

**TABLE 1**  
**SOIL SAMPLE LOCATIONS**  
**NOBLE ENERGY, INC. - SLW RANCH B12-65-1HN**

Soil Sample ID	Date	PID Reading (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude	Longitude	PDOP
SS01@2"	02/06/23	7.2	No Staining	HC Odor	Lab	40.41134600	-104.5022810	3.6
SS02@2"	02/06/23	5.1	No Staining	HC Odor	Lab	40.41136700	-104.5022920	2.2
FS01@8"	02/07/23	11.9	No Staining	Slight HC Odor	Lab	40.41135200	-104.5022810	1.2
SS03@6"	02/09/23	2.9	No Staining	No Odor	Lab	40.41135934	-104.5022893	1.0
SS04@6"	02/09/23	0.0	No Staining	No Odor	Lab	40.41136143	-104.5022712	0.9
SS05@6"	02/09/23	4.3	No Staining	No Odor	Lab	40.41134611	-104.5022674	1.0
SS06@6"	02/09/23	2.3	No Staining	No Odor	Lab	40.41134479	-104.5022877	1.0
BG01@0.5'	03/16/23	0.0	No Staining	No Odor	Lab	40.41154671	-104.5011358	2.6
BG01@3'	03/16/23	0.0	No Staining	No Odor	Lab	40.41154671	-104.5011358	2.6
BG02@0.5'	03/16/23	0.0	No Staining	No Odor	Lab	40.41145208	-104.5011016	2.6
BG02@3'	03/16/23	0.0	No Staining	No Odor	Lab	40.41145208	-104.5011016	2.6
BG03@0.5'	03/16/23	0.0	No Staining	No Odor	Lab	40.41136067	-104.5010660	3.4
BG03@3'	03/16/23	0.0	No Staining	No Odor	Lab	40.41136067	-104.5010660	3.4
BG04@0.5'	03/16/23	0.0	No Staining	No Odor	Lab	40.41152169	-104.5010247	4.3
BG04@3'	03/16/23	0.0	No Staining	No Odor	Lab	40.41152169	-104.5010247	4.3
BG05@0.5'	03/16/23	0.0	No Staining	No Odor	Lab	40.41143448	-104.5009764	4.3
BG05@3'	03/16/23	0.0	No Staining	No Odor	Lab	40.41143448	-104.5009764	4.3
SS07@2'	03/20/23	1.2	No Staining	No Odor	Lab	40.41136415	-104.5022716	1.0
SS08@2'	03/20/23	0.6	No Staining	No Odor	Lab	40.41134652	-104.5022602	1.1
SS09@2'	03/20/23	0.2	No Staining	No Odor	Lab	40.41136960	-104.5022703	1.0
SS10@2'	03/20/23	0.4	No Staining	No Odor	Lab	40.41136444	-104.5022994	0.9
FS02@2.5'	03/20/23	0.9	No Staining	No Odor	Lab	40.41134137	-104.5022767	1.2
FS01@2.5'	03/29/23	0.4	No Staining	No Odor	Lab	NM	NM	NM
FS03@2.5'	04/11/23	2.8	No Staining	No Odor	Lab	40.41135900	-104.5022820	NM

Notes:

PID = Photo-ionization detector

ppm = parts per million

PDOP = Position dilution of precision

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

NM = Not Measured

TABLE 2  
SOIL ANALYTICAL DATA  
NOBLE ENERGY, INC. - SLW RANCH B12-65-1HN

Soil Sample ID	Date	<sup>1</sup> Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL <sup>2</sup>		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL <sup>2,3</sup>		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
SS01@2"	02/06/23	0.074	0.24	0.044	0.44	0.20	0.077	0.028	12	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00847	<0.00500	<0.00500	0.0103	<0.00500	<0.00500	0.0398	0.0973
SS02@2"	02/06/23	0.057	0.11	0.011	0.12	0.036	0.013	0.0094	1.3	<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	0.00574	0.0146
FS01@8"	02/07/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	170	<50	<0.00500	<0.00500	<0.00500	<0.00500	0.00573	<0.00500	0.0216	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0159	0.00949
SS03@6"	02/09/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS04@6"	02/09/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS05@6"	02/09/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS06@6"	02/09/23	<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
SS07@2"	03/20/23	<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
SS08@2'	03/20/23	<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
SS09@2'	03/20/23	<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
SS10@2'	03/20/23	<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
FS02@2.5'	03/20/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01@2.5'	03/29/23	<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
FS03@2.5'	04/11/23	<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 <sup>2</sup>		6 - 8.3	<6	<4mmhos/cm	2
SS01@2"	02/06/23	7.82	8.01	2.54	1.66
SS02@2"	02/06/23	8.35	44.3	3.58	1.72
FS01@8"	02/07/23	8.21	39.6	2.95	0.733
SS03@6"	02/09/23	8.04	16.0	2.82	0.935
SS04@6"	02/09/23	8.02	10.9	1.59	0.771
SS05@6"	02/09/23	8.90	4.71	1.16	0.779
SS06@6"	02/09/23	7.90	8.84	1.58	1.14
BG01@0.5'	03/16/23	8.42	0.177	0.148	0.0843
BG01@3'	03/16/23	8.53	0.195	0.138	0.0472
BG02@0.5'	03/16/23	8.27	0.0411	0.185	0.225
BG02@3'	03/16/23	8.30	0.338	0.176	0.109
BG03@0.5'	03/16/23	8.82	0.0974	0.321	0.395
BG03@3'	03/16/23	8.15	0.277	0.170	0.0475
BG04@0.5'	03/16/23	8.13	0.0388	0.220	0.175
BG04@3'	03/16/23	8.69	0.218	0.142	0.0660
BG05@0.5'	03/16/23	8.74	0.361	0.266	0.0643
BG05@3'	03/16/23	8.33	0.330	0.220	0.0760
SS07@2"	03/20/23	7.76	0.492	0.602	0.0912
SS08@2'	03/20/23	7.92	0.417	0.500	0.0986
SS09@2'	03/20/23	7.49	1.88	0.950	0.0911
SS10@2'	03/20/23	8.47	3.82	0.697	0.180
FS02@2.5'	03/20/23	7.45	2.89	0.888	0.154
FS01@2.5'	03/29/23	7.70	23.8	6.49	0.949
FS03@2.5'	04/11/23	7.80	2.56	3.60	0.231

Soil Sample ID	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL <sup>2</sup>		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL <sup>2,3</sup>		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
SS01@2"	02/06/23	1.94	106	0.173	<0.30	4.42	3.65	2.96	<0.260	0.0242	16.6
SS02@2"	02/06/23	4.87	75.8	0.302	<0.30	4.88	7.61	3.11	<0.260	0.0163	11.1
FS01@8"	02/07/23	2.15	57.5	0.0616	<0.30	5.74	2.84	4.03	0.426	0.0114	15.3
SS03@6"	02/09/23	1.80	44.0	0.0474	<0.30	5.21	2.38	3.59	0.396	0.0118	13.3
SS04@6"	02/09/23	1.55	39.7	0.0441	<0.30	4.89	2.23	3.28	0.363	0.0120	13.2
SS05@6"	02/09/23	1.97	42.8	0.0592	<0.30	5.58	2.85	3.96	0.449	0.0136	16.2
SS06@6"	02/09/23	1.86	47.7	0.0612	<0.30	5.58	2.85	3.94	0.296	0.0165	15.9
BG01@0.5'	03/16/23	1.87	26.6	0.101	<0.30	1.80	2.83	1.50	<0.260	0.00886	6.84
BG01@3'	03/16/23	0.722	22.4	0.0454	<0.30	1.03	1.61	0.827	<0.260	0.00730	3.73
BG02@0.5'	03/16/23	0.722	18.0	0.0770	<0.30	1.65	2.87	1.29	<0.260	0.0264	6.34
BG02@3'	03/16/23	2.71	35.2	0.105	<0.30	2.26	2.70	1.47	<0.260	0.0106	6.20
BG03@0.5'	03/16/23	1.25	25.5	0.105	<0.30	2.13	3.81	1.71	<0.260	0.0257	8.09
BG03@3'	03/16/23	1.08	39.4	0.0676	<0.30	1.20	2.20	1.14	<0.260	0.00607	4.60
BG04@0.5'	03/16/23	1.26	24.2	0.122	<0.30	2.32	4.48	1.86	<0.260	0.0278	9.53
BG04@3'	03/16/23	1.29	12.8	0.0655	<0.30	1.30	2.44	0.824	<0.260	0.00498	4.04
BG05@0.5'	03/16/23	1.20	33.6	0.0703	<0.30	1.65	2.66	1.27	<0.260	0.00682	5.62
BG05@3'	03/16/23	2.48	43.6	0.125	<0.30	2.13	5.76	1.72	<0.260	0.00939	7.60
SS07@2"	03/20/23	2.00	50.2	0.0822	<0.30	3.53	2.75	2.91	<0.260	0.0126	9.97
SS08@2'	03/20/23	2.04	30.2	0.0970	<0.30	4.09	3.37	2.80	<0.260	0.0142	10.2
SS09@2'	03/20/23	2.27	47.0	0.0901	<0.30	4.01	2.96	3.23	<0.260	0.0110	10.8
SS10@2'	03/20/23	2.76	53.2	0.0935	<0.30	4.96	3.39	3.45	<0.260	0.0119	12.5
FS02@2.5'	03/20/23	2.96	49.0	0.107	<0.30	4.41	3.38	3.51	<0.260	0.0122	11.9
FS01@2.5'	03/29/23	2.41	48.3	0.103	<0.30	3.86	2.92	2.85	<0.260	0.00974	11.7
FS03@2.5'	04/11/23	2.42	48.6	<0.205	<0.30	4.15	3.44	3.11	<0.260	<0.0205	14.4

