



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: Pedro State G36-20		Date: 7/7/2023, 7/12/2023				Remediation Project #: 28228		
Associated Wells:		Age of Site:				Number of Photos Attached: 17		
Starting point: (GPS coordinates and descriptions) 40.268877 / -104.612454								
End point: (GPS coordinates and descriptions) 40.268880 / -104.616373								
USCS Soil Type: SW					Estimated Depth to Groundwater:>4.5'			
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								
Flowlines								
Flowline type	Oil/Water/Gas							
Depth	4.5'							
Age	-							
Length	1180'							
Construction Material	Steel							
Were flowlines pulled?	Yes							
Visual Integrity of lines	Good							
Visual impacts if trenched	None observed							
PID Readings if trenched	0.0-0.9							
Sample taken? Location/Sample ID#	Yes, see below							
Photo Number(s)	1-13							
Other observations regarding on location flowlines: Samples were taken at the wellhead and the separator (FL01-A@4' & FL01-B@3' respectively); Samples were also taken at points where a direction change was observed (FL01-D@4.5' & FL01-M@4').								
Summary								
Was impacted soil identified? No								
Total number of samples field screened: 13					Total number of samples collected: 4			
Highest PID Reading: 0.9					Total number of samples submitted to lab for analysis: 4			
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? No								
Measured depth to groundwater:					Was remedial groundwater removal conducted?			
Date Groundwater was encountered:					Commencement date of removal:			
Sheen on groundwater?					Volume of groundwater removed prior to sampling:			
Free product observed?					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: FL01-A@4'		Equipment Type: Flowline		Equipment ID: FL01-C@4'		Equipment Type: Flowline	
Material: Steel	Volume:	Contents: Oil/Gas/Water		Material: Steel	Volume:	Contents: Oil/Gas/Water	
Notes/Conditions:				Notes/Conditions:			

Photographic Log

							
Equipment ID: FL01-D@4.5'		Equipment Type: Flowline		Equipment ID: FL01-E@4.5'		Equipment Type: Flowline	
Material: Steel		Volume:		Contents: Oil/Gas/Water		Material: Steel	
Volume:		Contents: Oil/Gas/Water		Volume:		Contents: Oil/Gas/Water	
Notes/Conditions:				Notes/Conditions:			



Photographic Log

							
Equipment ID: FL01-F@4'		Equipment Type: Flowline		Equipment ID: FL01-G@4'		Equipment Type: Flowline	
Material: Steel		Volume:		Contents: Oil/Gas/Water		Material: Steel	
Volume:		Contents: Oil/Gas/Water		Material: Steel		Volume:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log

					
Equipment ID: FL01-H@4'		Equipment Type: Flowline			
Material: Steel	Volume:	Contents: Oil/Gas/Water			
Notes/Conditions:			Notes/Conditions:		

Photographic Log

							
Equipment ID: FL01-J@4'		Equipment Type: Flowline		Equipment ID: FL01-K@4'		Equipment Type: Flowline	
Material: Steel		Volume:		Contents: Oil/Gas/Water		Material: Steel	
Volume:		Contents: Oil/Gas/Water		Material: Steel		Volume:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log


Equipment ID: FL0-L@4'

Equipment Type: Flowline

Material: Steel

Volume:
Contents: Oil/Gas/Water

Notes/Conditions:

Equipment ID: FL01-M@4'


Equipment Type: Flowline

Material: Steel

Volume:
Contents: Oil/Gas/Water

Notes/Conditions:

Photographic Log

									
						Equipment ID: FL01-B@3'		Equipment Type: Flowline	
						Material: Steel	Volume:	Contents: Oil/Gas/Water	
						Notes/Conditions:			

Photographic Log



Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: A point Facing East			



Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: B point Facing West			

Photographic Log

											
Equipment ID:			Equipment Type:			Equipment ID:			Equipment Type:		
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions: Flowline on the road Facing East						Notes/Conditions: Flowline on the road Facing West					

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - PEDRO STATE G36-20

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
FL01-A@4'	07/07/23	0.4	No Staining	No Odor	Lab	40.26888165	-104.6163505	0.8
FL01-B@3'	07/07/23	0.0	No Staining	No Odor	Lab	40.26855096	-104.6124604	0.8
FL01-C@4'	07/12/23	0.0	No Staining	No Odor	Grab	40.26873954	-104.6163537	0.9
FL01-D@4.5'	07/12/23	0.0	No Staining	No Odor	Lab	40.26861775	-104.6163343	0.9
FL01-E@4.5'	07/12/23	0.0	No Staining	No Odor	Grab	40.26861938	-104.6159919	0.9
FL01-F@4'	07/12/23	0.0	No Staining	No Odor	Grab	40.26862956	-104.6155739	0.9
FL01-G@4'	07/12/23	0.9	No Staining	No Odor	Grab	40.26863253	-104.6151940	0.9
FL01-H@4'	07/12/23	0.0	No Staining	No Odor	Grab	40.26862361	-104.6147677	0.9
FL01-I@4'	07/12/23	0.1	No Staining	No Odor	Grab	40.26863100	-104.6143650	0.8
FL01-J@4'	07/12/23	0.9	No Staining	No Odor	Grab	40.26865971	-104.6134234	1.0
FL01-K@4'	07/12/23	0.0	No Staining	No Odor	Grab	40.26863647	-104.6138983	0.9
FL01-L@4'	07/12/23	0.0	No Staining	No Odor	Grab	40.26865734	-104.6130906	0.8
FL01-M@4'	07/12/23	0.0	No Staining	No Odor	Lab	40.26863310	-104.6124523	0.9

Notes:

