

Wellhead Closure Checklist

COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form



Additional attachments (optional):		Pit Closure		Tank Battery Closure		Flowline Closure		Partially Buried Vault Closure
Site Name & COGCC Facility Number: Smith 21-05		Date: 8/19/2021						Remediation Project #: 17185
Associated Wells:		Age of Site:						Number of Photos Attached:
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple) 40.3453393, -104.4634420								Estimated Facility Size (acres):
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) Generally good condition								
USCS Soil Type: Clayey Sand - SC					Estimated Depth to Groundwater: >5'			
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) None observed								
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) None observed								
Wellhead(s)								
Well API	123-20864							
Age								
Condition of surface around wellhead	Good							
PID Readings	N/A							
Condition of subsurface (staining present)	No staining							
PID Readings	0.0 - 65.5							
Sample taken? Location/Sample ID#	See below							
Photo Number(s)	9							
Other observations regarding wellheads: Four sidewall samples were collected at 2.5' bgs (SS01-SS04@2.5'), one base sample was collected (FS01@5'), and two samples were collected below the flowline at the wellhead and the separator (FL01A@3' and FL01B@3')								
Summary								
Was impacted soil identified? <div style="display: flex; justify-content: space-around;">NoYes - less than 10 cubic yardsYes - more than 10 cubic yards</div>								
Total number of samples field screened: 9					Total number of samples collected: 6			
Highest PID Reading: 65.5					Total number of samples submitted to lab for analysis: 3			
If more than 10 cubic yards of impacted soil were observed:								
Vertical extent:					Estimated spill volume:			
Lateral extent:					Volume of soil removed:			
Is additional investigation required?								
Was groundwater encountered during the investigation? <div style="display: flex; justify-content: space-around;">NoYes - not impacted or in contact with impacted soilsYes - groundwater impacted and/or in contact with impacted soils</div>								
Measured depth to groundwater:					Was remedial groundwater removal conducted? Yes No			
Date Groundwater was encountered:					Commencement date of removal:			
Sheen on groundwater? Yes No					Volume of groundwater removed prior to sampling:			
Free product observed? Yes No					Volume of groundwater removed post sampling:			
Total number of samples collected:					Total Volume of groundwater removed:			
Total number of samples submitted to lab for analysis:								



Flowline Closure Checklist

COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form


Additional Attachments:		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure
Site Name & COGCC Facility Number: Smith 21-05		Date: 8/19/2021						Remediation Project #: 17185
Associated Wells:		Age of Site:						Number of Photos Attached: 2
Starting point: (GPS coordinates and descriptions) 40.3453796, -104.4633965								
End point: (GPS coordinates and descriptions) 40.3451308, -104.4637573								
USCS Soil Type: Clayey Sand - SC					Estimated Depth to Groundwater: >5'			
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) None observed, slightly elevated PID at separator end.								
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) None observed								
Flowlines								
Flowline type	oil/gas/water							
Depth	3'							
Age								
Length	~160'							
Construction Material	Steel							
Were flowlines pulled?	no							
Visual Integrity of lines								
Visual impacts if trenched								
PID Readings if trenched								
Sample taken? Location/Sample ID#	See below							
Photo Number(s)	2							
Other observations regarding on location flowlines: Samples were taken from the wellhead and separator ends (FL01A@3' and FL01B@3')								
Summary								
Was impacted soil identified? <input checked="" type="radio"/> No Yes - less than 10 cubic yards Yes - more than 10 cubic yards								
Total number of samples field screened:					Total number of samples collected:			
Highest PID Reading:					Total number of samples submitted to lab for analysis:			
If more than 10 cubic yards of impacted soil were observed:								
Vertical extent:					Estimated spill volume:			
Lateral extent:					Volume of soil removed:			
Is additional investigation required?								
Was groundwater encountered during the investigation? <input checked="" type="radio"/> No Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils								
Measured depth to groundwater:					Was remedial groundwater removal conducted? Yes No			
Date Groundwater was encountered:					Commencement date of removal:			
Sheen on groundwater? Yes No					Volume of groundwater removed prior to sampling:			
Free product observed? Yes No					Volume of groundwater removed post sampling:			
Total number of samples collected:					Total Volume of groundwater removed:			
Total number of samples submitted to lab for analysis:								