Notes:

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

Definitions:

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 = Millimhos per centimeter

mg/L = Milligrams per liter

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

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

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

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

Benz(a) = Benzanthracene

Benzo(b) = Benzo(a)fluoranthene

Benzo(k) = Benzo(a)fluoranthene

Benzo(a) = Benzopyrene

A,H = Dibenzoanthracene

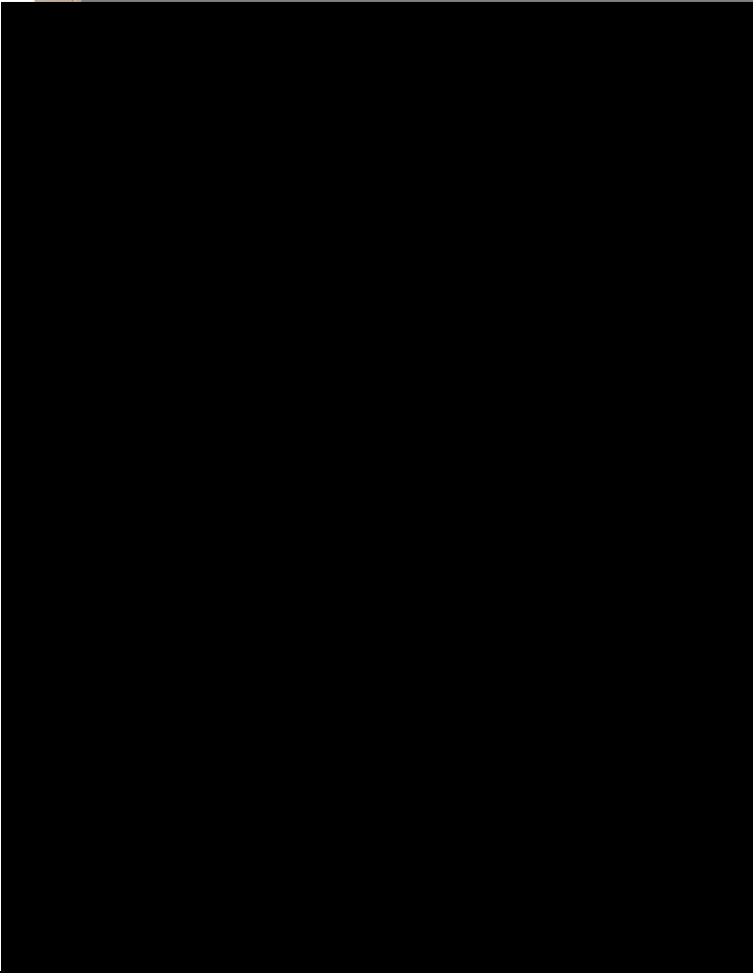
1,2,3-CD = Indenopyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene

RP = Results Pending



Photographic Log

					
Equipment ID:SS01 @2'		Equipment Type: Separator	Equipment ID:		Equipment Type: Separator
Material:	Volume:	Contents:	Material:	Volume:	Contents:
Notes/Conditions:			Notes/Conditions:		







## Photographic Log

					
<b>Equipment ID:</b> SS03		<b>Equipment Type:</b>			
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>		<b>Equipment ID:</b> SS04	
				<b>Equipment Type:</b>	
<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>	
<b>Notes/Conditions:</b>			<b>Notes/Conditions:</b>		



## Photographic Log

							
<b>Equipment ID:</b> SS05		<b>Equipment Type:</b>		<b>Equipment ID:</b> SS06		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>		<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b>				<b>Notes/Conditions:</b>			



## Photographic Log

									
<b>Equipment ID:</b> FS02@2.5'		<b>Equipment Type:</b>		<b>Equipment ID:</b> SS07@2'		<b>Equipment Type:</b>			
<b>Material:</b>		<b>Volume:</b>		<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>	
<b>Notes/Conditions:</b>					<b>Notes/Conditions:</b>				



## Photographic Log

							
Equipment ID:SS08@2'		Equipment Type:		Equipment ID:SS09@2'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			



## Photographic Log



<b>Equipment ID:</b> SS10@2'		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b>			



<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> South facing extent			



**Direction:**

**Notes:** FS01 @ 2.5'

**Direction:**

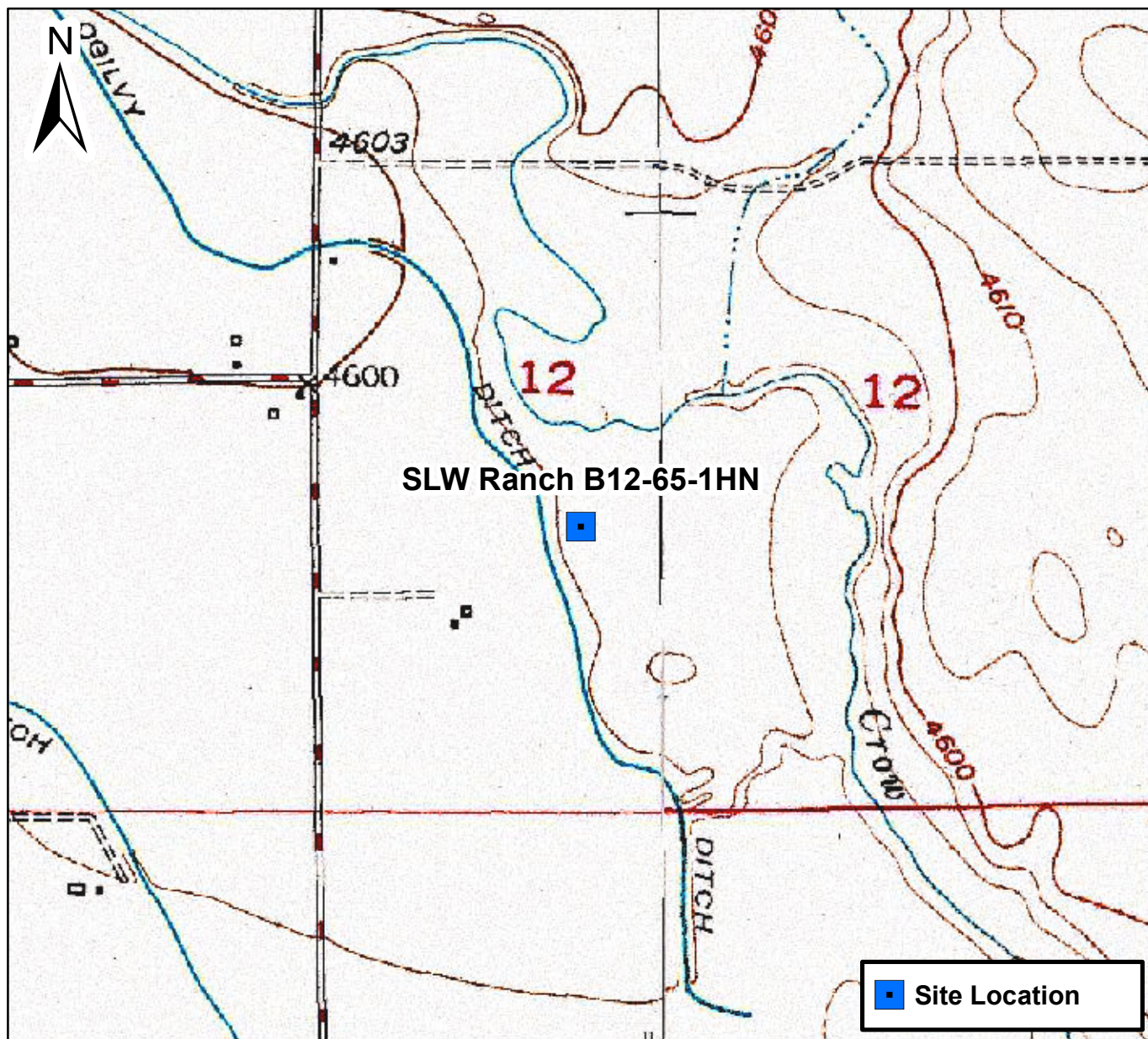
**Notes:**



## Photographic Log



<b>Equipment ID:</b> FS03@2.5'		<b>Equipment Type:</b>		<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>		<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b>				<b>Notes/Conditions:</b>			