PID = Photoionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

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. - PEDRO STATE G36-20

Soil Sample ID	Date	¹ Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ²		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^{2,3}		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01-A@4'	07/07/23	<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
FL01-B@3'	07/07/23	<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
FL01-D@4.5'	07/12/23	<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	0.00903	<0.00500	<0.00500	0.00748	<0.00500	<0.00500
FL01-M@4'	07/12/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL ²		6 - 8.3	<6	<4mmhos/cm	2
FL01-A@4'	07/07/23	7.91	0.998	0.560	0.175
FL01-B@3'	07/07/23	7.74	0.0430	0.332	0.176
FL01-D@4.5'	07/12/23	8.06	1.92	0.643	0.239
FL01-M@4'	07/12/23	7.07	2.08	0.626	0.0415

Notes:

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

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

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

Definitions:

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

mmhos/cm = Millmhos per centimeter

mg/L = Milligrams per liter

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

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

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

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

Benz(a) = Benzo(a)anthracene

Benzo(b) = Benzo(b)fluoranthene

Benzo(k) = Benzo(k)fluoranthene

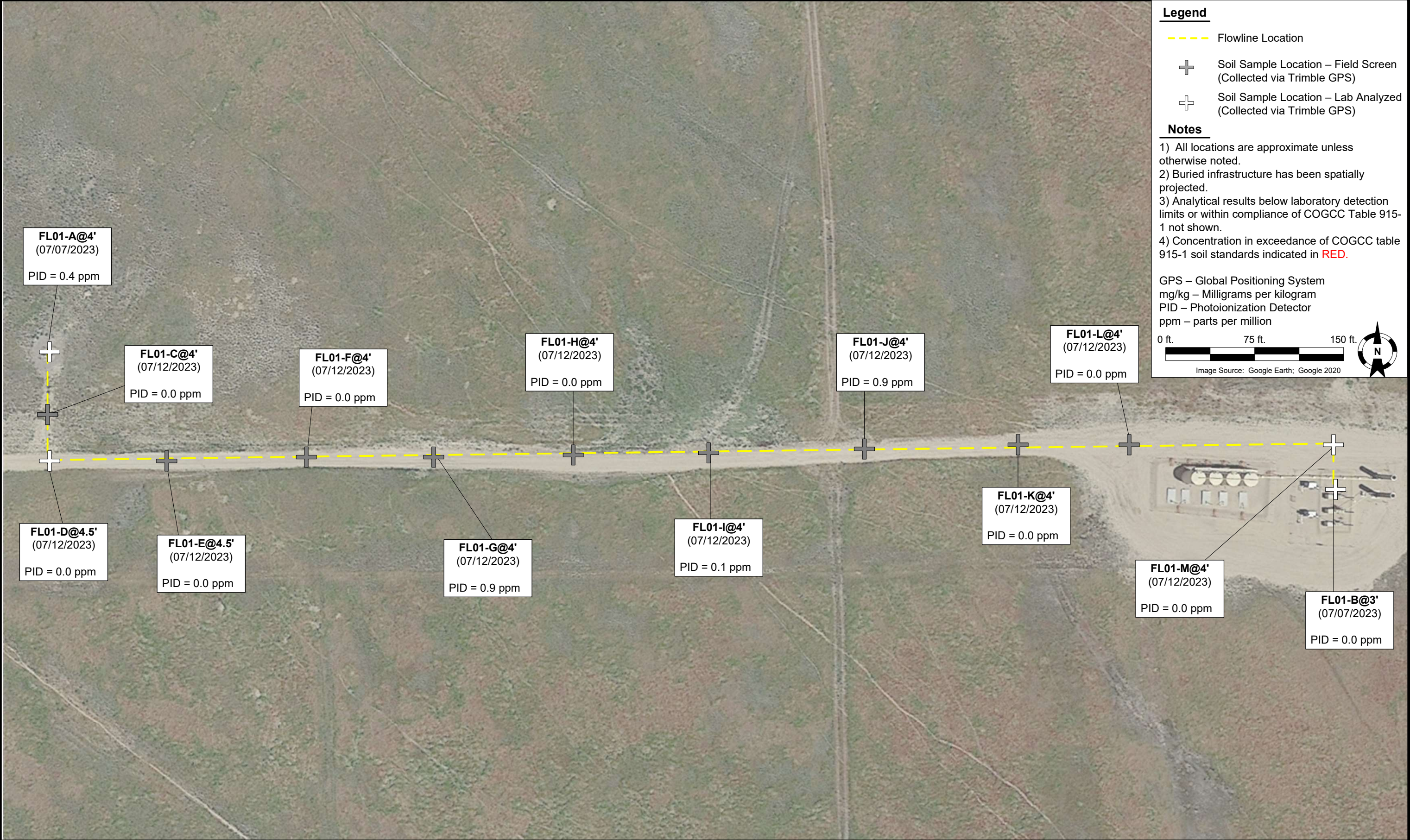
Benzo(a) = Benzo(a)pyrene

A,H = Dibenzo(a,h)anthracene

1,2,3-CD = Indeno(1,2,3-cd)pyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 19, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Pedro State G36-20

Work Order #2307130

Enclosed are the results of analyses for samples received by Summit Scientific on 07/07/23 17:33. 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 - Pedro State G36-20

Project Number: 28228

Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-A@4'	2307130-01	Soil	07/07/23 15:10	07/07/23 17:33
FL01-B@3'	2307130-02	Soil	07/07/23 14:50	07/07/23 17:33