Photographic Log



					
Equipment ID: SS01 @2.5'		Equipment Type: Wellhead			
Material: Steel		Volume:		Contents: oil/gas/water	
Notes/Conditions: North sidewall sampled at 2.5'					

					
Equipment ID: SS02 @2.5'		Equipment Type: Wellhead			
Material: Steel		Volume:		Contents: oil/gas/water	
Notes/Conditions: East sidewall sampled at 2.5'					



Photographic Log


					
Equipment ID: SS03@2.5'		Equipment Type: Wellhead		Equipment ID: SS04@2.5'	
Material: Steel	Volume:	Contents: oil/gas/water		Material: Steel	Volume:
Notes/Conditions: South sidewall sampled at 2.5'			Notes/Conditions: West sidewall sampled at 2.5'		

Photographic Log

					
Equipment ID: FS01 @5'		Equipment Type: Wellhead		Equipment ID: FL01A @3'	
Material: Steel	Volume:	Contents: oil/gas/water	Material: Steel	Volume:	Contents: oil/gas/water
Notes/Conditions: Wellhead excavation base sample collected at 5'			Notes/Conditions: Wellhead flowline sample collected at 3'		

Photographic Log

					
Equipment ID:FL01B@3'		Equipment Type: Flowline			
Material: Steel		Volume:		Contents: oil/gas/water	
Notes/Conditions: Separator end flowline sample collected at 3'					

		
Equipment ID:NBG01		Equipment Type:
Material:		Volume:
Contents:		
Notes/Conditions: Background sample from North of wellhead excavation		

Photographic Log


							
Equipment ID:BG01		Equipment Type:NA		Equipment ID:		Equipment Type:	
Material:NA		Volume:NA	Contents:NA	Material:		Volume:	Contents:
Notes/Conditions: Smith 21-05, Photo of BG01 @3'				Notes/Conditions:			

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - SMITH 21-05

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
FL01B@3'	08/19/21	65.5	No Staining	No Odor	Lab	40.3451308	-104.4637573	NC
SS01@2.5'	08/19/21	0.5	No Staining	No Odor	Grab	40.3453923	-104.4634072	NC
SS02@2.5'	08/19/21	0.0	No Staining	No Odor	Grab	40.3454080	-104.4634063	NC
SS03@2.5'	08/19/21	1.9	No Staining	No Odor	Grab	40.3453807	-104.4633893	NC
SS04@2.5'	08/19/21	0.5	No Staining	No Odor	Grab	40.3453657	-104.4633965	NC
FS01@5'	08/19/21	55	No Staining	No Odor	Lab	40.3453670	-104.4634161	NC
FL01A@3'	08/19/21	1.5	No Staining	No Odor	Lab	40.3453796	-104.4633965	NC
BG01@5'	10/14/21	0.0	No Staining	No Odor	Lab	40.3451673	-104.4639312	0.9

Notes:

PID = Photo-ionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

NC = Not collected

1.) Latitude and longitude coordinates will be provided in decimal degrees with an accuracy and precision of 5 decimals of a degree using the North American Datum ("NAD") of 1983