0 1,000 2,000 Feet

## Figure 1

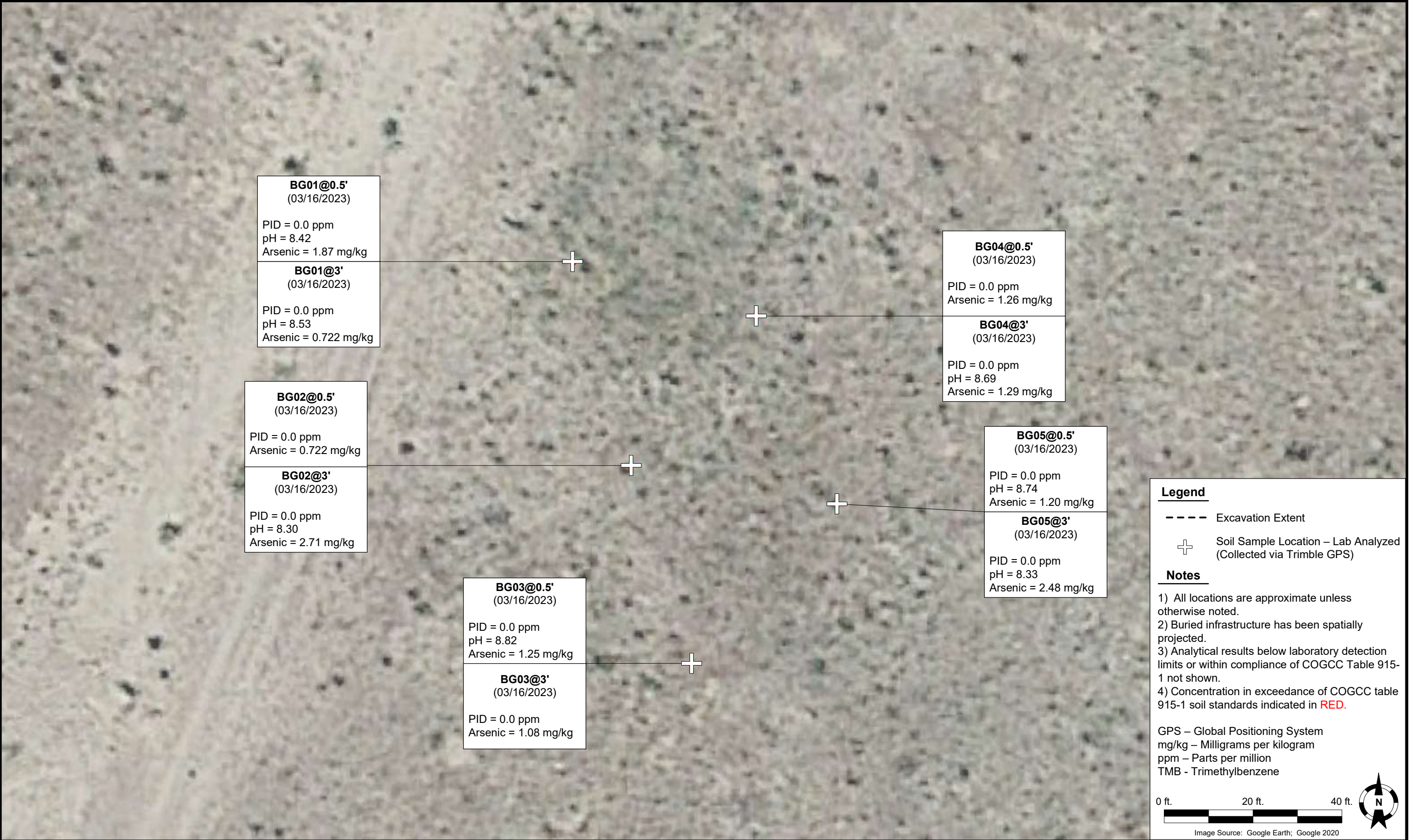
Site Location Map  
SLW Ranch B12-65-1HN  
NESW S12 T5N R64W  
Weld County, Colorado



















































# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 13, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - SLW Ranch B12-65-1HN

Work Order # 2302194

Enclosed are the results of analyses for samples received by Summit Scientific on 02/09/23 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Scott Sheely For Paul Shrewsbury

President



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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS03@6"	2302194-01	Soil	02/09/23 12:05	02/09/23 18:00
SS04@6"	2302194-02	Soil	02/09/23 12:10	02/09/23 18:00
SS05@6"	2302194-03	Soil	02/09/23 12:15	02/09/23 18:00
SS06@6"	2302194-04	Soil	02/09/23 12:20	02/09/23 18:00

Summit Scientific

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

Client: PDC / Tasman		Send Data To: Project Manager: <u>CJ Mark Longhurst</u> <u>Jake Whitenour</u>		Send Invoice To: Company: <u>CJ PDC Energy</u> <u>Noble Energy</u>	
Address: 6855 W 119th Ave		E-Mail: <u>CJ mark.longhurst@PDC.com</u>		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220		E-Mail: <u>JWhitenour@Tasman-Geo.com</u>		AFE#:	
Phone: 303-487-1228		Project Name: <u>SLW Ranch B12-55-1HN</u>		PO/Billing Codes:	
Sampler Name: Chase Jonjak		Project Number:		Contact: <u>CJ Mark Longhurst</u> <u>Dan Peterson</u>	

					Preservative				Matrix			Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	Metals - 915	PAH - 915		
1	SS03@5"	2/9/23	1205	3			X			X			X	X	X	X	X	X	X		
2	SS04@5"	I	1210	I			I			I			I	I	I	I	I	I	I		
3	SS05@5"	I	1215	I			I			I			I	I	I	I	I	I	I		
4	SS06@5"	I	1220	I			I			I			I	I	I	I	I	I	I		
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>Chase J</u> Date/Time: <u>2/9/23 1446</u>	Received by: <u>Tasman Lockbox</u> Date/Time: <u>2/9/23 1445</u>	TAT Business Days	Field DO	Notes:
		Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by: <u>Tasman Lockbox</u> Date/Time: <u>2/9/23 1800</u>	Received by: <u>[Signature]</u> Date/Time: <u>2/9/23 1800</u>	1 Day	Field ORP	
		2 Days	Field pH	
Relinquished by:	Received by:	3 Days	Field Temp.	
		Standard	Field Turb.	
Temperature Upon Receipt: <u>8.3</u>	Corrected Temperature: <u>0</u>	IR gun #:	HNO3 lot #:	

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2302194Client: Doc Trisman Client Project ID: SLW RanchShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

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

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.3 Thermometer # 1

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

Additional Comments (if any):

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

Custodian Printed Name

Date/Time

2-9-23





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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS03@6"**  
**2302194-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/09/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0281	02/09/23	02/10/23	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: **02/09/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		76.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/09/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0282	02/09/23	02/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/09/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		114 %		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 - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS03@6"**  
**2302194-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/09/23 12:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0296	02/10/23	02/11/23	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: **02/09/23 12:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.6 %		40-150		"	"	"	"	

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

Date Sampled: **02/09/23 12:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.935</b>	0.0100		mg/L	1	BGB0312	02/10/23	02/13/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/09/23 12:05**

Analyte	Result	Reporting Limit	MDL	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 - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS03@6"**  
**2302194-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.80	0.213	0.180	mg/kg dry	1	BGB0306	02/10/23	02/12/23	EPA 6020B
Barium	44.0	0.427	0.337	"	"	"	"	"	"
Cadmium	0.0474	0.213	0.00768	"	"	"	"	"	"
Copper	5.21	0.427	0.0223	"	"	"	"	"	"
Lead	2.38	0.213	0.0586	"	"	"	"	"	"
Nickel	3.59	0.427	0.0651	"	"	"	"	"	"
Selenium	0.396	0.260	0.175	"	"	"	"	"	"
Silver	0.0118	0.0213	0.00285	"	"	"	"	"	"
Zinc	13.3	0.427	0.284	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/09/23 12:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0315	02/10/23	02/10/23	EPA 7196A	

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

Date Sampled: **02/09/23 12:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	41.4	0.0534		mg/L dry	1	BGB0285	02/09/23	02/12/23	EPA 6020B	
Magnesium	11.1	0.0534		"	"	"	"	"	"	
Sodium	449	0.0534		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/09/23 12:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	16.0	0.00100		units	1	BGB0360	02/13/23	02/13/23	Calculation	

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

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS03@6"**  
**2302194-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/09/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	93.7			%	1	BGB0334	02/12/23	02/12/23	Calculation	

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

Date Sampled: **02/09/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	2.82	0.0100		mmhos/cm	1	BGB0317	02/10/23	02/10/23	EPA 120.1	

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

Date Sampled: **02/09/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.04			pH Units	1	BGB0316	02/10/23	02/10/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS04@6"**  
**2302194-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/09/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0281	02/09/23	02/10/23	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: **02/09/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		80.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		110 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/09/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0282	02/09/23	02/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/09/23 12:10**

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

**PAH by EPA Method 8270D SIM**

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS04@6"**  
**2302194-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/09/23 12:10**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Acenaphthene	ND	0.00500			mg/kg	1	BGB0296	02/10/23	02/11/23	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: **02/09/23 12:10**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Surrogate: 2-Methylnaphthalene-d10		43.6 %			40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		76.2 %			40-150		"	"	"	"	

