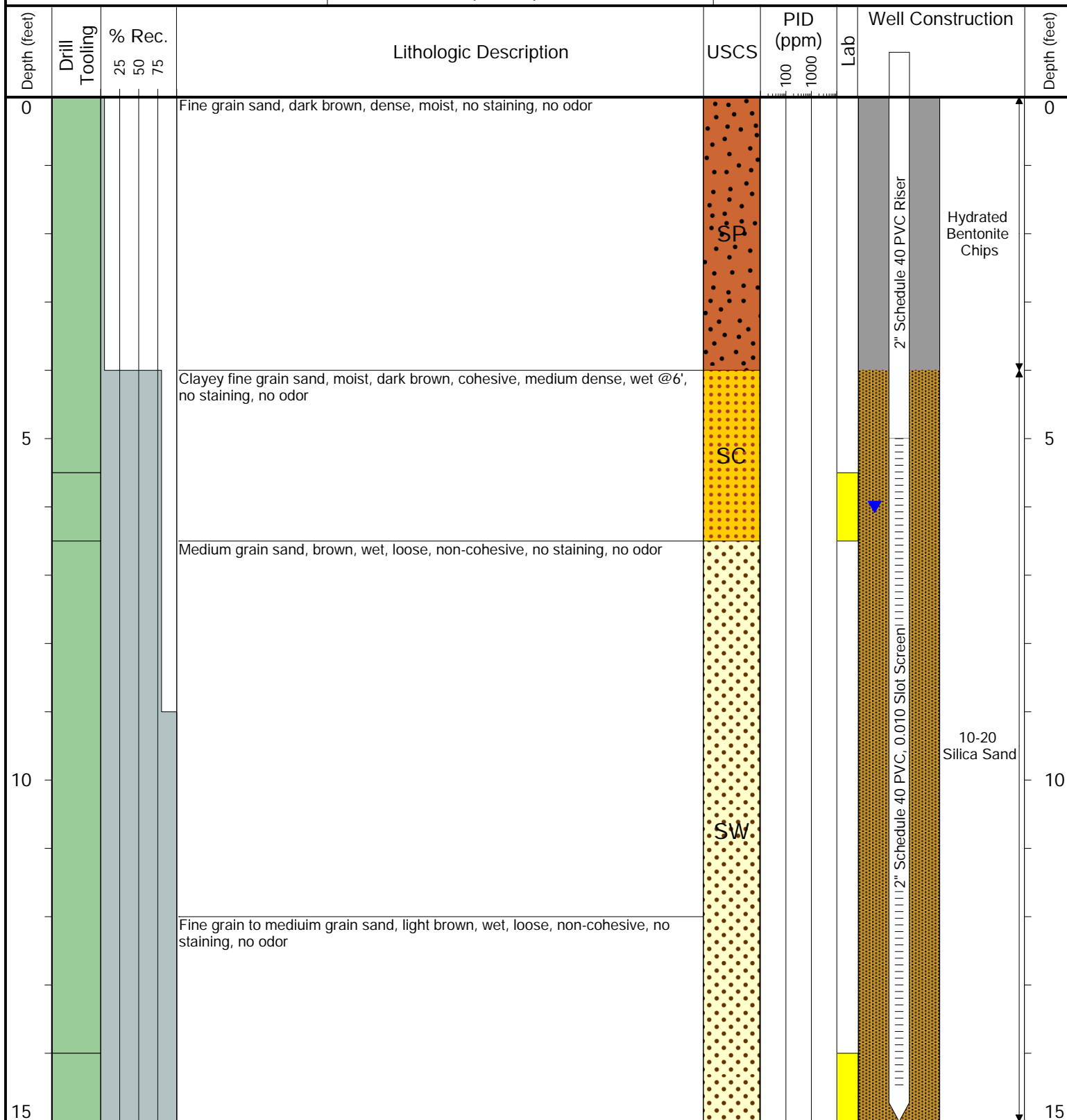
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218524302