TABLE 2
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - SMITH 21-05


Soil Sample ID	Date	¹ Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ²		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^{2,3}		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01B@3'	08/19/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	160	120	<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'	08/19/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
FL01A@3'	08/19/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL ²		6 - 8.3	<6	<4mmhos/cm	2
FL01B@3'	08/19/21	8.35	0.700	0.182	0.1650
FS01@5'	08/19/21	8.23	0.817	0.337	0.1280
FL01A@3'	08/19/21	8.18	0.824	0.180	0.0715
BG01@3'	10/14/21	7.95	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
 - SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:	
COGCC = Colorado Oil and Gas Conservation Commission	1,2,4 - TMB = 1,2,4 Trimethylbenzene
TPH-GRO = Total petroleum hydrocarbons - gasoline range organics	1,3,5 - TMB = 1,3,5 Trimethylbenzene
TPH-DRO = Total petroleum hydrocarbons - diesel range organics	Benz(a) = Benzanthracene
TPH-ORO = Total petroleum hydrocarbons - oil range organics	Benzo(b) = Benzofluoranthene
mg/kg = Milligrams per kilogram	Benzo(k) = Benzofluoranthene
SAR = Sodium Adsorption Ratio	Benzo(a) = Benzopyrene
EC = Electrical Conductivity	A,H = Dibenzoanthracene
mmhos/cm = Millmhos per centimeter	1,2,3-CD = Indenopyrene
mg/L = Milligrams per liter	1-M = 1-methylnaphthalene
< = Analytical result is less than the indicated laboratory reporting limit	2-M = 2-methylnaphthalene
Highlighted results are equal to or exceed the COGCC Table 915-1 standard	NA = Not Analyzed



DATE:	08/26/2021	 TASMAN GEOSCIENCES	Tasman Geosciences, Inc. 6855 W 119 th Avenue Broomfield, CO 80020	Noble Energy, Inc. – DJ Basin Smith 21-05 Wellhead NWNE, Section 5, Township 4 North, Range 63 West Weld County, Colorado	Wellhead Closure & Soil Analytical Results Map (08/19/2021)	FIGURE 2
DESIGNED BY:	JW					
DRAWN BY:	CA					

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 31, 2021

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Smith 21-05

Work Order #2108291

Enclosed are the results of analyses for samples received by Summit Scientific on 08/19/21 17:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premier For Paul Shrewsbury
President



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

Project: Noble - Smith 21-05

Project Number: 422119757 Task #247037

Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01B@3'	2108291-01	Soil	08/19/21 10:50	08/19/21 17:50
FS01@5'	2108291-02	Soil	08/19/21 11:10	08/19/21 17:50
FL01A@3'	2108291-03	Soil	08/19/21 11:15	08/19/21 17:50

Summit Scientific

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

Summit Scientific

S₂

2108291

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

Page 1 of 1

Client: Noble / Tasman Geosciences Project Manager: Jake Whritenour, Invoice: Wade Firestein
Address: 6855 W. 119th Ave. E-Mail: Jwhritenour@tasman-geo.com
City/State/Zip: Broomfield / CO/ 80020
Phone: 303-487-1228 Project Name: Smith 21-05
Sampler Name: Kilian Collins Project Number: 422119757 Test #: 247037

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	\$260 BTEX	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD		
1	FL01B@3'	8/17/21	1050	2			X			X				X	X	X	X	X			
2	FS01@5'		1110	2																	
3	FL01A@3'		1115	2																	
4	SS03@2.5'		1130	2															X		Hold all analytes
5	NB001@3'		1215	1															X		Hold all analytes
6	NB001@5'		1215	1															X		Hold all analytes
7																					
8																					
9																					
10																					

Relinquished by: <u>Kilian Collins</u> Date/Time: <u>8/17/21 1655</u>	Received by: <u>Tasman's Lock Box</u> Date/Time: _____	Turn Around Time (Check) Same Day _____ 72 hours 24 hours <u>X</u> Standard 48 hours _____ Sample Integrity: _____ Temperature Upon Receipt: <u>10</u> Samples Intact: <u>Yes</u> No	Notes:
Relinquished by: <u>Tasman's Lock Box</u> Date/Time: <u>8/19/21 1750</u>	Received by: <u>Wally Dali</u> Date/Time: <u>8/19/21 1750</u>		
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____		

2108291

Sample Receipt Checklist

S2 Work Order _____

Client: Noble/TASMAN Client Project ID: Smith 21-05Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____
☐ ☒ ☐ ☐ ☐
Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	<u>10</u>
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Thermometer ID: 61857155-K

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

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.WG
Custodian Printed Name or InitialsWill Hall
Signature of Custodian8/19/21
Date/Time