Summit Scientific

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

Client: Noble/Tasman		Send Data To: Project Manager: Jake Whritenour		Send Invoice To:	
Address: 6855 W. 119th Ave.		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: Pedro State G 36-20	
City/State/Zip: Broomfield/CO/ 80020				AFE#:UWRWE-A3214-ABN	
Phone: 937-554-5108		Project Name: Pedro State G 36-20		PO/Billing Codes:	
Sampler Name: Molly Parks		Project Number: 28228		Contact:Wade Fierstein	

					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		SAR, EC, pH by saturated paste
1	FL01-A@4'	7/7/2023	1510	2			x			x				x	x	x	x	x			
2	FL01-B@3'	7/7/2023	1450	2			x			x				x	x	x	x	x			
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>MD</u>	Date/Time: <u>7-7-23 / 1646</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>7-7-23/1646</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>7-7-23 / 1733</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7-7-23 / 1733</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>12.5</u>		Corrected Temperature: <u>6</u>		IR gun #:	HNO3 lot #:	

S₂

Sample Receipt Checklist

S2 Work Order# 2307130Client: Noble/KrasmanClient Project ID: Pedro Stele G 30-20Shipped 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)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

7/7/23
Date/Time



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

Project: Noble - Pedro State G36-20

Project Number: 28228

Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

FL01-A@4'
2307130-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/07/23 15:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG0245	07/10/23	07/11/23	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: **07/07/23 15:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0398	99.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0407	102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0421	105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/07/23 15:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0246	07/10/23	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/07/23 15:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	17.2	137 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Pedro State G36-20
Project Number: 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

FL01-A@4'
2307130-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/07/23 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGG0265	07/11/23	07/11/23	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: **07/07/23 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0174	52.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0195	58.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/07/23 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.175	0.0100	mg/L	1	BGG0292	07/11/23	07/12/23	EPA 6020B	

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

Date Sampled: **07/07/23 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Pedro State G36-20

Project Number: 28228

Project Manager: Jacob Whritenour

Reported:

07/19/23 10:41

FL01-A@4'
2307130-01 (Soil)

Summit Scientific

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

Calcium	17.9	0.0567	mg/L dry	1	BGG0374	07/13/23	07/17/23	EPA 6020B
Magnesium	7.06	0.0567	"	"	"	"	"	"
Sodium	19.7	0.0567	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **07/07/23 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.998	0.00100	units	1	BGG0507	07/17/23	07/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/07/23 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.2		%	1	BGG0273	07/11/23	07/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/07/23 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.560	0.0100	mmhos/cm	1	BGG0420	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/07/23 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.91		pH Units	1	BGG0419	07/14/23	07/14/23	EPA 9045D	

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

Project: Noble - Pedro State G36-20

Project Number: 28228

Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

FL01-B@3'
2307130-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/07/23 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0245	07/10/23	07/11/23	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: **07/07/23 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0350	87.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0382	95.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0395	98.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/07/23 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0246	07/10/23	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/07/23 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.2	122 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Broomfield CO, 80020

Project: Noble - Pedro State G36-20
Project Number: 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

FL01-B@3'
2307130-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/07/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0265	07/11/23	07/11/23	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: **07/07/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0175	52.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0191	57.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/07/23 14:50**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.176	0.0100	mg/L	1	BGG0292	07/11/23	07/12/23	EPA 6020B	

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

Date Sampled: **07/07/23 14:50**

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

Project: Noble - Pedro State G36-20

Project Number: 28228

Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

FL01-B@3'
2307130-02 (Soil)

Summit Scientific

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

Calcium	322	0.0573	mg/L dry	1	BGG0374	07/13/23	07/17/23	EPA 6020B
Magnesium	34.9	0.0573	"	"	"	"	"	"
Sodium	3.04	0.0573	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **07/07/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0430	0.00100	units	1	BGG0507	07/17/23	07/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/07/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.3		%	1	BGG0273	07/11/23	07/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/07/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.332	0.0100	mmhos/cm	1	BGG0420	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/07/23 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.74		pH Units	1	BGG0419	07/14/23	07/14/23	EPA 9045D	

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Project: Noble - Pedro State G36-20

Project Number: 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

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 BGG0245 - EPA 5030 Soil MS

Blank (BGG0245-BLK1)

Prepared & Analyzed: 07/10/23

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	0.0361		"	0.0400		90.2	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.6	50-150			

LCS (BGG0245-BS1)

Prepared & Analyzed: 07/10/23

Benzene	0.0575	0.0020	mg/kg	0.0750		76.7	70-130			
Toluene	0.0750	0.0050	"	0.0750		100	70-130			
Ethylbenzene	0.0852	0.0050	"	0.0750		114	70-130			
m,p-Xylene	0.169	0.010	"	0.150		113	70-130			
o-Xylene	0.0801	0.0050	"	0.0750		107	70-130			
1,2,4-Trimethylbenzene	0.0826	0.0050	"	0.0750		110	70-130			
1,3,5-Trimethylbenzene	0.0857	0.0050	"	0.0750		114	70-130			
Naphthalene	0.0706	0.0038	"	0.0750		94.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0377		"	0.0400		94.4	50-150			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	50-150			

Matrix Spike (BGG0245-MS1)

Source: 2307083-01

Prepared & Analyzed: 07/10/23

Benzene	0.0590	0.0020	mg/kg	0.0750	ND	78.6	70-130			
Toluene	0.0784	0.0050	"	0.0750	ND	104	70-130			
Ethylbenzene	0.0926	0.0050	"	0.0750	ND	123	70-130			
m,p-Xylene	0.182	0.010	"	0.150	ND	121	70-130			
o-Xylene	0.0837	0.0050	"	0.0750	ND	112	70-130			
1,2,4-Trimethylbenzene	0.0870	0.0050	"	0.0750	ND	116	70-130			
1,3,5-Trimethylbenzene	0.0907	0.0050	"	0.0750	ND	121	70-130			
Naphthalene	0.0719	0.0038	"	0.0750	ND	95.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0370		"	0.0400		92.5	50-150			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	50-150			