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

Date Sampled: **02/09/23 12:10**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Boron	0.771	0.0100			mg/L	1	BGB0312	02/10/23	02/13/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/09/23 12:10**

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

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS04@6"**  
**2302194-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.55	0.214	0.180	mg/kg dry	1	BGB0306	02/10/23	02/12/23	EPA 6020B
Barium	39.7	0.428	0.338	"	"	"	"	"	"
Cadmium	0.0441	0.214	0.00770	"	"	"	"	"	"
Copper	4.89	0.428	0.0224	"	"	"	"	"	"
Lead	2.23	0.214	0.0588	"	"	"	"	"	"
Nickel	3.28	0.428	0.0653	"	"	"	"	"	"
Selenium	0.363	0.260	0.175	"	"	"	"	"	"
Silver	0.0120	0.0214	0.00286	"	"	"	"	"	"
Zinc	13.2	0.428	0.285	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/09/23 12:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0315	02/10/23	02/10/23	EPA 7196A	

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

Date Sampled: **02/09/23 12:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.3	0.0535		mg/L dry	1	BGB0285	02/09/23	02/12/23	EPA 6020B	
Magnesium	7.07	0.0535		"	"	"	"	"	"	
Sodium	248	0.0535		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/09/23 12:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.9	0.00100		units	1	BGB0360	02/13/23	02/13/23	Calculation	

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

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS04@6"**  
**2302194-02 (Soil)**

### Summit Scientific

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

Date Sampled: **02/09/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	93.5			%	1	BGB0334	02/12/23	02/12/23	Calculation	

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

Date Sampled: **02/09/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.59	0.0100		mmhos/cm	1	BGB0317	02/10/23	02/10/23	EPA 120.1	

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

Date Sampled: **02/09/23 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.02			pH Units	1	BGB0316	02/10/23	02/10/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS05@6"**  
**2302194-03 (Soil)**

### Summit Scientific

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

Date Sampled: **02/09/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0281	02/09/23	02/10/23	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: **02/09/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %		50-150		"	"	"	"	

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/09/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0282	02/09/23	02/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/09/23 12:15**

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

#### PAH by EPA Method 8270D SIM

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS05@6"**  
**2302194-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/09/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0296	02/10/23	02/11/23	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: **02/09/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		52.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		72.4 %		40-150		"	"	"	"	

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

Date Sampled: **02/09/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.779	0.0100		mg/L	1	BGB0312	02/10/23	02/13/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/09/23 12:15**

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS05@6"**  
**2302194-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.97	0.215	0.181	mg/kg dry	1	BGB0306	02/10/23	02/12/23	EPA 6020B
Barium	42.8	0.431	0.340	"	"	"	"	"	"
Cadmium	0.0592	0.215	0.00775	"	"	"	"	"	"
Copper	5.58	0.431	0.0225	"	"	"	"	"	"
Lead	2.85	0.215	0.0592	"	"	"	"	"	"
Nickel	3.96	0.431	0.0657	"	"	"	"	"	"
Selenium	0.449	0.260	0.175	"	"	"	"	"	"
Silver	0.0136	0.0215	0.00288	"	"	"	"	"	"
Zinc	16.2	0.431	0.286	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/09/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0315	02/10/23	02/10/23	EPA 7196A	

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

Date Sampled: **02/09/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	260	0.0539		mg/L dry	1	BGB0285	02/09/23	02/12/23	EPA 6020B	
Magnesium	22.5	0.0539		"	"	"	"	"	"	
Sodium	295	0.0539		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/09/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.71	0.00100		units	1	BGB0360	02/13/23	02/13/23	Calculation	

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

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS05@6"**  
**2302194-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/09/23 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.8			%	1	BGB0334	02/12/23	02/12/23	Calculation	

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

Date Sampled: **02/09/23 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.16	0.0100		mmhos/cm	1	BGB0317	02/10/23	02/10/23	EPA 120.1	

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

Date Sampled: **02/09/23 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.90			pH Units	1	BGB0316	02/10/23	02/10/23	EPA 9045D	

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS06@6"**  
**2302194-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/09/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0281	02/09/23	02/10/23	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: **02/09/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		78.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/09/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0282	02/09/23	02/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/09/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS06@6"**  
**2302194-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/09/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0296	02/10/23	02/11/23	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: **02/09/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		68.4 %		40-150		"	"	"	"	

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

Date Sampled: **02/09/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	1.14	0.0100		mg/L	1	BGB0312	02/10/23	02/13/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/09/23 12:20**

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS06@6"**  
**2302194-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.86	0.216	0.182	mg/kg dry	1	BGB0306	02/10/23	02/13/23	EPA 6020B
Barium	47.7	0.433	0.342	"	"	"	"	"	"
Cadmium	0.0612	0.216	0.00779	"	"	"	"	"	"
Copper	5.58	0.433	0.0226	"	"	"	"	"	"
Lead	2.85	0.216	0.0594	"	"	"	"	"	"
Nickel	3.94	0.433	0.0660	"	"	"	"	"	"
Selenium	0.296	0.260	0.175	"	"	"	"	"	"
Silver	0.0165	0.0216	0.00289	"	"	"	"	"	"
Zinc	15.9	0.433	0.288	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/09/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0315	02/10/23	02/10/23	EPA 7196A	

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

Date Sampled: **02/09/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	39.7	0.0541		mg/L dry	1	BGB0285	02/09/23	02/12/23	EPA 6020B	
Magnesium	6.78	0.0541		"	"	"	"	"	"	
Sodium	229	0.0541		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/09/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.84	0.00100		units	1	BGB0360	02/13/23	02/13/23	Calculation	

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

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**SS06@6"**  
**2302194-04 (Soil)**

### Summit Scientific

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

Date Sampled: **02/09/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.5			%	1	BGB0334	02/12/23	02/12/23	Calculation	

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

Date Sampled: **02/09/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.58	0.0100		mmhos/cm	1	BGB0317	02/10/23	02/10/23	EPA 120.1	

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

Date Sampled: **02/09/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.90			pH Units	1	BGB0316	02/10/23	02/10/23	EPA 9045D	

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

## 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 BGB0281 - EPA 5030 Soil MS

##### Blank (BGB0281-BLK1)

Prepared: 02/09/23 Analyzed: 02/10/23

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	0.0369		"	0.0400		92.2	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0366		"	0.0400		91.5	50-150			

##### LCS (BGB0281-BS1)

Prepared: 02/09/23 Analyzed: 02/10/23

Benzene	0.0835	0.0020	mg/kg	0.100		83.5	70-130			
Toluene	0.0800	0.0050	"	0.100		80.0	70-130			
Ethylbenzene	0.102	0.0050	"	0.100		102	70-130			
m,p-Xylene	0.207	0.010	"	0.200		103	70-130			
o-Xylene	0.0969	0.0050	"	0.100		96.9	70-130			
1,2,4-Trimethylbenzene	0.0941	0.0050	"	0.100		94.1	70-130			
1,3,5-Trimethylbenzene	0.0970	0.0050	"	0.100		97.0	70-130			
Naphthalene	0.0821	0.0038	"	0.100		82.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0236		"	0.0400		58.9	50-150			
Surrogate: Toluene-d8	0.0326		"	0.0400		81.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0241		"	0.0400		60.2	50-150			

##### Matrix Spike (BGB0281-MS1)

Source: 2302168-01

Prepared: 02/09/23 Analyzed: 02/10/23

Benzene	0.0746	0.0020	mg/kg	0.100	ND	74.6	70-130			
Toluene	0.100	0.0050	"	0.100	ND	100	70-130			
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130			
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130			
o-Xylene	0.0960	0.0050	"	0.100	ND	96.0	70-130			
1,2,4-Trimethylbenzene	0.0948	0.0050	"	0.100	ND	94.8	70-130			
1,3,5-Trimethylbenzene	0.0983	0.0050	"	0.100	ND	98.3	70-130			
Naphthalene	0.0893	0.0038	"	0.100	ND	89.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0360		"	0.0400		90.1	50-150			
Surrogate: Toluene-d8	0.0418		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0440		"	0.0400		110	50-150			

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

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

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

**Batch BGB0281 - EPA 5030 Soil MS**

Matrix Spike Dup (BGB0281-MSD1)	Source: 2302168-01			Prepared: 02/09/23 Analyzed: 02/10/23							
Benzene	0.0791	0.0020	mg/kg	0.100	ND	79.1	70-130	5.94	30		
Toluene	0.0952	0.0050	"	0.100	ND	95.2	70-130	5.04	30		
Ethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	1.90	30		
m,p-Xylene	0.212	0.010	"	0.200	ND	106	70-130	1.87	30		
o-Xylene	0.0955	0.0050	"	0.100	ND	95.5	70-130	0.501	30		
1,2,4-Trimethylbenzene	0.0914	0.0050	"	0.100	ND	91.4	70-130	3.61	30		
1,3,5-Trimethylbenzene	0.0947	0.0050	"	0.100	ND	94.7	70-130	3.73	30		
Naphthalene	0.0857	0.0038	"	0.100	ND	85.7	70-130	4.11	30		
Surrogate: 1,2-Dichloroethane-d4	0.0402		"	0.0400		101	50-150				
Surrogate: Toluene-d8	0.0419		"	0.0400		105	50-150				
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	50-150				