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

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

FL01B@3'
2108291-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/19/21 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEH0366	08/20/21	08/21/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/19/21 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		128 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		114 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/19/21 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	160	50	mg/kg	1	BEH0454	08/25/21	08/27/21	EPA 8015M	
C28-C36 (ORO)	120	50	"	"	"	"	"	"	

Date Sampled: **08/19/21 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		116 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

FL01B@3'
2108291-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/19/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEH0394	08/24/21	08/26/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **08/19/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/19/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.165	0.0100	mg/L	1	BEH0403	08/24/21	08/25/21	EPA 6020B	

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

Date Sampled: **08/19/21 10:50**

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

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

FL01B@3'
2108291-01 (Soil)

Summit Scientific

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

Calcium	19.0	0.0548	mg/L dry	1	BEH0407	08/24/21	08/26/21	EPA 6020B
Magnesium	4.82	0.0548	"	"	"	"	"	"
Sodium	13.2	0.0548	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **08/19/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.700	0.00100	units	1	BEH0527	08/30/21	08/30/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/19/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.2		%	1	BEH0484	08/26/21	08/28/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/19/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.182	0.0100	mmhos/cm	1	BEH0435	08/25/21	08/25/21	EPA 120.1	

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

Date Sampled: **08/19/21 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.35		pH Units	1	BEH0434	08/25/21	08/25/21	EPA 9045D	

Summit Scientific

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

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

FS01@5'
2108291-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/19/21 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEH0366	08/20/21	08/21/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/19/21 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/19/21 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEH0454	08/25/21	08/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/19/21 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

FS01@5'
2108291-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/19/21 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEH0394	08/24/21	08/26/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **08/19/21 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/19/21 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.128	0.0100	mg/L	1	BEH0403	08/24/21	08/25/21	EPA 6020B	

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

Date Sampled: **08/19/21 11:10**

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

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

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

FS01@5'
2108291-02 (Soil)

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

Calcium	26.1	0.0558	mg/L dry	1	BEH0407	08/24/21	08/26/21	EPA 6020B
Magnesium	6.76	0.0558	"	"	"	"	"	"
Sodium	18.1	0.0558	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **08/19/21 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.817	0.00100	units	1	BEH0527	08/30/21	08/30/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/19/21 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.6		%	1	BEH0484	08/26/21	08/28/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/19/21 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.337	0.0100	mmhos/cm	1	BEH0435	08/25/21	08/25/21	EPA 120.1	

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

Date Sampled: **08/19/21 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.23		pH Units	1	BEH0434	08/25/21	08/25/21	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

FL01A@3'
2108291-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/19/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEH0366	08/20/21	08/21/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/19/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/19/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEH0454	08/25/21	08/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/19/21 11:15**

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

PAH by EPA Method 8270D SIM

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

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

FL01A@3'
2108291-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/19/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEH0394	08/24/21	08/26/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **08/19/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		60.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/19/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0715	0.0100	mg/L	1	BEH0403	08/24/21	08/25/21	EPA 6020B	

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

Date Sampled: **08/19/21 11:15**

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

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

FL01A@3'
2108291-03 (Soil)

Summit Scientific

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

Calcium	13.4	0.0578	mg/L dry	1	BEH0407	08/24/21	08/26/21	EPA 6020B
Magnesium	4.05	0.0578	"	"	"	"	"	"
Sodium	13.4	0.0578	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **08/19/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.824	0.00100	units	1	BEH0527	08/30/21	08/30/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/19/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.5		%	1	BEH0484	08/26/21	08/28/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/19/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.180	0.0100	mmhos/cm	1	BEH0435	08/25/21	08/25/21	EPA 120.1	

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

Date Sampled: **08/19/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.18		pH Units	1	BEH0434	08/25/21	08/25/21	EPA 9045D	

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

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

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 BEH0366 - EPA 5030 Soil MS

Blank (BEH0366-BLK1)