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Project: Noble - Pedro State G36-20
Project Number: 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

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 BGG0245 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0245-MSD1)		Source: 2307083-01			Prepared & Analyzed: 07/10/23					
Benzene	0.0590	0.0020	mg/kg	0.0750	ND	78.6	70-130	0.0509	30	
Toluene	0.0754	0.0050	"	0.0750	ND	101	70-130	3.86	30	
Ethylbenzene	0.0926	0.0050	"	0.0750	ND	123	70-130	0.0324	30	
m,p-Xylene	0.182	0.010	"	0.150	ND	121	70-130	0.231	30	
o-Xylene	0.0846	0.0050	"	0.0750	ND	113	70-130	1.07	30	
1,2,4-Trimethylbenzene	0.0867	0.0050	"	0.0750	ND	116	70-130	0.345	30	
1,3,5-Trimethylbenzene	0.0893	0.0050	"	0.0750	ND	119	70-130	1.50	30	
Naphthalene	0.0758	0.0038	"	0.0750	ND	101	70-130	5.24	30	
Surrogate: 1,2-Dichloroethane-d4		0.0352	"	0.0400		88.0	50-150			
Surrogate: Toluene-d8		0.0380	"	0.0400		95.1	50-150			
Surrogate: 4-Bromofluorobenzene		0.0386	"	0.0400		96.4	50-150			

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Project: Noble - Pedro State G36-20
Project Number: 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

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 BGG0246 - EPA 3550A

Blank (BGG0246-BLK1)

Prepared & Analyzed: 07/10/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	17.3		"	12.5		138	30-150			

LCS (BGG0246-BS1)

Prepared & Analyzed: 07/10/23

C10-C28 (DRO)	585	50	mg/kg	500		117	70-130			
Surrogate: o-Terphenyl	15.8		"	12.5		126	30-150			

Matrix Spike (BGG0246-MS1)

Source: 2307083-01

Prepared & Analyzed: 07/10/23

C10-C28 (DRO)	645	50	mg/kg	500	9.66	127	70-130			
Surrogate: o-Terphenyl	16.1		"	12.5		129	30-150			

Matrix Spike Dup (BGG0246-MSD1)

Source: 2307083-01

Prepared & Analyzed: 07/10/23

C10-C28 (DRO)	635	50	mg/kg	500	9.66	125	70-130	1.54	20	
Surrogate: o-Terphenyl	15.6		"	12.5		125	30-150			

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Project: Noble - Pedro State G36-20
Project Number: 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

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 BGG0265 - EPA 5030 Soil MS

Blank (BGG0265-BLK1)

Prepared & Analyzed: 07/11/23

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	0.0306		"	0.0333		91.7	40-150			
Surrogate: Fluoranthene-d10	0.0360		"	0.0333		108	40-150			

LCS (BGG0265-BS1)

Prepared & Analyzed: 07/11/23

Acenaphthene	0.0340	0.00500	mg/kg	0.0333		102	31-137			
Anthracene	0.0335	0.00500	"	0.0333		101	30-120			
Benzo (a) anthracene	0.0352	0.00500	"	0.0333		106	30-120			
Benzo (a) pyrene	0.0322	0.00500	"	0.0333		96.5	30-120			
Benzo (b) fluoranthene	0.0341	0.00500	"	0.0333		102	30-120			
Benzo (k) fluoranthene	0.0332	0.00500	"	0.0333		99.6	30-120			
Chrysene	0.0339	0.00500	"	0.0333		102	30-120			
Dibenz (a,h) anthracene	0.0313	0.00500	"	0.0333		93.8	30-120			
Fluoranthene	0.0343	0.00500	"	0.0333		103	30-120			
Fluorene	0.0335	0.00500	"	0.0333		101	30-120			
Indeno (1,2,3-cd) pyrene	0.0247	0.00500	"	0.0333		74.0	30-120			
Pyrene	0.0352	0.00500	"	0.0333		106	35-142			
1-Methylnaphthalene	0.0308	0.00500	"	0.0333		92.3	35-142			
2-Methylnaphthalene	0.0355	0.00500	"	0.0333		106	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0313		"	0.0333		94.0	40-150			
Surrogate: Fluoranthene-d10	0.0399		"	0.0333		120	40-150			

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Project: Noble - Pedro State G36-20
Project Number: 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

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 BGG0265 - EPA 5030 Soil MS

Matrix Spike (BGG0265-MS1)			Source: 2306563-01			Prepared & Analyzed: 07/11/23					
Acenaphthene	0.0244	0.00500	mg/kg	0.0333	ND	73.2	31-137				
Anthracene	0.0236	0.00500	"	0.0333	ND	70.7	30-120				
Benzo (a) anthracene	0.0256	0.00500	"	0.0333	ND	76.9	30-120				
Benzo (a) pyrene	0.0225	0.00500	"	0.0333	ND	67.5	30-120				
Benzo (b) fluoranthene	0.0246	0.00500	"	0.0333	ND	73.8	30-120				
Benzo (k) fluoranthene	0.0242	0.00500	"	0.0333	ND	72.6	30-120				
Chrysene	0.0244	0.00500	"	0.0333	ND	73.1	30-120				
Dibenz (a,h) anthracene	0.0222	0.00500	"	0.0333	ND	66.6	30-120				
Fluoranthene	0.0243	0.00500	"	0.0333	ND	72.8	30-120				
Fluorene	0.0241	0.00500	"	0.0333	ND	72.2	30-120				
Indeno (1,2,3-cd) pyrene	0.0170	0.00500	"	0.0333	ND	50.9	30-120				
Pyrene	0.0262	0.00500	"	0.0333	ND	78.5	35-142				
1-Methylnaphthalene	0.0218	0.00500	"	0.0333	ND	65.3	15-130				
2-Methylnaphthalene	0.0247	0.00500	"	0.0333	ND	74.0	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0230		"	0.0333		69.0	40-150				
Surrogate: Fluoranthene-d10	0.0285		"	0.0333		85.5	40-150				