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**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 BGB0282 - EPA 3550A**

**Blank (BGB0282-BLK1)**

Prepared: 02/09/23 Analyzed: 02/10/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	15.9		"	12.5		127	30-150			

**LCS (BGB0282-BS1)**

Prepared: 02/09/23 Analyzed: 02/10/23

C10-C28 (DRO)	503	50	mg/kg	500		101	70-130			
Surrogate: o-Terphenyl	15.8		"	12.5		126	30-150			

**Matrix Spike (BGB0282-MS1)**

**Source: 2302167-01**

Prepared: 02/09/23 Analyzed: 02/10/23

C10-C28 (DRO)	533	50	mg/kg	500	43.0	98.0	70-130			
Surrogate: o-Terphenyl	15.9		"	12.5		127	30-150			

**Matrix Spike Dup (BGB0282-MSD1)**

**Source: 2302167-01**

Prepared: 02/09/23 Analyzed: 02/10/23

C10-C28 (DRO)	540	50	mg/kg	500	43.0	99.4	70-130	1.36	20	
Surrogate: o-Terphenyl	16.0		"	12.5		128	30-150			

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

## 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 BGB0296 - EPA 5030 Soil MS

##### Blank (BGB0296-BLK1)

Prepared & Analyzed: 02/10/23

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	0.0237		"	0.0333		71.0	40-150			
Surrogate: Fluoranthene-d10	0.0304		"	0.0333		91.2	40-150			

##### LCS (BGB0296-BS1)

Prepared & Analyzed: 02/10/23

Acenaphthene	0.0314	0.00500	mg/kg	0.0333		94.2	31-137			
Anthracene	0.0329	0.00500	"	0.0333		98.6	30-120			
Benzo (a) anthracene	0.0299	0.00500	"	0.0333		89.7	30-120			
Benzo (a) pyrene	0.0268	0.00500	"	0.0333		80.4	30-120			
Benzo (b) fluoranthene	0.0278	0.00500	"	0.0333		83.3	30-120			
Benzo (k) fluoranthene	0.0272	0.00500	"	0.0333		81.5	30-120			
Chrysene	0.0302	0.00500	"	0.0333		90.7	30-120			
Dibenz (a,h) anthracene	0.0223	0.00500	"	0.0333		66.9	30-120			
Fluoranthene	0.0320	0.00500	"	0.0333		96.1	30-120			
Fluorene	0.0317	0.00500	"	0.0333		95.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0240	0.00500	"	0.0333		72.0	30-120			
Pyrene	0.0323	0.00500	"	0.0333		96.8	35-142			
1-Methylnaphthalene	0.0311	0.00500	"	0.0333		93.4	35-142			
2-Methylnaphthalene	0.0304	0.00500	"	0.0333		91.3	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0293		"	0.0333		88.0	40-150			
Surrogate: Fluoranthene-d10	0.0314		"	0.0333		94.2	40-150			

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGB0296 - EPA 5030 Soil MS

##### Matrix Spike (BGB0296-MS1)

Source: 2302163-01

Prepared & Analyzed: 02/10/23

Acenaphthene	0.0193	0.00500	mg/kg	0.0333	ND	57.9	31-137		
Anthracene	0.0192	0.00500	"	0.0333	ND	57.6	30-120		
Benzo (a) anthracene	0.0187	0.00500	"	0.0333	ND	56.1	30-120		
Benzo (a) pyrene	0.0164	0.00500	"	0.0333	ND	49.3	30-120		
Benzo (b) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.1	30-120		
Benzo (k) fluoranthene	0.0161	0.00500	"	0.0333	ND	48.4	30-120		
Chrysene	0.0177	0.00500	"	0.0333	ND	53.0	30-120		
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0333	ND	46.9	30-120		
Fluoranthene	0.0190	0.00500	"	0.0333	ND	57.0	30-120		
Fluorene	0.0191	0.00500	"	0.0333	ND	57.4	30-120		
Indeno (1,2,3-cd) pyrene	0.0144	0.00500	"	0.0333	ND	43.2	30-120		
Pyrene	0.0193	0.00500	"	0.0333	ND	57.9	35-142		
1-Methylnaphthalene	0.0204	0.00500	"	0.0333	ND	61.3	15-130		
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	62.9	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0179		"	0.0333		53.8	40-150		
Surrogate: Fluoranthene-d10	0.0201		"	0.0333		60.2	40-150		

##### Matrix Spike Dup (BGB0296-MSD1)

Source: 2302163-01

Prepared & Analyzed: 02/10/23

Acenaphthene	0.0197	0.00500	mg/kg	0.0333	ND	59.2	31-137	2.33	30
Anthracene	0.0203	0.00500	"	0.0333	ND	61.0	30-120	5.73	30
Benzo (a) anthracene	0.0182	0.00500	"	0.0333	ND	54.7	30-120	2.53	30
Benzo (a) pyrene	0.0156	0.00500	"	0.0333	ND	46.8	30-120	5.13	30
Benzo (b) fluoranthene	0.0154	0.00500	"	0.0333	ND	46.3	30-120	5.81	30
Benzo (k) fluoranthene	0.0153	0.00500	"	0.0333	ND	46.0	30-120	5.06	30
Chrysene	0.0174	0.00500	"	0.0333	ND	52.1	30-120	1.72	30
Dibenz (a,h) anthracene	0.0158	0.00500	"	0.0333	ND	47.4	30-120	1.17	30
Fluoranthene	0.0195	0.00500	"	0.0333	ND	58.6	30-120	2.74	30
Fluorene	0.0195	0.00500	"	0.0333	ND	58.6	30-120	2.16	30
Indeno (1,2,3-cd) pyrene	0.0141	0.00500	"	0.0333	ND	42.2	30-120	2.49	30
Pyrene	0.0190	0.00500	"	0.0333	ND	57.1	35-142	1.44	30
1-Methylnaphthalene	0.0208	0.00500	"	0.0333	ND	62.5	15-130	1.83	50
2-Methylnaphthalene	0.0182	0.00500	"	0.0333	ND	54.7	15-130	13.8	50
Surrogate: 2-Methylnaphthalene-d10	0.0171		"	0.0333		51.4	40-150		
Surrogate: Fluoranthene-d10	0.0188		"	0.0333		56.5	40-150		

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**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

**Batch BGB0312 - EPA 3050B**

**Blank (BGB0312-BLK1)**

Prepared: 02/10/23 Analyzed: 02/12/23

Boron ND 0.0100 mg/L

**LCS (BGB0312-BS1)**

Prepared: 02/10/23 Analyzed: 02/12/23

Boron 5.75 0.0100 mg/L 5.00 115 80-120

**Duplicate (BGB0312-DUP1)**

**Source: 2302124-01**

Prepared: 02/10/23 Analyzed: 02/12/23

Boron 0.146 0.0100 mg/L 0.183 22.1 20 QR-03

**Matrix Spike (BGB0312-MS1)**

**Source: 2302124-01**

Prepared: 02/10/23 Analyzed: 02/12/23

Boron 6.22 0.0100 mg/L 5.00 0.183 121 75-125

**Matrix Spike Dup (BGB0312-MSD1)**

**Source: 2302124-01**

Prepared: 02/10/23 Analyzed: 02/12/23

Boron 6.59 0.0100 mg/L 5.00 0.183 128 75-125 5.79 25 QM-07

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

### Total Metals by EPA 6020B - Quality Control

#### Summit Scientific

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

#### Batch BGB0306 - EPA 3050B

##### Blank (BGB0306-BLK1)

Prepared: 02/10/23 Analyzed: 02/12/23

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

##### LCS (BGB0306-BS1)

Prepared: 02/10/23 Analyzed: 02/12/23

Arsenic	45.2	0.200	mg/kg wet	40.0	113	80-120
Barium	47.3	0.400	"	40.0	118	80-120
Cadmium	2.38	0.200	"	2.00	119	80-120
Copper	47.3	0.400	"	40.0	118	80-120
Lead	22.8	0.200	"	20.0	114	80-120
Nickel	46.9	0.400	"	40.0	117	80-120
Selenium	4.55	0.260	"	4.00	114	80-120
Silver	2.21	0.0200	"	2.00	110	80-120
Zinc	45.0	0.400	"	40.0	112	80-120

##### Duplicate (BGB0306-DUP1)

Source: 2301163-02

Prepared: 02/10/23 Analyzed: 02/12/23

Arsenic	1.44	0.200	mg/kg wet	1.40	2.25	20	
Barium	30.6	0.400	"	22.5	30.4	20	QR-03
Cadmium	0.0808	0.200	"	0.0473	52.3	20	QR-01
Copper	2.59	0.400	"	2.22	15.8	20	
Lead	3.09	0.200	"	2.52	20.3	20	QR-03
Nickel	3.41	0.400	"	2.51	30.3	20	QR-03
Selenium	0.422	0.260	"	0.267	45.1	20	QR-03
Silver	0.0165	0.0200	"	0.0122	29.7	20	QR-01
Zinc	15.7	0.400	"	11.5	30.8	20	QR-03