LONGITUDE (NAD 83): -104.584030104

CASING ELEVATION (FT. AMSL): 4737.67

GROUND ELEVATION (FT. AMSL): 4738.13



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



# TASMAN

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 6.5

Thompson D20-31D

BORING / WELL ID: BH07

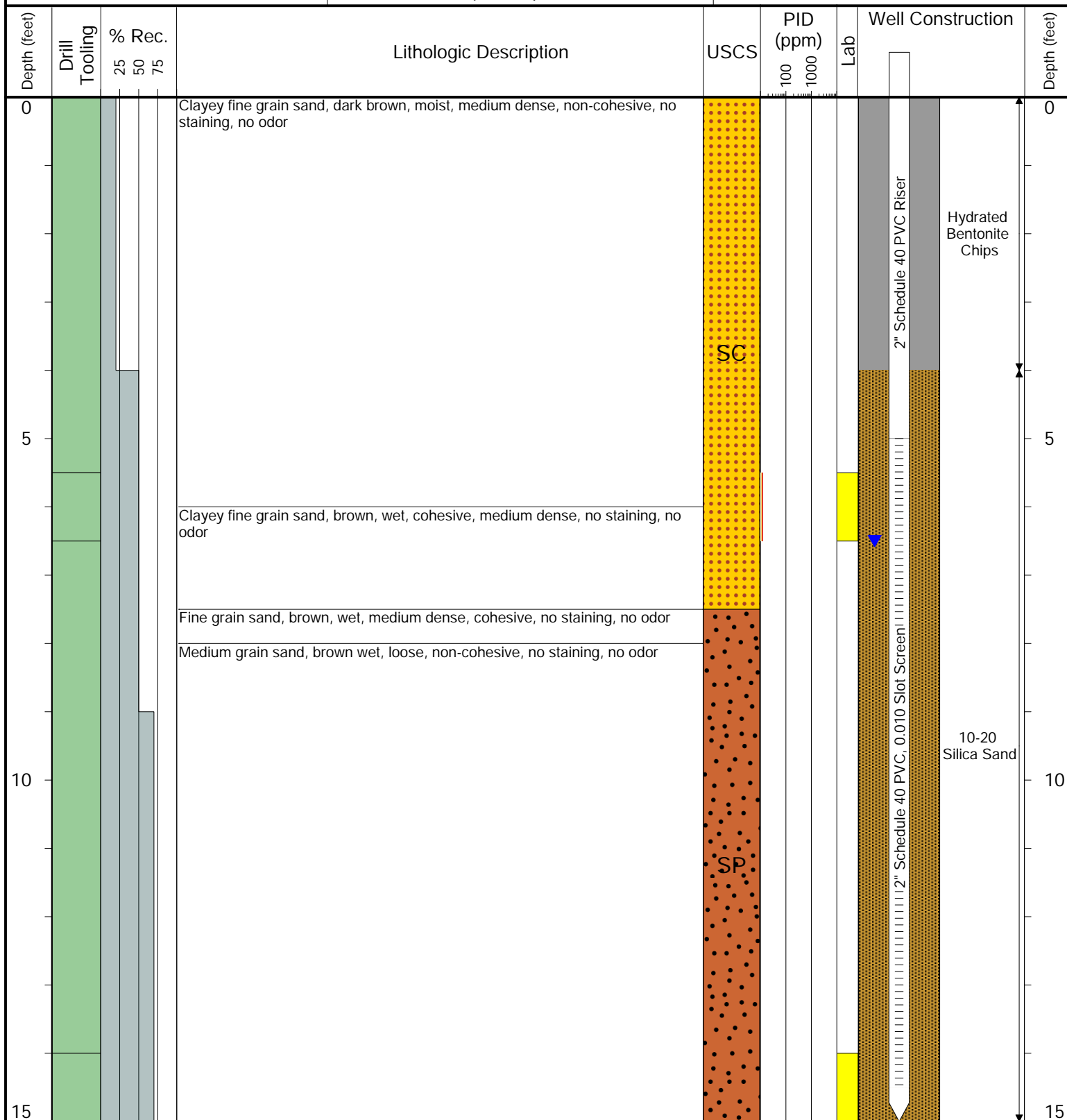
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218574164

LONGITUDE (NAD 83): -104.583973641

CASING ELEVATION (FT. AMSL): 4737.73

GROUND ELEVATION (FT. AMSL): 4738.1



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



# TASMAN

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 6

Thompson D20-31D

BORING / WELL ID: BH08

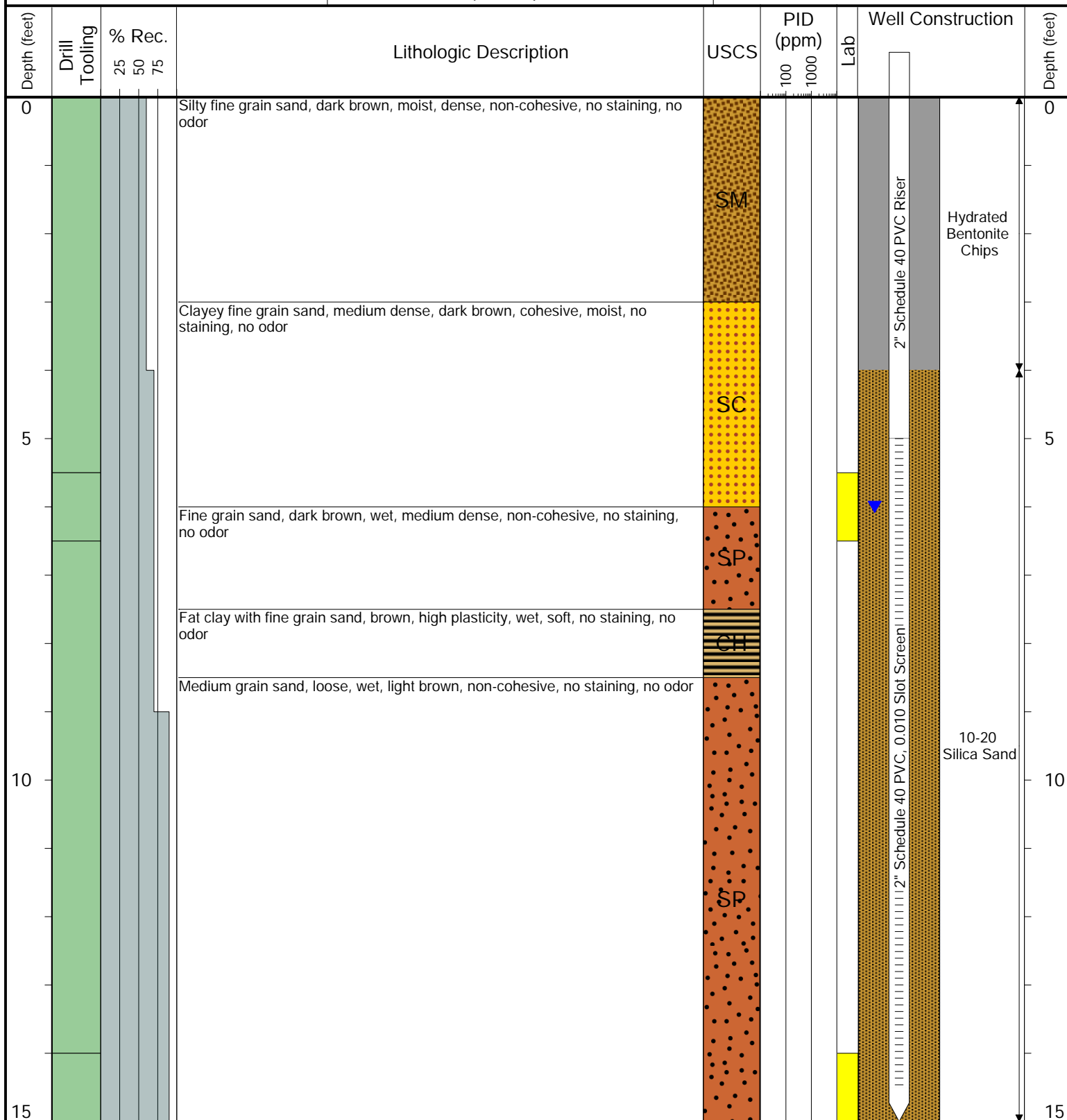
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218522022