Matrix Spike Dup (BGG0265-MSD1)			Source: 2306563-01			Prepared & Analyzed: 07/11/23					
Acenaphthene	0.0222	0.00500	mg/kg	0.0333	ND	66.7	31-137	9.21	30		
Anthracene	0.0217	0.00500	"	0.0333	ND	65.0	30-120	8.36	30		
Benzo (a) anthracene	0.0237	0.00500	"	0.0333	ND	71.0	30-120	7.89	30		
Benzo (a) pyrene	0.0206	0.00500	"	0.0333	ND	61.9	30-120	8.58	30		
Benzo (b) fluoranthene	0.0219	0.00500	"	0.0333	ND	65.6	30-120	11.9	30		
Benzo (k) fluoranthene	0.0217	0.00500	"	0.0333	ND	65.2	30-120	10.8	30		
Chrysene	0.0219	0.00500	"	0.0333	ND	65.7	30-120	10.7	30		
Dibenz (a,h) anthracene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	11.9	30		
Fluoranthene	0.0221	0.00500	"	0.0333	ND	66.2	30-120	9.50	30		
Fluorene	0.0219	0.00500	"	0.0333	ND	65.7	30-120	9.46	30		
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.2	30-120	9.66	30		
Pyrene	0.0236	0.00500	"	0.0333	ND	70.7	35-142	10.4	30		
1-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.4	15-130	2.95	50		
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	63.0	15-130	16.1	50		
Surrogate: 2-Methylnaphthalene-d10	0.0235		"	0.0333		70.5	40-150				
Surrogate: Fluoranthene-d10	0.0258		"	0.0333		77.5	40-150				

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

Project: Noble - Pedro State G36-20

Project Number: 28228

Project Manager: Jacob Whritenour

Reported:

07/19/23 10:41

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 BGG0292 - EPA 3050B

Blank (BGG0292-BLK1)

Prepared: 07/11/23 Analyzed: 07/12/23

Boron ND 0.0100 mg/L

LCS (BGG0292-BS1)

Prepared: 07/11/23 Analyzed: 07/12/23

Boron 4.59 0.0100 mg/L 5.00 91.7 80-120

Duplicate (BGG0292-DUP1)

Source: 2307126-01

Prepared: 07/11/23 Analyzed: 07/12/23

Boron 0.187 0.0100 mg/L 0.110 51.6 20 QR-03

Matrix Spike (BGG0292-MS1)

Source: 2307126-01

Prepared: 07/11/23 Analyzed: 07/12/23

Boron 5.25 0.0100 mg/L 5.00 0.110 103 75-125

Matrix Spike Dup (BGG0292-MSD1)

Source: 2307126-01

Prepared: 07/11/23 Analyzed: 07/12/23

Boron 5.33 0.0100 mg/L 5.00 0.110 104 75-125 1.57 25

Summit Scientific

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

Project: Noble - Pedro State G36-20

Project Number: 28228

Project Manager: Jacob Whritenour

Reported:

07/19/23 10:41

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 BGG0374 - General Preparation

Blank (BGG0374-BLK1)

Prepared: 07/13/23 Analyzed: 07/17/23

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

LCS (BGG0374-BS1)

Prepared: 07/13/23 Analyzed: 07/17/23

Calcium	4.88	0.0500	mg/L wet	5.00	97.6	70-130
Magnesium	5.18	0.0500	"	5.00	104	70-130
Sodium	5.12	0.0500	"	5.00	102	70-130

Summit Scientific

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

Project: Noble - Pedro State G36-20

Project Number: 28228

Project Manager: Jacob Whritenour

Reported:

07/19/23 10:41

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 BGG0273 - General Preparation

Duplicate (BGG0273-DUP1)

Source: 2307125-01

Prepared & Analyzed: 07/11/23

% Solids	85.6	%	85.3	0.345	20
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Summit Scientific

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

Project: Noble - Pedro State G36-20

Project Number: 28228

Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

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 BGG0420 - General Preparation

Blank (BGG0420-BLK1)

Prepared & Analyzed: 07/14/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0420-BS1)

Prepared & Analyzed: 07/14/23

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BGG0420-DUP1)

Source: 2306557-05

Prepared & Analyzed: 07/14/23

Specific Conductance (EC) 0.906 0.0100 mmhos/cm 0.919 1.40 20

Summit Scientific

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

Project: Noble - Pedro State G36-20

Project Number: 28228

Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

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

Summit Scientific

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

Batch BGG0419 - General Preparation

LCS (BGG0419-BS1)

Prepared & Analyzed: 07/14/23

pH	9.09	pH Units	9.18	99.0	95-105
----	------	----------	------	------	--------

Duplicate (BGG0419-DUP1)

Source: 2306557-05

Prepared & Analyzed: 07/14/23

pH	6.35	pH Units	6.39	0.628	20
----	------	----------	------	-------	----

Summit Scientific

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

Project: Noble - Pedro State G36-20

Project Number: 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 10:41

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 19, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Pedro State G36-20

Work Order #2307206

Enclosed are the results of analyses for samples received by Summit Scientific on 07/12/23 17:28. 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 - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-D@4.5'	2307206-01	Soil	07/12/23 00:00	07/12/23 17:28
FL01-M@4'	2307206-02	Soil	07/12/23 11:27	07/12/23 17:28

Case Narrative

Dale Brokaw confirmed that FL01-M@4' was collected on 7/12/2023.