Prepared & Analyzed: 08/20/21

Benzene	ND	0.0020	mg/kg
Toluene	ND	0.0050	"
Ethylbenzene	ND	0.0050	"
Xylenes (total)	ND	0.010	"
1,2,4-Trimethylbenzene	ND	0.0050	"
1,3,5-Trimethylbenzene	ND	0.0050	"
Naphthalene	ND	0.0038	"
Gasoline Range Hydrocarbons	ND	0.50	"

Surrogate: 1,2-Dichloroethane-d4	0.0435	"	0.0400	109	23-173
Surrogate: Toluene-d8	0.0424	"	0.0400	106	20-170
Surrogate: 4-Bromofluorobenzene	0.0429	"	0.0400	107	21-167

LCS (BEH0366-BS1)

Prepared & Analyzed: 08/20/21

Benzene	0.0710	0.0020	mg/kg	0.0750	94.6	70-130
Toluene	0.0845	0.0050	"	0.0750	113	70-130
Ethylbenzene	0.0870	0.0050	"	0.0750	116	70-130
m,p-Xylene	0.175	0.010	"	0.150	117	70-130
o-Xylene	0.0860	0.0050	"	0.0750	115	70-130
1,2,4-Trimethylbenzene	0.0901	0.0050	"	0.0750	120	70-130
1,3,5-Trimethylbenzene	0.0879	0.0050	"	0.0750	117	70-130
Naphthalene	0.0865	0.0038	"	0.0750	115	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0458	"	0.0400	114	23-173
Surrogate: Toluene-d8	0.0412	"	0.0400	103	20-170
Surrogate: 4-Bromofluorobenzene	0.0427	"	0.0400	107	21-167

Matrix Spike (BEH0366-MS1)

Source: 2108261-03

Prepared & Analyzed: 08/20/21

Benzene	0.0722	0.0020	mg/kg	0.0750	ND	96.3	70-130
Toluene	0.0877	0.0050	"	0.0750	ND	117	70-130
Ethylbenzene	0.0893	0.0050	"	0.0750	ND	119	70-130
m,p-Xylene	0.150	0.010	"	0.150	ND	100	70-130
o-Xylene	0.0881	0.0050	"	0.0750	ND	118	70-130
1,2,4-Trimethylbenzene	0.0938	0.0050	"	0.0750	ND	125	70-130
1,3,5-Trimethylbenzene	0.0916	0.0050	"	0.0750	ND	122	70-130
Naphthalene	0.0888	0.0038	"	0.0750	ND	118	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0435	"	0.0400	109	23-173
Surrogate: Toluene-d8	0.0418	"	0.0400	104	20-170
Surrogate: 4-Bromofluorobenzene	0.0413	"	0.0400	103	21-167

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

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 BEH0366 - EPA 5030 Soil MS

Matrix Spike Dup (BEH0366-MSD1)		Source: 2108261-03			Prepared & Analyzed: 08/20/21					
Benzene	0.0706	0.0020	mg/kg	0.0750	ND	94.2	70-130	2.23	30	
Toluene	0.0834	0.0050	"	0.0750	ND	111	70-130	5.05	30	
Ethylbenzene	0.0864	0.0050	"	0.0750	ND	115	70-130	3.35	30	
m,p-Xylene	0.143	0.010	"	0.150	ND	95.3	70-130	4.77	30	
o-Xylene	0.0856	0.0050	"	0.0750	ND	114	70-130	2.97	30	
1,2,4-Trimethylbenzene	0.0904	0.0050	"	0.0750	ND	121	70-130	3.68	30	
1,3,5-Trimethylbenzene	0.0877	0.0050	"	0.0750	ND	117	70-130	4.32	30	
Naphthalene	0.0880	0.0038	"	0.0750	ND	117	70-130	0.848	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0391		"	0.0400		97.7	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		104	21-167			

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

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 BEH0454 - EPA 3550A

Blank (BEH0454-BLK1)

Prepared: 08/25/21 Analyzed: 08/27/21

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

LCS (BEH0454-BS1)

Prepared: 08/25/21 Analyzed: 08/27/21

C10-C28 (DRO)	569	50	mg/kg	500	114	70-130
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Matrix Spike (BEH0454-MS1)