LONGITUDE (NAD 83): -104.583904936

CASING ELEVATION (FT. AMSL): 4738.15

GROUND ELEVATION (FT. AMSL): 4738.4



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab





# TASMAN

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 7

Thompson D20-31D

BORING / WELL ID: BH09

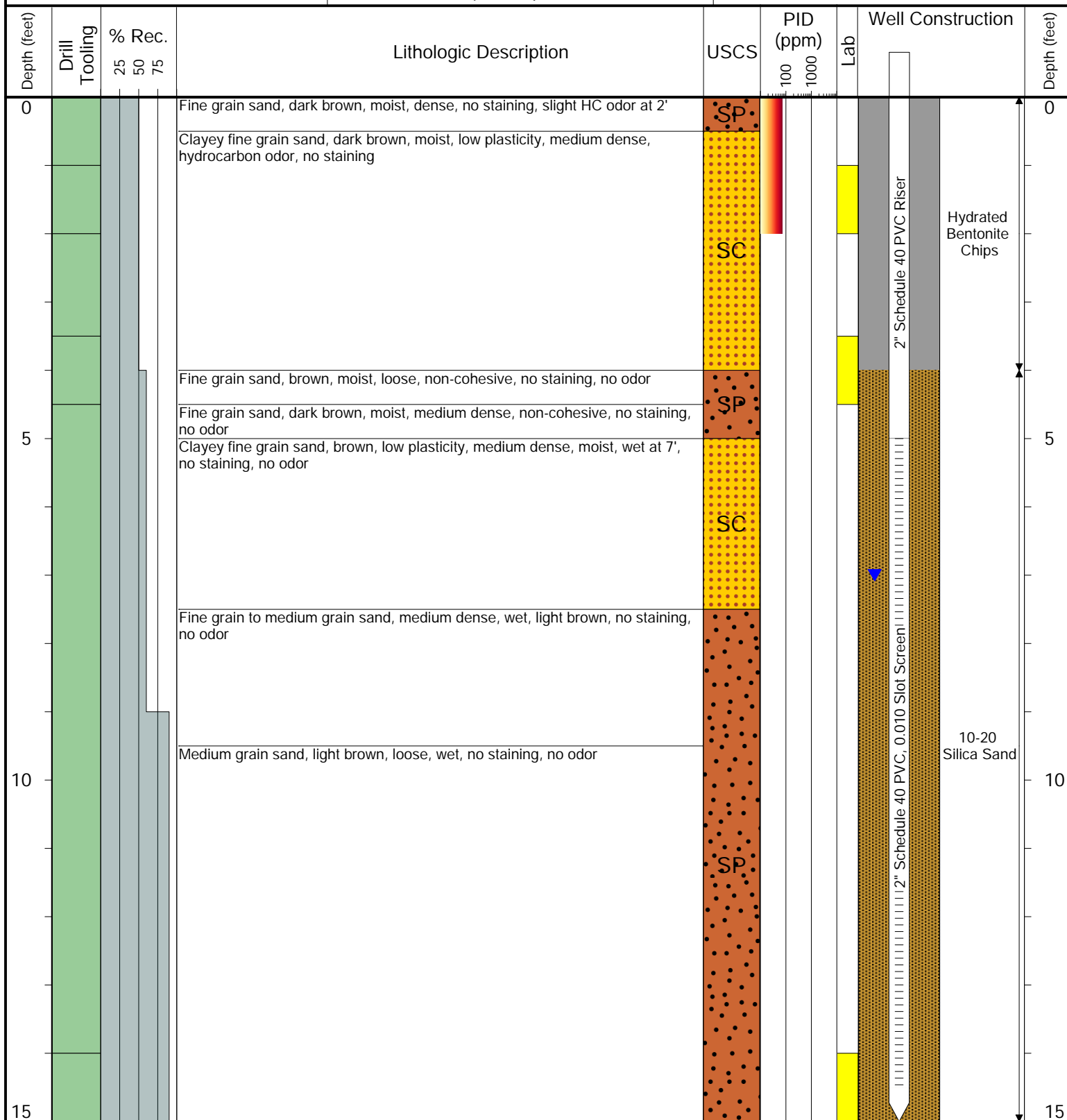
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218391121