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.

		Send Data To:	Send Invoice To:
Client: Noble/Tasman		Project Manager: Jake Whritenour	
Address: 6855 W. 119th Ave.		E-Mail: Jwhritenour@tasman-geo.com	
City/State/Zip: Broomfield/CO/ 80020		Project Name/Location: Pedro State G36-20	
Phone: 937-554-5108		AFE: UWRWE-A3214-ABN	
Sampler Name: Molly Parks		PO/Billing Codes:	
		Contact: Wade Firestein	

					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				SAR, EC, pH by saturated paste
1	FL01-D@4.5'	7/12/2023	0:00	2			X			X				X	X	X	X	X					
2	FL01-M@4'	7/10/2023	1127	2			X			X				X	X	X	X	X					
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							

Relinquished by: <i>MP</i>	Date/Time: 7/12/23-1332	Received by: Tasman Lock Box	Date/Time: 7-12-23 11332	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: 7/12/23 1728	Received by: <i>[Signature]</i>	Date/Time: 7/12/23 1728	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: 8-8	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2307206Client: Nodeltasman Client Project ID: Pedro State G 36-20Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

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

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.8Thermometer # 1

	Yes	No	N/A	Comments (If any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (If any):

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

 Custodian Printed Name

7/12/23
 Date/Time

28



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

Project: Noble - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

FL01-D@4.5'
2307206-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0441	07/14/23	07/15/23	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: **07/12/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0403	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0386	96.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0445	07/14/23	07/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.0	88.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

FL01-D@4.5'
2307206-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0370	07/13/23	07/14/23	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	0.00903	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.00748	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0188	56.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0219	65.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.239	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/12/23 00:00**

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

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

Project: Noble - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

FL01-D@4.5'
2307206-01 (Soil)

Summit Scientific

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

Calcium	17.2	0.0541	mg/L dry	1	BGG0431	07/14/23	07/19/23	EPA 6020B
Magnesium	14.8	0.0541	"	"	"	"	"	"
Sodium	65.3	0.0541	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.92	0.00100	units	1	BGG0566	07/19/23	07/19/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.4		%	1	BGG0379	07/13/23	07/13/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/12/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.643	0.0100	mmhos/cm	1	BGG0505	07/17/23	07/17/23	EPA 120.1	

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

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.06		pH Units	1	BGG0504	07/17/23	07/17/23	EPA 9045D	

Summit Scientific



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

Project: Noble - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

FL01-M@4'
2307206-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/12/23 11:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0441	07/14/23	07/15/23	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: **07/12/23 11:27**

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	0.0380	95.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0391	97.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/12/23 11:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0445	07/14/23	07/15/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/12/23 11:27**

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

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

Project: Noble - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

FL01-M@4'
2307206-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/12/23 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0370	07/13/23	07/14/23	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: **07/12/23 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0136	40.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0157	47.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/12/23 11:27**

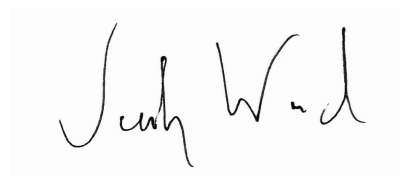
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0415	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/12/23 11:27**

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



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



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

Project: Noble - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

FL01-M@4'
2307206-02 (Soil)

Summit Scientific

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

Calcium	77.1	0.0572	mg/L dry	1	BGG0431	07/14/23	07/19/23	EPA 6020B
Magnesium	14.0	0.0572	"	"	"	"	"	"
Sodium	12.2	0.0572	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **07/12/23 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.08	0.00100	units	1	BGG0566	07/19/23	07/19/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/12/23 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.4		%	1	BGG0379	07/13/23	07/13/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/12/23 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.626	0.0100	mmhos/cm	1	BGG0505	07/17/23	07/17/23	EPA 120.1	

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

Date Sampled: **07/12/23 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.07		pH Units	1	BGG0504	07/17/23	07/17/23	EPA 9045D	

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

Project: Noble - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

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 BGG0441 - EPA 5030 Soil MS

Blank (BGG0441-BLK1)

Prepared: 07/14/23 Analyzed: 07/15/23

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	0.0376		"	0.0400		94.0	50-150			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.7	50-150			

LCS (BGG0441-BS1)

Prepared: 07/14/23 Analyzed: 07/15/23

Benzene	0.0666	0.0020	mg/kg	0.0750		88.8	70-130			
Toluene	0.0809	0.0050	"	0.0750		108	70-130			
Ethylbenzene	0.0852	0.0050	"	0.0750		114	70-130			
m,p-Xylene	0.167	0.010	"	0.150		111	70-130			
o-Xylene	0.0791	0.0050	"	0.0750		105	70-130			
1,2,4-Trimethylbenzene	0.0774	0.0050	"	0.0750		103	70-130			
1,3,5-Trimethylbenzene	0.0816	0.0050	"	0.0750		109	70-130			
Naphthalene	0.0677	0.0038	"	0.0750		90.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0380		"	0.0400		94.9	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	50-150			

Matrix Spike (BGG0441-MS1)