Source: 2108334-02

Prepared: 08/25/21 Analyzed: 08/27/21

C10-C28 (DRO)	516	50	mg/kg	500	12.9	101	70-130
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Matrix Spike Dup (BEH0454-MSD1)

Source: 2108334-02

Prepared: 08/25/21 Analyzed: 08/27/21

C10-C28 (DRO)	596	50	mg/kg	500	12.9	117	70-130	14.5	20
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

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 BEH0394 - EPA 5030 Soil MS

Blank (BEH0394-BLK1)

Prepared: 08/24/21 Analyzed: 08/26/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0244		"	0.0333		73.2	40-150			
Surrogate: Fluoranthene-d10	0.0237		"	0.0333		71.0	40-150			

LCS (BEH0394-BS1)

Prepared: 08/24/21 Analyzed: 08/26/21

Acenaphthene	0.0235	0.00500	mg/kg	0.0333		70.4	31-137			
Anthracene	0.0211	0.00500	"	0.0333		63.3	30-120			
Benzo (a) anthracene	0.0210	0.00500	"	0.0333		63.0	30-120			
Benzo (a) pyrene	0.0235	0.00500	"	0.0333		70.5	30-120			
Benzo (b) fluoranthene	0.0233	0.00500	"	0.0333		70.0	30-120			
Benzo (k) fluoranthene	0.0232	0.00500	"	0.0333		69.6	30-120			
Chrysene	0.0209	0.00500	"	0.0333		62.7	30-120			
Dibenz (a,h) anthracene	0.0196	0.00500	"	0.0333		58.9	30-120			
Fluoranthene	0.0185	0.00500	"	0.0333		55.6	30-120			
Fluorene	0.0237	0.00500	"	0.0333		71.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0207	0.00500	"	0.0333		62.0	30-120			
Pyrene	0.0178	0.00500	"	0.0333		53.3	35-142			
1-Methylnaphthalene	0.0202	0.00500	"	0.0333		60.6	35-142			
2-Methylnaphthalene	0.0196	0.00500	"	0.0333		58.7	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0222		"	0.0333		66.7	40-150			
Surrogate: Fluoranthene-d10	0.0193		"	0.0333		57.9	40-150			

Summit Scientific

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

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

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 BEH0394 - EPA 5030 Soil MS

Matrix Spike (BEH0394-MS1)

Source: 2108291-01

Prepared: 08/24/21 Analyzed: 08/26/21

Acenaphthene	0.0242	0.00500	mg/kg	0.0333	ND	72.6	31-137		
Anthracene	0.0224	0.00500	"	0.0333	ND	67.1	30-120		
Benzo (a) anthracene	0.0246	0.00500	"	0.0333	0.00345	63.4	30-120		
Benzo (a) pyrene	0.0249	0.00500	"	0.0333	ND	74.8	30-120		
Benzo (b) fluoranthene	0.0270	0.00500	"	0.0333	ND	80.9	30-120		
Benzo (k) fluoranthene	0.0269	0.00500	"	0.0333	ND	80.7	30-120		
Chrysene	0.0244	0.00500	"	0.0333	ND	73.3	30-120		
Dibenz (a,h) anthracene	0.0133	0.00500	"	0.0333	ND	39.8	30-120		
Fluoranthene	0.0203	0.00500	"	0.0333	ND	61.0	30-120		
Fluorene	0.0269	0.00500	"	0.0333	ND	80.6	30-120		
Indeno (1,2,3-cd) pyrene	0.0136	0.00500	"	0.0333	ND	40.8	30-120		
Pyrene	0.0237	0.00500	"	0.0333	ND	71.1	35-142		
1-Methylnaphthalene	0.0264	0.00500	"	0.0333	ND	79.1	15-130		
2-Methylnaphthalene	0.0194	0.00500	"	0.0333	ND	58.4	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0213		"	0.0333		63.8	40-150		
Surrogate: Fluoranthene-d10	0.0206		"	0.0333		61.9	40-150		