LONGITUDE (NAD 83): -104.583618948

CASING ELEVATION (FT. AMSL): 4738.15

GROUND ELEVATION (FT. AMSL): 4738.54



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



# TASMAN

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 8

Thompson D20-31D

BORING / WELL ID: BH10

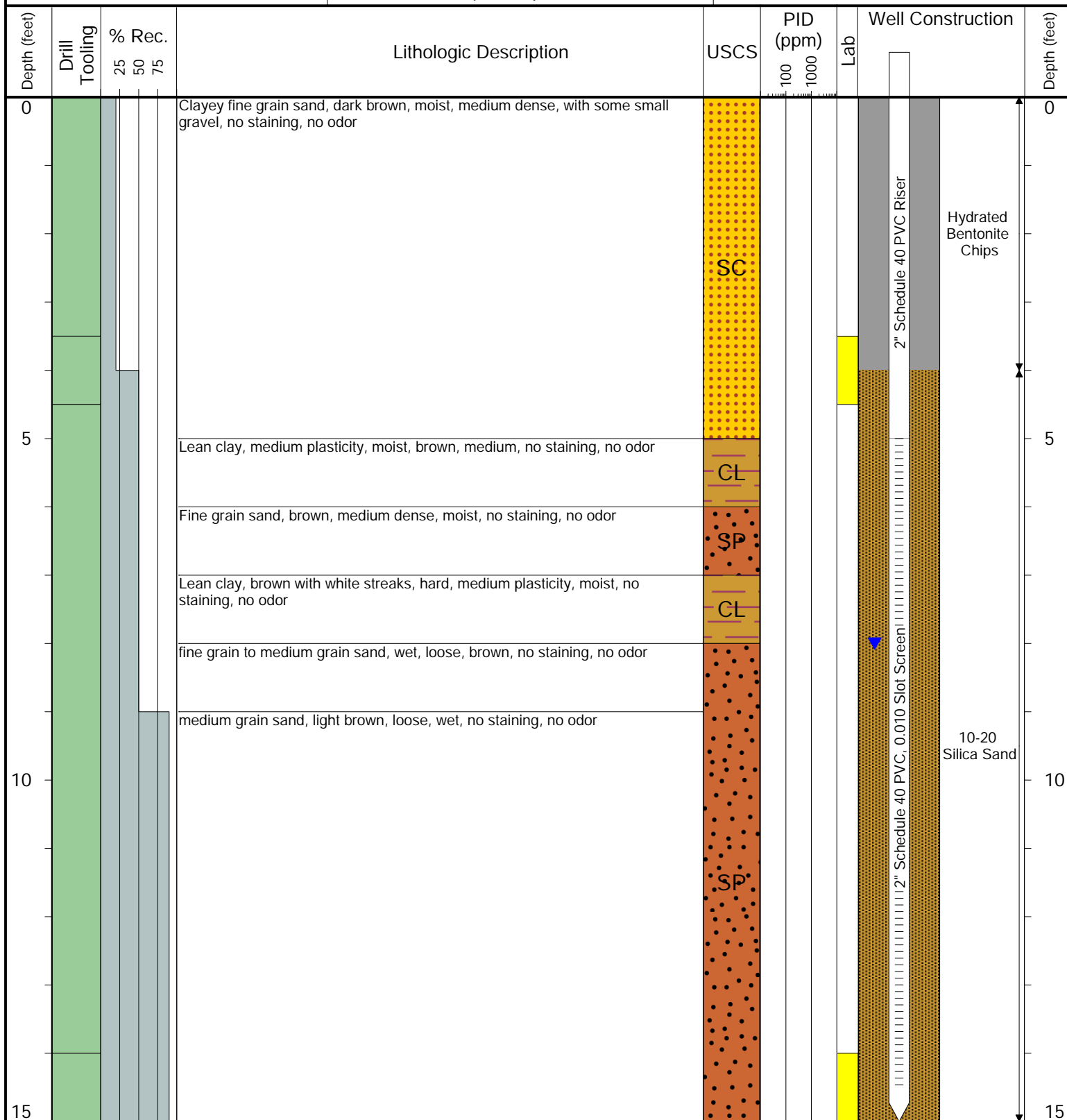
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218424396