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGB0306 - EPA 3050B**

**Matrix Spike (BGB0306-MS1)**

Source: 2301163-02

Prepared: 02/10/23 Analyzed: 02/12/23

Arsenic	44.7	0.200	mg/kg wet	40.0	1.40	108	75-125		
Barium	62.4	0.400	"	40.0	22.5	99.8	75-125		
Cadmium	2.09	0.200	"	2.00	0.0473	102	75-125		
Copper	42.7	0.400	"	40.0	2.22	101	75-125		
Lead	21.3	0.200	"	20.0	2.52	93.9	75-125		
Nickel	43.4	0.400	"	40.0	2.51	102	75-125		
Selenium	4.02	0.260	"	4.00	0.267	93.7	75-125		
Silver	1.97	0.0200	"	2.00	0.0122	97.9	75-125		
Zinc	55.8	0.400	"	40.0	11.5	111	75-125		

**Matrix Spike Dup (BGB0306-MSD1)**

Source: 2301163-02

Prepared: 02/10/23 Analyzed: 02/12/23

Arsenic	46.6	0.200	mg/kg wet	40.0	1.40	113	75-125	4.25	25
Barium	66.3	0.400	"	40.0	22.5	109	75-125	6.01	25
Cadmium	2.22	0.200	"	2.00	0.0473	108	75-125	5.89	25
Copper	44.8	0.400	"	40.0	2.22	106	75-125	4.80	25
Lead	22.6	0.200	"	20.0	2.52	101	75-125	6.08	25
Nickel	45.1	0.400	"	40.0	2.51	107	75-125	3.99	25
Selenium	4.59	0.260	"	4.00	0.267	108	75-125	13.3	25
Silver	2.06	0.0200	"	2.00	0.0122	102	75-125	4.41	25
Zinc	58.7	0.400	"	40.0	11.5	118	75-125	5.09	25

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

02/13/23 16:30

## Hexavalent Chromium by EPA Method 7196 - Quality Control

### Summit Scientific

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

#### Batch BGB0315 - 3060A Mod

##### Blank (BGB0315-BLK1)

Prepared & Analyzed: 02/10/23

Chromium, Hexavalent ND 0.30 mg/kg wet

##### LCS (BGB0315-BS1)

Prepared & Analyzed: 02/10/23

Chromium, Hexavalent 25.8 0.30 mg/kg wet 25.0 103 80-120

##### Duplicate (BGB0315-DUP1)

Source: 2302190-01

Prepared & Analyzed: 02/10/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

##### Matrix Spike (BGB0315-MS1)

Source: 2302190-01

Prepared & Analyzed: 02/10/23

Chromium, Hexavalent 31.1 0.30 mg/kg dry 29.8 ND 104 75-125

##### Matrix Spike Dup (BGB0315-MSD1)

Source: 2302190-01

Prepared & Analyzed: 02/10/23

Chromium, Hexavalent 31.2 0.30 mg/kg dry 29.8 ND 105 75-125 0.383 20

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

02/13/23 16:30

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

### Summit Scientific

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

#### Batch BGB0285 - General Preparation

##### Blank (BGB0285-BLK1)

Prepared: 02/09/23 Analyzed: 02/12/23

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

##### LCS (BGB0285-BS1)

Prepared: 02/09/23 Analyzed: 02/12/23

Calcium	5.10	0.0500	mg/L wet	5.00	102	70-130
Magnesium	5.19	0.0500	"	5.00	104	70-130
Sodium	5.47	0.0500	"	5.00	109	70-130

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

02/13/23 16:30

### 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 BGB0334 - General Preparation

**Duplicate (BGB0334-DUP1)**

**Source: 2302188-01**

Prepared & Analyzed: 02/12/23

% Solids	88.7	%		89.5		0.965	20
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Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

02/13/23 16:30

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

#### Summit Scientific

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

#### Batch BGB0317 - General Preparation

##### Blank (BGB0317-BLK1)

Prepared & Analyzed: 02/10/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

##### LCS (BGB0317-BS1)

Prepared & Analyzed: 02/10/23

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

##### Duplicate (BGB0317-DUP1)

Source: 2302184-01

Prepared & Analyzed: 02/10/23

Specific Conductance (EC) 1.22 0.0100 mmhos/cm 1.24 1.71 20

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

02/13/23 16:30

**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 BGB0316 - General Preparation**

**LCS (BGB0316-BS1)**

Prepared & Analyzed: 02/10/23

pH	9.00	pH Units	9.18	98.0	95-105
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**Duplicate (BGB0316-DUP1)**

Source: 2302184-01

Prepared & Analyzed: 02/10/23

pH	7.70	pH Units	7.60	1.31	20
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Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/13/23 16:30

### 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.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 21, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - SLW Ranch B12-55-1HN

Work Order # 2303447

Enclosed are the results of analyses for samples received by Summit Scientific on 03/16/23 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Scott Sheely For Paul Shrewsbury

President



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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BG01@0.5'	2303447-01	Soil	03/16/23 11:45	03/16/23 17:30
BG01@3'	2303447-02	Soil	03/16/23 11:45	03/16/23 17:30
BG02@0.5'	2303447-03	Soil	03/16/23 11:50	03/16/23 17:30
BG02@3'	2303447-04	Soil	03/16/23 11:50	03/16/23 17:30
BG03@0.5'	2303447-05	Soil	03/16/23 11:55	03/16/23 17:30
BG03@3'	2303447-06	Soil	03/16/23 11:55	03/16/23 17:30
BG04@0.5'	2303447-07	Soil	03/16/23 12:00	03/16/23 17:30
BG04@3'	2303447-08	Soil	03/16/23 12:00	03/16/23 17:30
BG05@0.5'	2303447-09	Soil	03/16/23 12:05	03/16/23 17:30
BG05@3'	2303447-10	Soil	03/16/23 12:05	03/16/23 17:30

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.*

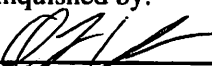



Client: Noble / Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W. 119th Ave		Project Manager: Jake Whritenour		Company: Chevron	
City/State/Zip: Broomfield, CO 80020		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location:	
Phone: <del>303-261-6246</del> 303-808-3315		Project Name: <u>SLW Ranch Bl 2-65-1HN</u>		AFE#:	
Sampler Name: <del>Stanley Gilbert</del> <u>Allan Engelhardt</u>		Project Number:		PO/Billing Codes:	
		Contact:			

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS	Metals - 915		HOLD
1	B601@0.5'	3/16/23	1145	2			X			X						X	X	X		pH, EC, SAR by saturated paste
2	B601@3'		1145				X									X	X	X		
3	B602@0.5'		1150																	
4	B602@3'		1150																	
5	B603@0.5'		1156																	
6	B603@3'		1155																	
7	B604@0.5'		1200																	
8	B604@3'		1200																	
9	B605@0.5'		1205																	
10	B605@3'	✓	1203	✓																
11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 3/16/23 1730	Received by: 	Date/Time: 3/16/23 1730	TAT Business Days	Field DO	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 8.9		Corrected Temperature: 0		IR gun #:		HNO3 lot #:

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2307442Client: Noble FarmmanClient Project ID: SLW Ranch B12-CES-1HNShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐Airbill #:                     

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

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☐

Other

☐

Temp (°C)

8.9

Thermometer #

1

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

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

Custodian Printed Name

Date/Time



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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG01@0.5'**  
**2303447-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0843	0.0100		mg/L	1	BGC0520	03/17/23	03/20/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.87	0.211	0.178	mg/kg dry	1	BGC0510	03/16/23	03/18/23	EPA 6020B	
Barium	26.6	0.422	0.333	"	"	"	"	"	"	
Cadmium	0.101	0.211	0.00759	"	"	"	"	"	"	
Copper	1.80	0.422	0.0220	"	"	"	"	"	"	
Lead	2.83	0.211	0.0580	"	"	"	"	"	"	
Nickel	1.50	0.422	0.0643	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.00886	0.0211	0.00282	"	"	"	"	"	"	
Zinc	6.84	0.422	0.280	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0639	03/20/23	03/20/23	EPA 7196A	

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

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	48.9	0.0527		mg/L dry	1	BGC0546	03/17/23	03/20/23	EPA 6020B	
Magnesium	13.1	0.0527		"	"	"	"	"	"	
Sodium	5.39	0.0527		"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG01@0.5'**  
**2303447-01 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Sodium Adsorption Ratio	0.177	0.00100		units	1	BGC0620	03/20/23	03/20/23	Calculation	

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

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	94.8			%	1	BGC0522	03/17/23	03/17/23	Calculation	

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

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.148	0.0100		mmhos/cm	1	BGC0566	03/18/23	03/20/23	EPA 120.1	