Matrix Spike Dup (BEH0394-MSD1)

Source: 2108291-01

Prepared: 08/24/21 Analyzed: 08/26/21

Acenaphthene	0.0243	0.00500	mg/kg	0.0333	ND	72.8	31-137	0.256	30
Anthracene	0.0185	0.00500	"	0.0333	ND	55.6	30-120	18.8	30
Benzo (a) anthracene	0.0214	0.00500	"	0.0333	0.00345	54.0	30-120	13.7	30
Benzo (a) pyrene	0.0223	0.00500	"	0.0333	ND	67.0	30-120	11.0	30
Benzo (b) fluoranthene	0.0247	0.00500	"	0.0333	ND	74.0	30-120	8.89	30
Benzo (k) fluoranthene	0.0247	0.00500	"	0.0333	ND	74.2	30-120	8.41	30
Chrysene	0.0214	0.00500	"	0.0333	ND	64.2	30-120	13.3	30
Dibenz (a,h) anthracene	0.0107	0.00500	"	0.0333	ND	32.1	30-120	21.4	30
Fluoranthene	0.0169	0.00500	"	0.0333	ND	50.8	30-120	18.2	30
Fluorene	0.0261	0.00500	"	0.0333	ND	78.2	30-120	3.05	30
Indeno (1,2,3-cd) pyrene	0.0109	0.00500	"	0.0333	ND	32.7	30-120	21.9	30
Pyrene	0.0252	0.00500	"	0.0333	ND	75.5	35-142	6.05	30
1-Methylnaphthalene	0.0304	0.00500	"	0.0333	ND	91.3	15-130	14.3	50
2-Methylnaphthalene	0.0195	0.00500	"	0.0333	ND	58.6	15-130	0.369	50
Surrogate: 2-Methylnaphthalene-d10	0.0183		"	0.0333		55.0	40-150		
Surrogate: Fluoranthene-d10	0.0169		"	0.0333		50.7	40-150		

Summit Scientific

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

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

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 BEH0403 - EPA 3050B

Blank (BEH0403-BLK1)

Prepared: 08/24/21 Analyzed: 08/25/21

Boron ND 0.0100 mg/L

LCS (BEH0403-BS1)

Prepared: 08/24/21 Analyzed: 08/25/21

Boron 4.90 0.0100 mg/L 5.00 98.1 80-120

Duplicate (BEH0403-DUP1)

Source: 2108285-01

Prepared: 08/24/21 Analyzed: 08/25/21

Boron 0.143 0.0100 mg/L 0.149 4.46 20

Matrix Spike (BEH0403-MS1)

Source: 2108285-01

Prepared: 08/24/21 Analyzed: 08/25/21

Boron 5.47 0.0100 mg/L 5.00 0.149 106 75-125

Matrix Spike Dup (BEH0403-MSD1)

Source: 2108285-01

Prepared: 08/24/21 Analyzed: 08/25/21

Boron 4.74 0.0100 mg/L 5.00 0.149 91.7 75-125 14.3 25

Summit Scientific

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

Project: Noble - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

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 BEH0407 - General Preparation

Blank (BEH0407-BLK1)

Prepared: 08/24/21 Analyzed: 08/26/21

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

LCS (BEH0407-BS1)

Prepared: 08/24/21 Analyzed: 08/26/21

Calcium	5.28	0.0500	mg/L wet	5.00	106	70-130
Magnesium	5.58	0.0500	"	5.00	112	70-130
Sodium	4.87	0.0500	"	5.00	97.4	70-130

Summit Scientific

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

Project: Noble - Smith 21-05

Project Number: 422119757 Task #247037

Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

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 BEH0484 - General Preparation

Duplicate (BEH0484-DUP1)		Source: 2108219-04		Prepared: 08/26/21 Analyzed: 08/28/21	
% Solids	93.5		%	93.5	0.00691 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 - Smith 21-05
Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

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 BEH0435 - General Preparation

Blank (BEH0435-BLK1)

Prepared & Analyzed: 08/25/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEH0435-BS1)