LONGITUDE (NAD 83): -104.583622484

CASING ELEVATION (FT. AMSL): 4742.54

GROUND ELEVATION (FT. AMSL): 4738.42



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



# TASMAN

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 6.5

Thompson D20-31D

BORING / WELL ID: BH11

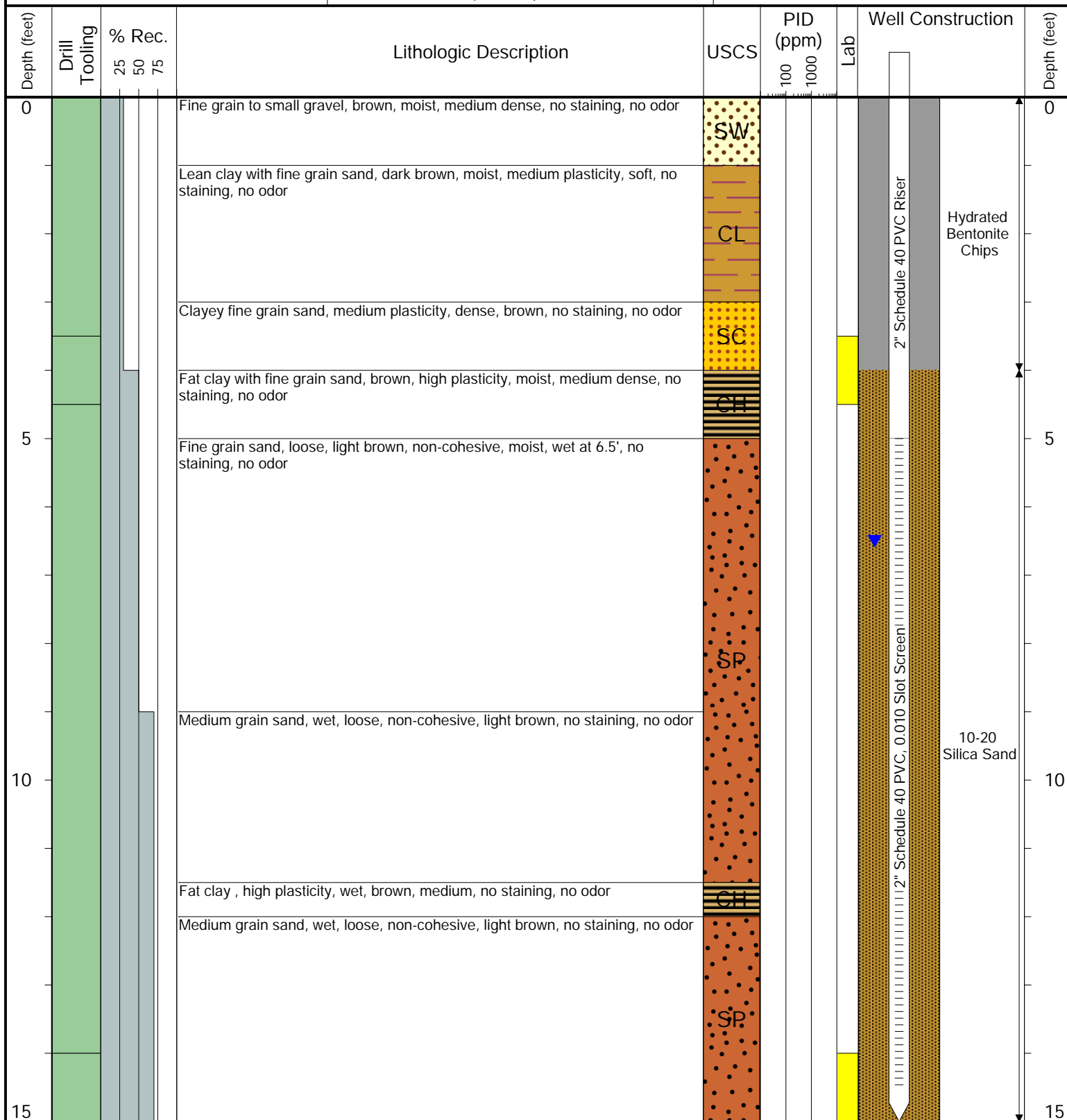
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218380256