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

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.42			pH Units	1	BGC0567	03/18/23	03/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG01@3'**  
**2303447-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0472	0.0100		mg/L	1	BGC0520	03/17/23	03/20/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.722	0.203	0.171	mg/kg dry	1	BGC0510	03/16/23	03/18/23	EPA 6020B	
Barium	22.4	0.406	0.320	"	"	"	"	"	"	
Cadmium	0.0454	0.203	0.00730	"	"	"	"	"	"	
Copper	1.03	0.406	0.0212	"	"	"	"	"	"	
Lead	1.61	0.203	0.0557	"	"	"	"	"	"	
Nickel	0.827	0.406	0.0619	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.00730	0.0203	0.00271	"	"	"	"	"	"	
Zinc	3.73	0.406	0.270	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0639	03/20/23	03/20/23	EPA 7196A	

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

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	61.8	0.0507		mg/L dry	1	BGC0546	03/17/23	03/20/23	EPA 6020B	
Magnesium	9.20	0.0507		"	"	"	"	"	"	
Sodium	6.21	0.0507		"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG01@3'**  
**2303447-02 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	<b>0.195</b>	0.00100		units	1	BGC0620	03/20/23	03/20/23	Calculation	

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

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>98.6</b>			%	1	BGC0522	03/17/23	03/17/23	Calculation	

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

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.138</b>	0.0100		mmhos/cm	1	BGC0566	03/18/23	03/20/23	EPA 120.1	

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

Date Sampled: **03/16/23 11:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>8.53</b>			pH Units	1	BGC0567	03/18/23	03/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG02@0.5'**  
**2303447-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.225	0.0100		mg/L	1	BGC0520	03/17/23	03/20/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.722	0.216	0.182	mg/kg dry	1	BGC0510	03/16/23	03/18/23	EPA 6020B	
Barium	18.0	0.432	0.342	"	"	"	"	"	"	
Cadmium	0.0770	0.216	0.00778	"	"	"	"	"	"	
Copper	1.65	0.432	0.0226	"	"	"	"	"	"	
Lead	2.87	0.216	0.0594	"	"	"	"	"	"	
Nickel	1.29	0.432	0.0659	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.0264	0.0216	0.00289	"	"	"	"	"	"	
Zinc	6.34	0.432	0.288	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0639	03/20/23	03/20/23	EPA 7196A	

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

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	125	0.0540		mg/L dry	1	BGC0546	03/17/23	03/20/23	EPA 6020B	
Magnesium	47.8	0.0540		"	"	"	"	"	"	
Sodium	2.13	0.0540		"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG02@0.5'**  
**2303447-03 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Sodium Adsorption Ratio	0.0411	0.00100		units	1	BGC0620	03/20/23	03/20/23	Calculation	

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

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.5			%	1	BGC0522	03/17/23	03/17/23	Calculation	

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

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.185	0.0100		mmhos/cm	1	BGC0566	03/18/23	03/20/23	EPA 120.1	

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

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.27			pH Units	1	BGC0567	03/18/23	03/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG02@3'**  
**2303447-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.109	0.0100		mg/L	1	BGC0520	03/17/23	03/20/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.71	0.204	0.172	mg/kg dry	1	BGC0510	03/16/23	03/18/23	EPA 6020B	
Barium	35.2	0.408	0.322	"	"	"	"	"	"	
Cadmium	0.105	0.204	0.00734	"	"	"	"	"	"	
Copper	2.26	0.408	0.0213	"	"	"	"	"	"	
Lead	2.70	0.204	0.0560	"	"	"	"	"	"	
Nickel	1.47	0.408	0.0622	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.0106	0.0204	0.00272	"	"	"	"	"	"	
Zinc	6.20	0.408	0.271	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0639	03/20/23	03/20/23	EPA 7196A	

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

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	21.1	0.0510		mg/L dry	1	BGC0546	03/17/23	03/20/23	EPA 6020B	
Magnesium	6.98	0.0510		"	"	"	"	"	"	
Sodium	7.00	0.0510		"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG02@3'**  
**2303447-04 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Sodium Adsorption Ratio	0.338	0.00100		units	1	BGC0620	03/20/23	03/20/23	Calculation	

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

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	98.1			%	1	BGC0522	03/17/23	03/17/23	Calculation	

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

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.176	0.0100		mmhos/cm	1	BGC0566	03/18/23	03/20/23	EPA 120.1	

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

Date Sampled: **03/16/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.30			pH Units	1	BGC0567	03/18/23	03/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG03@0.5'**  
**2303447-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.395	0.0100		mg/L	1	BGC0520	03/17/23	03/20/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.25	0.214	0.180	mg/kg dry	1	BGC0510	03/16/23	03/18/23	EPA 6020B	
Barium	25.5	0.428	0.338	"	"	"	"	"	"	
Cadmium	0.105	0.214	0.00770	"	"	"	"	"	"	
Copper	2.13	0.428	0.0224	"	"	"	"	"	"	
Lead	3.81	0.214	0.0588	"	"	"	"	"	"	
Nickel	1.71	0.428	0.0653	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.0257	0.0214	0.00286	"	"	"	"	"	"	
Zinc	8.09	0.428	0.285	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0639	03/20/23	03/20/23	EPA 7196A	

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

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	103	0.0535		mg/L dry	1	BGC0546	03/17/23	03/20/23	EPA 6020B	
Magnesium	28.8	0.0535		"	"	"	"	"	"	
Sodium	4.34	0.0535		"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG03@0.5'**  
**2303447-05 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Sodium Adsorption Ratio	0.0974	0.00100		units	1	BGC0620	03/20/23	03/20/23	Calculation	

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

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	93.5			%	1	BGC0522	03/17/23	03/17/23	Calculation	

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

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.321	0.0100		mmhos/cm	1	BGC0566	03/18/23	03/20/23	EPA 120.1	

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

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.82			pH Units	1	BGC0567	03/18/23	03/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG03@3'**  
**2303447-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0475	0.0100		mg/L	1	BGC0520	03/17/23	03/20/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.08	0.202	0.171	mg/kg dry	1	BGC0510	03/16/23	03/19/23	EPA 6020B	
Barium	39.4	0.405	0.320	"	"	"	"	"	"	
Cadmium	0.0676	0.202	0.00729	"	"	"	"	"	"	
Copper	1.20	0.405	0.0212	"	"	"	"	"	"	
Lead	2.20	0.202	0.0556	"	"	"	"	"	"	
Nickel	1.14	0.405	0.0617	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.00607	0.0202	0.00270	"	"	"	"	"	"	
Zinc	4.60	0.405	0.269	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0639	03/20/23	03/20/23	EPA 7196A	

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

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	22.4	0.0506		mg/L dry	1	BGC0546	03/17/23	03/20/23	EPA 6020B	
Magnesium	6.60	0.0506		"	"	"	"	"	"	
Sodium	5.81	0.0506		"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG03@3'**  
**2303447-06 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Sodium Adsorption Ratio	0.277	0.00100		units	1	BGC0620	03/20/23	03/20/23	Calculation	

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

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	98.8			%	1	BGC0522	03/17/23	03/17/23	Calculation	

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

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.170	0.0100		mmhos/cm	1	BGC0566	03/18/23	03/20/23	EPA 120.1	

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

Date Sampled: **03/16/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.15			pH Units	1	BGC0567	03/18/23	03/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG04@0.5'**  
**2303447-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.175	0.0100		mg/L	1	BGC0520	03/17/23	03/20/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.26	0.220	0.186	mg/kg dry	1	BGC0510	03/16/23	03/19/23	EPA 6020B	
Barium	24.2	0.441	0.348	"	"	"	"	"	"	
Cadmium	0.122	0.220	0.00793	"	"	"	"	"	"	
Copper	2.32	0.441	0.0230	"	"	"	"	"	"	
Lead	4.48	0.220	0.0605	"	"	"	"	"	"	
Nickel	1.86	0.441	0.0672	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.0278	0.0220	0.00294	"	"	"	"	"	"	
Zinc	9.53	0.441	0.293	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0639	03/20/23	03/20/23	EPA 7196A	

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

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	75.7	0.0551		mg/L dry	1	BGC0546	03/17/23	03/20/23	EPA 6020B	
Magnesium	18.2	0.0551		"	"	"	"	"	"	
Sodium	1.45	0.0551		"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG04@0.5'**  
**2303447-07 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0388	0.00100		units	1	BGC0620	03/20/23	03/20/23	Calculation	

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

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.8			%	1	BGC0522	03/17/23	03/17/23	Calculation	

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

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.220	0.0100		mmhos/cm	1	BGC0566	03/18/23	03/20/23	EPA 120.1	

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

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.13			pH Units	1	BGC0567	03/18/23	03/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG04@3'**  
**2303447-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0660	0.0100		mg/L	1	BGC0520	03/17/23	03/20/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.29	0.207	0.175	mg/kg dry	1	BGC0510	03/16/23	03/19/23	EPA 6020B	
Barium	12.8	0.415	0.328	"	"	"	"	"	"	
Cadmium	0.0655	0.207	0.00746	"	"	"	"	"	"	
Copper	1.30	0.415	0.0217	"	"	"	"	"	"	
Lead	2.44	0.207	0.0570	"	"	"	"	"	"	
Nickel	0.824	0.415	0.0632	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.00498	0.0207	0.00277	"	"	"	"	"	"	
Zinc	4.04	0.415	0.276	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0639	03/20/23	03/20/23	EPA 7196A	