Prepared & Analyzed: 08/25/21

Specific Conductance (EC) 0.139 0.0100 mmhos/cm 0.150 92.7 90-110

Duplicate (BEH0435-DUP1)

Source: 2108234-01

Prepared & Analyzed: 08/25/21

Specific Conductance (EC) 3.78 0.0100 mmhos/cm 3.78 0.0529 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 - Smith 21-05

Project Number: 422119757 Task #247037

Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

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

Summit Scientific

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

Batch BEH0434 - General Preparation

LCS (BEH0434-BS1)

Prepared & Analyzed: 08/25/21

pH	9.22	pH Units	9.21	100	95-105
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Duplicate (BEH0434-DUP1)

Source: 2108285-01

Prepared & Analyzed: 08/25/21

pH	8.16	pH Units	8.15	0.123	20
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Summit Scientific

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



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

Project: Noble - Smith 21-05

Project Number: 422119757 Task #247037
Project Manager: Jacob Whritenour

Reported:
08/31/21 14:13

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

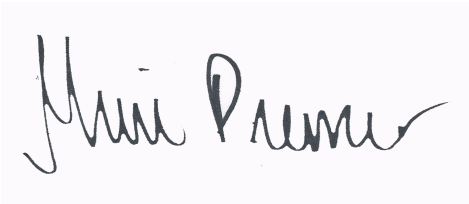
303.277.9310

October 22, 2021

Jacob Whritenour
Tasman Geosciences
6855 W. 119th Ave.
Broomfield, CO 80020
RE: Noble - Smith 21-05
Work Order #2110243

Enclosed are the results of analyses for samples received by Summit Scientific on 10/14/21 15:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premier For Paul Shrewsbury
President



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

Project: Noble - Smith 21-05

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
10/22/21 14:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BG01@3'	2110243-01	Soil	10/14/21 13:30	10/14/21 15:45

Summit Scientific

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

Summit Scientific

S₂



2110243

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

Page 1 of 1

Client: Noble / Tasman Geosciences Project Manager: Jake Whritenour, Invoice: Jacob Evans
Address: 6855 W. 119th Ave. E-Mail: Jwhritenour@tasman-geo.com
City/State/Zip: Broomfield / CO/ 80020
Phone: 303-487-1228 Project Name: Smith 21-05
Sampler Name: Daniel Qua Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD	pH	
1	BG0123'	10/14/21	1330	1			X			X											pH by saturated paste
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 10/14/21 1545	Received by: Tasman's Lock Box	Date/Time: 10/14/21 1545	Turn Around Time (Check) ___ Same Day 72 hours ___ 24 hours <input checked="" type="checkbox"/> Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: 11.1 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: 	Date/Time: 10.14.21 1545		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

2110243

Sample Receipt Checklist

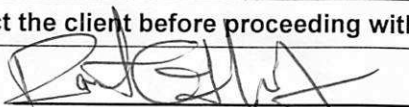
S2 Work Order# _____

Client: NOBLE/TASMAN Client Project ID: Smith 21-05Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other ☒ Airbill #: _____Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	<u>11.1</u>
-----------	-------------

Thermometer ID: G86A9201901378

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


 Custodian Printed Name or Initials

10.14.21
 Date/Time



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

Project: Noble - Smith 21-05

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
10/22/21 14:02

BG01@3'
2110243-01 (Soil)

Summit Scientific

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

Date Sampled: **10/14/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.95			pH Units	1	BEJ0283	10/15/21	10/15/21	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 - Smith 21-05

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
10/22/21 14:02

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

Summit Scientific

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

Batch BEJ0283 - General Preparation

LCS (BEJ0283-BS1)

Prepared & Analyzed: 10/15/21

pH	9.18	pH Units	9.18	100	95-105
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Duplicate (BEJ0283-DUP1)

Source: 2110241-01

Prepared & Analyzed: 10/15/21

pH	8.15	pH Units	8.10	0.615	20
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Summit Scientific

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



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

Project: Noble - Smith 21-05

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
10/22/21 14:02

Notes and Definitions

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