LONGITUDE (NAD 83): -104.583559117

CASING ELEVATION (FT. AMSL): 4738.51

GROUND ELEVATION (FT. AMSL): 4738.68



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



# TASMAN

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 7

Thompson D20-31D

BORING / WELL ID: BH12

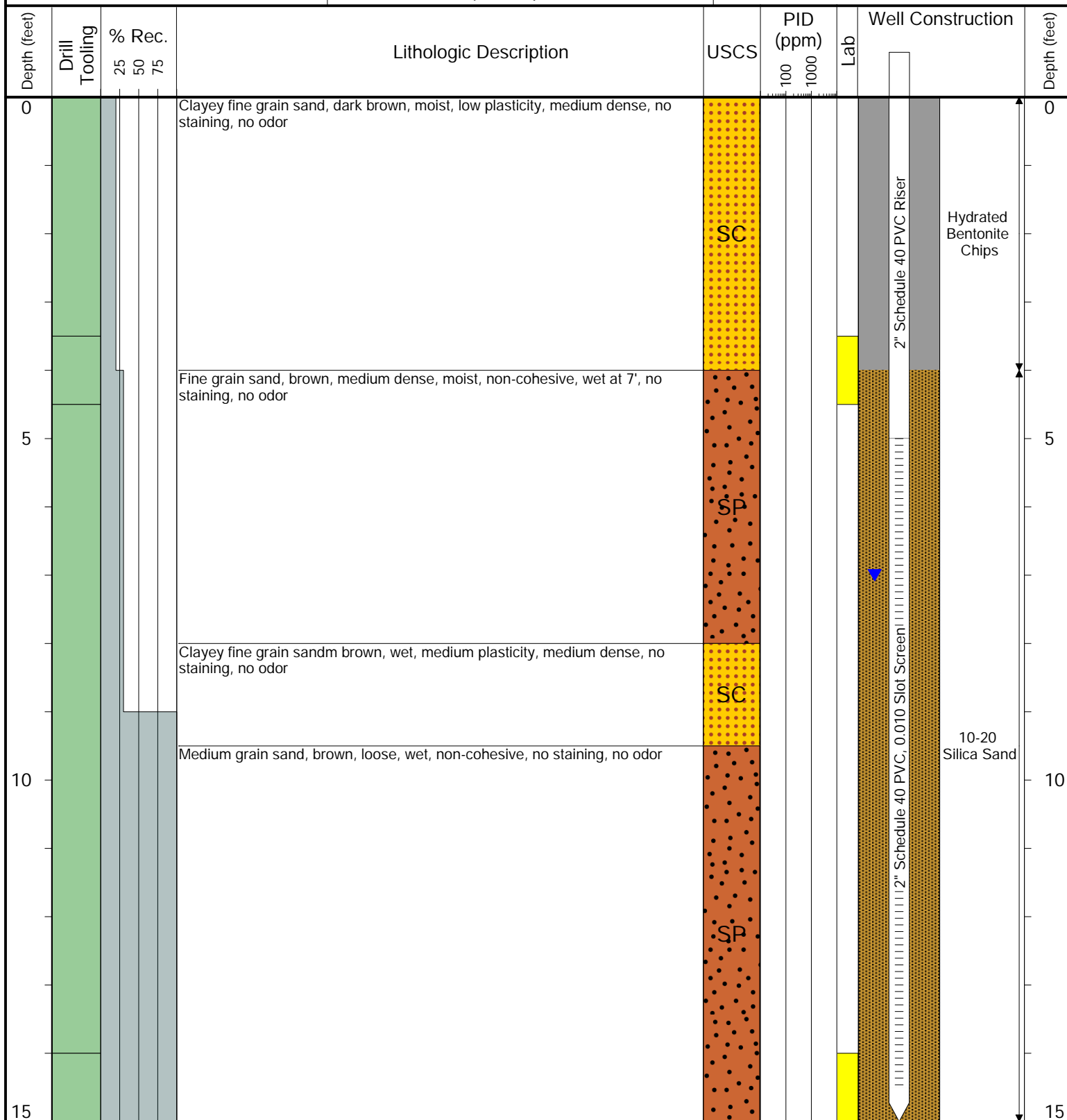
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218366891

LONGITUDE (NAD 83): -104.583616337

CASING ELEVATION (FT. AMSL): 4737.9

GROUND ELEVATION (FT. AMSL): 4738.19



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



# TASMAN

6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritneour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 05/31/23 - 05/31/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 7

Thompson D20-31D

BORING / WELL ID: BH13

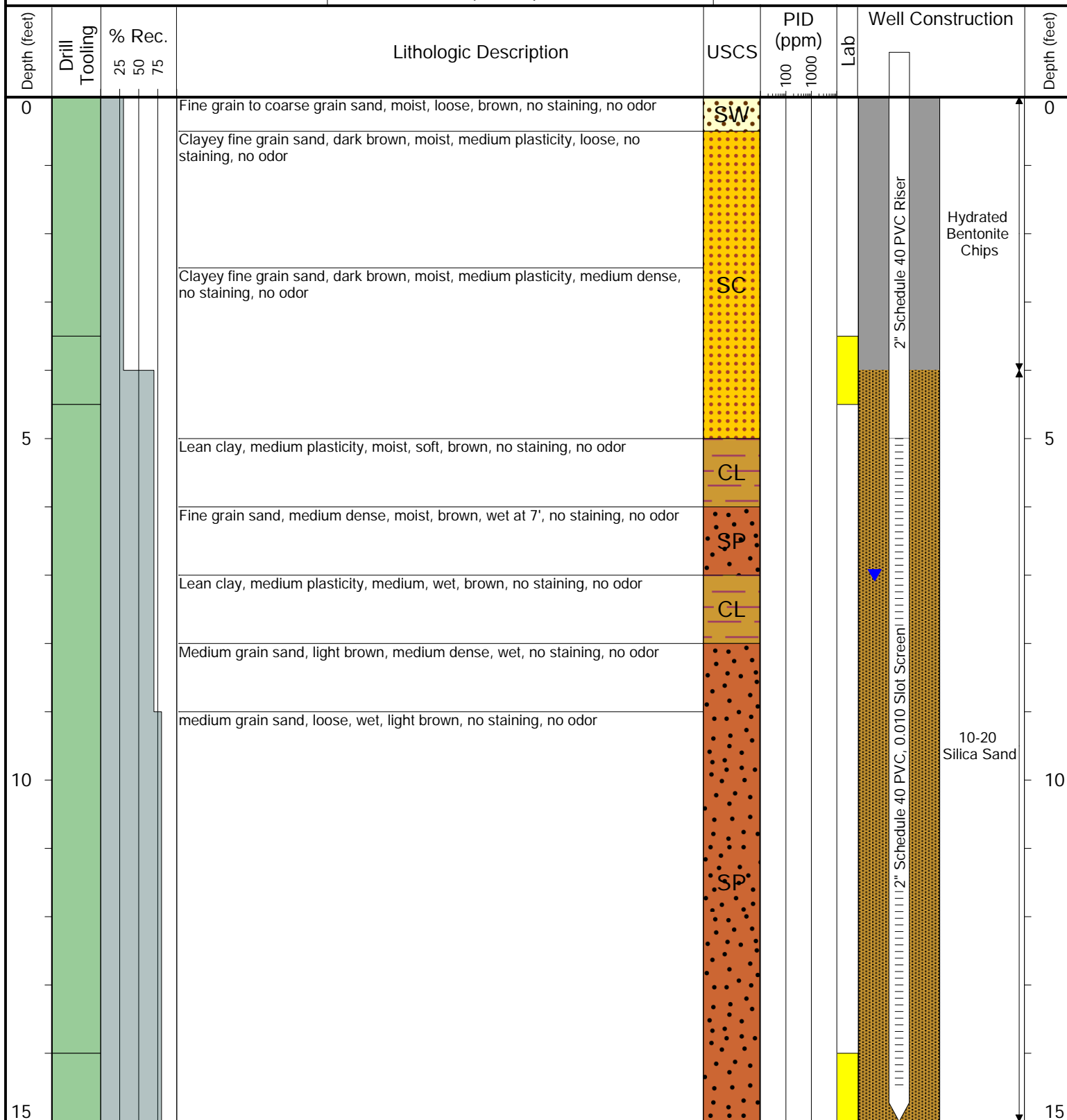
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.218386191