Source: 2307206-01

Prepared: 07/14/23 Analyzed: 07/15/23

Benzene	0.0678	0.0020	mg/kg	0.0750	ND	90.4	70-130			
Toluene	0.0829	0.0050	"	0.0750	ND	110	70-130			
Ethylbenzene	0.0860	0.0050	"	0.0750	ND	115	70-130			
m,p-Xylene	0.168	0.010	"	0.150	ND	112	70-130			
o-Xylene	0.0786	0.0050	"	0.0750	ND	105	70-130			
1,2,4-Trimethylbenzene	0.0786	0.0050	"	0.0750	ND	105	70-130			
1,3,5-Trimethylbenzene	0.0813	0.0050	"	0.0750	ND	108	70-130			
Naphthalene	0.0715	0.0038	"	0.0750	ND	95.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0397		"	0.0400		99.2	50-150			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	50-150			

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Project: Noble - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

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 BGG0441 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0441-MSD1)	Source: 2307206-01			Prepared: 07/14/23 Analyzed: 07/15/23						
Benzene	0.0783	0.0020	mg/kg	0.0750	ND	104	70-130	14.5	30	
Toluene	0.0705	0.0050	"	0.0750	ND	94.0	70-130	16.2	30	
Ethylbenzene	0.0781	0.0050	"	0.0750	ND	104	70-130	9.62	30	
m,p-Xylene	0.152	0.010	"	0.150	ND	101	70-130	9.75	30	
o-Xylene	0.0747	0.0050	"	0.0750	ND	99.6	70-130	5.13	30	
1,2,4-Trimethylbenzene	0.0819	0.0050	"	0.0750	ND	109	70-130	4.07	30	
1,3,5-Trimethylbenzene	0.0768	0.0050	"	0.0750	ND	102	70-130	5.69	30	
Naphthalene	0.0791	0.0038	"	0.0750	ND	106	70-130	10.2	30	
Surrogate: 1,2-Dichloroethane-d4	0.0379		"	0.0400		94.7	50-150			
Surrogate: Toluene-d8	0.0385		"	0.0400		96.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.3	50-150			

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Project: Noble - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

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 BGG0445 - EPA 3550A

Blank (BGG0445-BLK1)

Prepared & Analyzed: 07/14/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.6		"	12.5		93.2	30-150			

LCS (BGG0445-BS1)

Prepared & Analyzed: 07/14/23

C10-C28 (DRO)	585	50	mg/kg	500		117	70-130			
Surrogate: o-Terphenyl	12.0		"	12.5		95.7	30-150			

Matrix Spike (BGG0445-MS1)

Source: 2307206-01

Prepared & Analyzed: 07/14/23

C10-C28 (DRO)	528	50	mg/kg	500	9.72	104	70-130			
Surrogate: o-Terphenyl	11.5		"	12.5		91.7	30-150			

Matrix Spike Dup (BGG0445-MSD1)

Source: 2307206-01

Prepared & Analyzed: 07/14/23

C10-C28 (DRO)	632	50	mg/kg	500	9.72	124	70-130	17.9	20	
Surrogate: o-Terphenyl	11.5		"	12.5		91.6	30-150			

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Project: Noble - Pedro State G36-20
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Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

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

Batch BGG0370 - EPA 5030 Soil MS

Blank (BGG0370-BLK1)

Prepared & Analyzed: 07/13/23

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	0.0227		"	0.0333		68.0		40-150			
Surrogate: Fluoranthene-d10	0.0334		"	0.0333		100		40-150			

LCS (BGG0370-BS1)

Prepared & Analyzed: 07/13/23

Acenaphthene	0.0317	0.00500	mg/kg	0.0333		95.1		31-137			
Anthracene	0.0307	0.00500	"	0.0333		92.0		30-120			
Benzo (a) anthracene	0.0295	0.00500	"	0.0333		88.4		30-120			
Benzo (a) pyrene	0.0276	0.00500	"	0.0333		82.9		30-120			
Benzo (b) fluoranthene	0.0292	0.00500	"	0.0333		87.6		30-120			
Benzo (k) fluoranthene	0.0301	0.00500	"	0.0333		90.3		30-120			
Chrysene	0.0307	0.00500	"	0.0333		92.0		30-120			
Dibenz (a,h) anthracene	0.0232	0.00500	"	0.0333		69.5		30-120			
Fluoranthene	0.0282	0.00500	"	0.0333		84.6		30-120			
Fluorene	0.0344	0.00500	"	0.0333		103		30-120			
Indeno (1,2,3-cd) pyrene	0.0312	0.00500	"	0.0333		93.6		30-120			
Pyrene	0.0333	0.00500	"	0.0333		99.8		35-142			
1-Methylnaphthalene	0.0241	0.00500	"	0.0333		72.4		35-142			
2-Methylnaphthalene	0.0273	0.00500	"	0.0333		82.0		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0269		"	0.0333		80.8		40-150			
Surrogate: Fluoranthene-d10	0.0321		"	0.0333		96.3		40-150			

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Project: Noble - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

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 BGG0370 - EPA 5030 Soil MS

Matrix Spike (BGG0370-MS1)

Source: 2307197-01

Prepared & Analyzed: 07/13/23

Acenaphthene	0.0172	0.00500	mg/kg	0.0333	ND	51.5	31-137				
Anthracene	0.0188	0.00500	"	0.0333	ND	56.3	30-120				
Benzo (a) anthracene	0.0183	0.00500	"	0.0333	ND	54.9	30-120				
Benzo (a) pyrene	0.0166	0.00500	"	0.0333	ND	49.9	30-120				
Benzo (b) fluoranthene	0.0163	0.00500	"	0.0333	ND	49.0	30-120				
Benzo (k) fluoranthene	0.0170	0.00500	"	0.0333	ND	51.0	30-120				
Chrysene	0.0181	0.00500	"	0.0333	ND	54.3	30-120				
Dibenz (a,h) anthracene	0.0154	0.00500	"	0.0333	ND	46.3	30-120				
Fluoranthene	0.0176	0.00500	"	0.0333	ND	52.8	30-120				
Fluorene	0.0178	0.00500	"	0.0333	ND	53.5	30-120				
Indeno (1,2,3-cd) pyrene	0.0142	0.00500	"	0.0333	ND	42.7	30-120				
Pyrene	0.0191	0.00500	"	0.0333	ND	57.3	35-142				
1-Methylnaphthalene	0.0181	0.00500	"	0.0333	ND	54.3	15-130				
2-Methylnaphthalene	0.0200	0.00500	"	0.0333	ND	59.9	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0207		"	0.0333		62.0	40-150				
Surrogate: Fluoranthene-d10	0.0203		"	0.0333		60.9	40-150				