LONGITUDE (NAD 83): -104.583678222

CASING ELEVATION (FT. AMSL): 4742.5

GROUND ELEVATION (FT. AMSL): 4738.77



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

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.

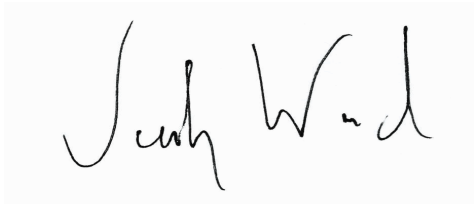
Broomfield, CO 80020

RE: Noble - Thompson D20-31D

Work Order #2306386

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 D20-31D

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2306386-01	Water	06/20/23 16:39	06/20/23 17:44
BH02	2306386-02	Water	06/20/23 15:02	06/20/23 17:44
BH03	2306386-03	Water	06/20/23 15:04	06/20/23 17:44
BH04	2306386-04	Water	06/20/23 15:20	06/20/23 17:44
BH05	2306386-05	Water	06/20/23 16:46	06/20/23 17:44
BH06	2306386-06	Water	06/20/23 15:21	06/20/23 17:44
BH07	2306386-07	Water	06/20/23 15:46	06/20/23 17:44
BH08	2306386-08	Water	06/20/23 15:48	06/20/23 17:44
BH09	2306386-09	Water	06/20/23 16:31	06/20/23 17:44
BH10	2306386-10	Water	06/20/23 16:01	06/20/23 17:44
BH11	2306386-11	Water	06/20/23 16:05	06/20/23 17:44
BH12	2306386-12	Water	06/20/23 16:13	06/20/23 17:44
BH13	2306386-13	Water	06/20/23 16:22	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.*



Client: Noble / Tasman Inc.		Send Data To:		Send Invoice To:	
Address: 6855 W. 119th. Ave.		Project Manager: Jake Whritenour		Company: Noble Energy, Inc.	
City/State/Zip: Broomfield / CO / 80020		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: Thompson 020-310	
Phone: 303-487-1228		Project Name: Thompson 020-310		AFE#:	
Sampler Name: Dalton Hagen		Project Number: N/A		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	BTEX	Naphthalene	1,2,4-TMB	1,3,5-TMB	TDS	Chloride	Sulfate	PAH		
1	BH01		1639	5	3		2		X				X	X	X	X	X	X	X	X		<u>PAH 1:54:</u> 1-MN, 2-MN
2	BH02		1502	1	1		1															
3	BH03		1504	5			5															
4	BH04		1520	1	3		2															
5	BH05		1646	1	1		1															
6	BH06		1521	5			5															
7	BH07		1546	5	3		2															
8	BH08		1548	1	1		1															
9	BH09		1631	1	1		1															
10	BH10		1601	1	1		1															
11	BH11		1605	1	1		1															
12	BH12		1613	1	1		1															
13	BH13		1622	1	1		1						1	1	1	1	1	1	1	1		
14																						
15																						

PAH list:  
1-MN, 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: 6/19/23 1744	Received by: 	Date/Time: 6/19/23 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: 8	IR gun #: 1	HNO3 lot #:			

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2306386Client: Noble Hasman Client Project ID: Thompson D20-31DShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input 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 # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> <b>NOTE:</b> 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? <sup>(1)</sup>	<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 <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample 10 vials labeled incorrectly
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)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

AB  
Custodian Printed Name

6/20/23  
Date/Time



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

Project: Noble - Thompson D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH01**  
**2306386-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 16:39**

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: **06/20/23 16:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	13.6	102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	14.4	108 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.2	99.3 %		21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 16:39**

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

Date Sampled: **06/20/23 16:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 2-Methylnaphthalene-d10	1.42	70.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.99	99.5 %		40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH01**  
**2306386-01 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 16:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	21.4	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
Sulfate	171	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 16:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	683	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH02**  
**2306386-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 15:02**

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: **06/20/23 15:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	14.2	106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.4	108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.9	96.5 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 15:02**

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

Date Sampled: **06/20/23 15:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.44	72.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.22	111 %	40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH02**  
**2306386-02 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 15:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	333	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
Sulfate	1420	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 15:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2530	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH03**  
**2306386-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 15:04**

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: **06/20/23 15:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.3	99.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.2	106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.0	97.8 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 15:04**

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

Date Sampled: **06/20/23 15:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.46	73.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.19	109 %	40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH03**  
**2306386-03 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 15:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>326</b>	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
<b>Sulfate</b>	<b>1220</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 15:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>2280</b>	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH04**  
**2306386-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 15:20**

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: **06/20/23 15:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	14.1	106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.2	107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.0	97.4 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 15:20**

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

Date Sampled: **06/20/23 15:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.36	67.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.97	98.4 %	40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH04**  
**2306386-04 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>295</b>	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
<b>Sulfate</b>	<b>1270</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>2350</b>	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH05**  
**2306386-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 16:46**

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: **06/20/23 16:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.5	101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.9	104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.4	100 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 16:46**

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

Date Sampled: **06/20/23 16:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.55	77.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.17	109 %	40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH05**  
**2306386-05 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 16:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>89.0</b>	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
<b>Sulfate</b>	<b>377</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 16:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>1110</b>	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH06**  
**2306386-06 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 15:21**

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: **06/20/23 15:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.4	100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.1	106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.0	97.7 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 15:21**

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

Date Sampled: **06/20/23 15:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.40	70.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.93	96.6 %	40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH06**  
**2306386-06 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 15:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>319</b>	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
Sulfate	<b>1400</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 15:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>2400</b>	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH07**  
**2306386-07 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 15:46**

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: **06/20/23 15:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.9	104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.2	106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.3	99.5 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 15:46**

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

Date Sampled: **06/20/23 15:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.52	76.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.08	104 %	40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH07**  
**2306386-07 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 15:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	53.2	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
Sulfate	239	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 15:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1080	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH08**  
**2306386-08 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 15:48**

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: **06/20/23 15:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.8	104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.9	104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.9	96.5 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 15:48**

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

Date Sampled: **06/20/23 15:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.52	76.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.12	106 %	40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH08**  
**2306386-08 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 15:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>330</b>	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
<b>Sulfate</b>	<b>1300</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 15:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>2430</b>	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH09**  
**2306386-09 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 16:31**

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: **06/20/23 16:31**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.5	102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.2	106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.0	97.3 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 16:31**

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

Date Sampled: **06/20/23 16:31**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.39	69.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.02	101 %	40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH09**  
**2306386-09 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 16:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>314</b>	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
<b>Sulfate</b>	<b>1500</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 16:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>2340</b>	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH10**  
**2306386-10 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 16:01**

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: **06/20/23 16:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.5	101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.9	104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.3	99.9 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 16:01**

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

Date Sampled: **06/20/23 16:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.51	75.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.31	116 %	40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH10**  
**2306386-10 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 16:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>388</b>	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
Sulfate	<b>1610</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 16:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>2750</b>	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH11**  
**2306386-11 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 16:05**

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: **06/20/23 16:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.7	103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.1	106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.0	97.8 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 16:05**

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

Date Sampled: **06/20/23 16:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.60	80.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.17	109 %	40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH11**  
**2306386-11 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 16:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>347</b>	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
Sulfate	<b>1290</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 16:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>2270</b>	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH12**  
**2306386-12 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 16:13**

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: **06/20/23 16:13**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.8	104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.3	107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.8	96.3 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 16:13**

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

Date Sampled: **06/20/23 16:13**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.43	71.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.91	95.3 %	40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH12**  
**2306386-12 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 16:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>297</b>	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
Sulfate	<b>1220</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 16:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>2260</b>	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH13**  
**2306386-13 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/20/23 16:22**

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: **06/20/23 16:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.8	103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.1	106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.6 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/20/23 16:22**

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

Date Sampled: **06/20/23 16:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.47	73.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.28	114 %	40-150		"	"	"	"	

**Anions by EPA Method 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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**BH13**  
**2306386-13 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **06/20/23 16:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>382</b>	12.0		mg/L	200	BGF0742	06/21/23	06/21/23	EPA 300.0	
Sulfate	<b>1560</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **06/20/23 16:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>2710</b>	10.0		mg/L	1	BGF0748	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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch 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			

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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

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

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

**Batch 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			

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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

## 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 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			

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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

### 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		

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 D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**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.*



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

Project: Noble - Thompson D20-31D  
Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

**Total Dissolved Solids by SM2540C - Quality Control**  
**Summit Scientific**

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

**Batch BGF0748 - General Preparation**

**Blank (BGF0748-BLK1)**

Prepared & Analyzed: 06/21/23

Total Dissolved Solids ND 10.0 mg/L

**Duplicate (BGF0748-DUP1)**

Source: 2306386-01

Prepared & Analyzed: 06/21/23

Total Dissolved Solids 692 10.0 mg/L 683 1.41 20

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 D20-31D

Project Number: UWRWE-A2800-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/26/23 08:13

### 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