Matrix Spike Dup (BGG0370-MSD1)

Source: 2307197-01

Prepared & Analyzed: 07/13/23

Acenaphthene	0.0173	0.00500	mg/kg	0.0333	ND	51.9	31-137	0.669	30
Anthracene	0.0196	0.00500	"	0.0333	ND	58.7	30-120	4.19	30
Benzo (a) anthracene	0.0190	0.00500	"	0.0333	ND	56.9	30-120	3.61	30
Benzo (a) pyrene	0.0170	0.00500	"	0.0333	ND	50.9	30-120	2.04	30
Benzo (b) fluoranthene	0.0163	0.00500	"	0.0333	ND	49.0	30-120	0.141	30
Benzo (k) fluoranthene	0.0168	0.00500	"	0.0333	ND	50.4	30-120	1.10	30
Chrysene	0.0189	0.00500	"	0.0333	ND	56.8	30-120	4.40	30
Dibenz (a,h) anthracene	0.0140	0.00500	"	0.0333	ND	42.1	30-120	9.53	30
Fluoranthene	0.0184	0.00500	"	0.0333	ND	55.1	30-120	4.30	30
Fluorene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	6.61	30
Indeno (1,2,3-cd) pyrene	0.0151	0.00500	"	0.0333	ND	45.3	30-120	6.11	30
Pyrene	0.0192	0.00500	"	0.0333	ND	57.7	35-142	0.682	30
1-Methylnaphthalene	0.0183	0.00500	"	0.0333	ND	55.0	15-130	1.32	50
2-Methylnaphthalene	0.0205	0.00500	"	0.0333	ND	61.6	15-130	2.76	50
Surrogate: 2-Methylnaphthalene-d10	0.0200		"	0.0333		60.1	40-150		
Surrogate: Fluoranthene-d10	0.0208		"	0.0333		62.3	40-150		

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

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 BGG0384 - EPA 3050B

Blank (BGG0384-BLK1)

Prepared: 07/13/23 Analyzed: 07/15/23

Boron ND 0.0100 mg/L

LCS (BGG0384-BS1)

Prepared: 07/13/23 Analyzed: 07/15/23

Boron 4.57 0.0100 mg/L 5.00 91.5 80-120

Duplicate (BGG0384-DUP1)

Source: 2307150-02

Prepared: 07/13/23 Analyzed: 07/15/23

Boron 0.249 0.0100 mg/L 0.256 3.08 20

Matrix Spike (BGG0384-MS1)

Source: 2307150-02

Prepared: 07/13/23 Analyzed: 07/15/23

Boron 4.65 0.0100 mg/L 5.00 0.256 87.8 75-125

Matrix Spike Dup (BGG0384-MSD1)

Source: 2307150-02

Prepared: 07/13/23 Analyzed: 07/15/23

Boron 4.91 0.0100 mg/L 5.00 0.256 93.0 75-125 5.44 25

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Project: Noble - Pedro State G36-20
Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

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 BGG0431 - General Preparation

Blank (BGG0431-BLK1)

Prepared: 07/14/23 Analyzed: 07/19/23

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

LCS (BGG0431-BS1)

Prepared: 07/14/23 Analyzed: 07/19/23

Calcium	6.01	0.0500	mg/L wet	5.00	120	70-130
Magnesium	5.76	0.0500	"	5.00	115	70-130
Sodium	5.43	0.0500	"	5.00	109	70-130

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Project: Noble - Pedro State G36-20

Project Number: UWRWE-A3214-ABN 28228

Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

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 BGG0379 - General Preparation

Duplicate (BGG0379-DUP1)		Source: 2307165-01			Prepared & Analyzed: 07/13/23					
% Solids	91.8		%		90.4		1.48		20	

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Broomfield CO, 80020

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Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

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 BGG0505 - General Preparation

Blank (BGG0505-BLK1)

Prepared & Analyzed: 07/17/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0505-BS1)

Prepared & Analyzed: 07/17/23

Specific Conductance (EC) 0.158 0.0100 mmhos/cm 0.150 105 95-105

Duplicate (BGG0505-DUP1)

Source: 2307157-01

Prepared & Analyzed: 07/17/23

Specific Conductance (EC) 0.335 0.0100 mmhos/cm 0.338 0.773 20

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6855 W. 119th Ave.
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Project: Noble - Pedro State G36-20

Project Number: UWRWE-A3214-ABN 28228

Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

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 BGG0504 - General Preparation

LCS (BGG0504-BS1)

Prepared & Analyzed: 07/17/23

pH	9.12	pH Units	9.18	99.3	95-105
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Duplicate (BGG0504-DUP1)

Source: 2307186-01

Prepared & Analyzed: 07/17/23

pH	8.30	pH Units	8.39	1.08	20
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Pedro State G36-20

Project Number: UWRWE-A3214-ABN 28228
Project Manager: Jacob Whritenour

Reported:
07/19/23 14:35

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