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

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	58.5	0.0518		mg/L dry	1	BGC0546	03/17/23	03/20/23	EPA 6020B	
Magnesium	13.7	0.0518		"	"	"	"	"	"	
Sodium	7.13	0.0518		"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG04@3'**  
**2303447-08 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Sodium Adsorption Ratio	0.218	0.00100		units	1	BGC0620	03/20/23	03/20/23	Calculation	

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

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	96.5			%	1	BGC0522	03/17/23	03/17/23	Calculation	

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

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.142	0.0100		mmhos/cm	1	BGC0566	03/18/23	03/20/23	EPA 120.1	

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

Date Sampled: **03/16/23 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.69			pH Units	1	BGC0567	03/18/23	03/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG05@0.5'**  
**2303447-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0643	0.0100		mg/L	1	BGC0520	03/17/23	03/20/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.20	0.213	0.180	mg/kg dry	1	BGC0510	03/16/23	03/19/23	EPA 6020B	
Barium	33.6	0.426	0.337	"	"	"	"	"	"	
Cadmium	0.0703	0.213	0.00767	"	"	"	"	"	"	
Copper	1.65	0.426	0.0223	"	"	"	"	"	"	
Lead	2.66	0.213	0.0586	"	"	"	"	"	"	
Nickel	1.27	0.426	0.0650	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.00682	0.0213	0.00285	"	"	"	"	"	"	
Zinc	5.62	0.426	0.283	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0639	03/20/23	03/20/23	EPA 7196A	

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

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	125	0.0533		mg/L dry	1	BGC0546	03/17/23	03/20/23	EPA 6020B	
Magnesium	16.6	0.0533		"	"	"	"	"	"	
Sodium	16.2	0.0533		"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG05@0.5'**  
**2303447-09 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Sodium Adsorption Ratio	0.361	0.00100		units	1	BGC0620	03/20/23	03/20/23	Calculation	

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

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	93.8			%	1	BGC0522	03/17/23	03/17/23	Calculation	

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

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.266	0.0100		mmhos/cm	1	BGC0566	03/18/23	03/20/23	EPA 120.1	

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

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.74			pH Units	1	BGC0567	03/18/23	03/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG05@3'**  
**2303447-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0760	0.0100		mg/L	1	BGC0520	03/17/23	03/20/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.48	0.204	0.172	mg/kg dry	1	BGC0510	03/16/23	03/19/23	EPA 6020B	
Barium	43.6	0.408	0.322	"	"	"	"	"	"	
Cadmium	0.125	0.204	0.00735	"	"	"	"	"	"	
Copper	2.13	0.408	0.0213	"	"	"	"	"	"	
Lead	5.76	0.204	0.0561	"	"	"	"	"	"	
Nickel	1.72	0.408	0.0623	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.00939	0.0204	0.00272	"	"	"	"	"	"	
Zinc	7.60	0.408	0.271	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0639	03/20/23	03/20/23	EPA 7196A	

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

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	66.6	0.0510		mg/L dry	1	BGC0546	03/17/23	03/20/23	EPA 6020B	
Magnesium	10.8	0.0510		"	"	"	"	"	"	
Sodium	11.0	0.0510		"	"	"	"	"	"	

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 - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

**BG05@3'**  
**2303447-10 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Sodium Adsorption Ratio	0.330	0.00100		units	1	BGC0620	03/20/23	03/20/23	Calculation	

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

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	98.0			%	1	BGC0522	03/17/23	03/17/23	Calculation	

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

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.220	0.0100		mmhos/cm	1	BGC0566	03/18/23	03/20/23	EPA 120.1	

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

Date Sampled: **03/16/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.33			pH Units	1	BGC0567	03/18/23	03/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/21/23 13:25

### 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 BGC0520 - EPA 3050B

##### Blank (BGC0520-BLK1)

Prepared: 03/17/23 Analyzed: 03/19/23

Boron ND 0.0100 mg/L

##### LCS (BGC0520-BS1)

Prepared: 03/17/23 Analyzed: 03/19/23

Boron 5.10 0.0100 mg/L 5.00 102 80-120

##### Duplicate (BGC0520-DUP1)

Source: 2303319-01

Prepared: 03/17/23 Analyzed: 03/19/23

Boron 0.199 0.0100 mg/L 0.203 1.78 20

##### Matrix Spike (BGC0520-MS1)

Source: 2303319-01

Prepared: 03/17/23 Analyzed: 03/19/23

Boron 5.22 0.0100 mg/L 5.00 0.203 100 75-125

##### Matrix Spike Dup (BGC0520-MSD1)

Source: 2303319-01

Prepared: 03/17/23 Analyzed: 03/19/23

Boron 5.25 0.0100 mg/L 5.00 0.203 101 75-125 0.659 25

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

### Total Metals by EPA 6020B - Quality Control

#### Summit Scientific

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

#### Batch BGC0510 - EPA 3050B

##### Blank (BGC0510-BLK1)

Prepared: 03/16/23 Analyzed: 03/18/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	0.181	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

##### LCS (BGC0510-BS1)

Prepared: 03/16/23 Analyzed: 03/18/23

Arsenic	38.6	0.200	mg/kg wet	40.0	96.6	80-120
Barium	38.1	0.400	"	40.0	95.2	80-120
Cadmium	1.89	0.200	"	2.00	94.5	80-120
Copper	38.8	0.400	"	40.0	97.1	80-120
Lead	18.8	0.200	"	20.0	93.9	80-120
Nickel	37.5	0.400	"	40.0	93.6	80-120
Selenium	3.81	0.260	"	4.00	95.3	80-120
Silver	1.75	0.0200	"	2.00	87.4	80-120
Zinc	37.9	0.400	"	40.0	94.6	80-120

##### Duplicate (BGC0510-DUP1)

Source: 2303326-07

Prepared: 03/16/23 Analyzed: 03/18/23

Arsenic	0.899	0.210	mg/kg dry	0.841	6.67	20
Barium	35.0	0.420	"	33.6	4.16	20
Cadmium	0.0718	0.210	"	0.0727	1.16	20
Copper	2.03	0.420	"	1.97	3.30	20
Lead	2.74	0.210	"	2.63	4.16	20
Nickel	1.82	0.420	"	1.76	3.80	20
Selenium	ND	0.260	"	ND		20
Silver	0.0118	0.0210	"	0.0109	7.41	20
Zinc	8.00	0.420	"	7.81	2.34	20

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

### Total Metals by EPA 6020B - Quality Control

#### Summit Scientific

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

#### Batch BGC0510 - EPA 3050B

##### Matrix Spike (BGC0510-MS1)

Source: 2303326-07

Prepared: 03/16/23 Analyzed: 03/18/23

Arsenic	43.2	0.210	mg/kg dry	42.0	0.841	101	75-125		
Barium	77.2	0.420	"	42.0	33.6	104	75-125		
Cadmium	2.16	0.210	"	2.10	0.0727	99.5	75-125		
Copper	37.0	0.420	"	42.0	1.97	83.4	75-125		
Lead	23.5	0.210	"	21.0	2.63	99.4	75-125		
Nickel	35.9	0.420	"	42.0	1.76	81.2	75-125		
Selenium	4.06	0.260	"	4.20	ND	96.6	75-125		
Silver	1.86	0.0210	"	2.10	0.0109	88.1	75-125		
Zinc	43.3	0.420	"	42.0	7.81	84.4	75-125		

##### Matrix Spike Dup (BGC0510-MSD1)

Source: 2303326-07

Prepared: 03/16/23 Analyzed: 03/18/23

Arsenic	44.9	0.210	mg/kg dry	42.0	0.841	105	75-125	3.83	25
Barium	83.0	0.420	"	42.0	33.6	118	75-125	7.21	25
Cadmium	2.33	0.210	"	2.10	0.0727	108	75-125	7.59	25
Copper	38.3	0.420	"	42.0	1.97	86.6	75-125	3.52	25
Lead	25.3	0.210	"	21.0	2.63	108	75-125	7.54	25
Nickel	37.1	0.420	"	42.0	1.76	84.2	75-125	3.53	25
Selenium	4.21	0.260	"	4.20	ND	100	75-125	3.56	25
Silver	1.95	0.0210	"	2.10	0.0109	92.4	75-125	4.69	25

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

### Hexavalent Chromium by EPA Method 7196 - Quality Control Summit Scientific

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

#### Batch BGC0639 - 3060A Mod

##### Blank (BGC0639-BLK1)

Prepared & Analyzed: 03/20/23

Chromium, Hexavalent ND 0.30 mg/kg wet

##### LCS (BGC0639-BS1)

Prepared & Analyzed: 03/20/23

Chromium, Hexavalent 21.4 0.30 mg/kg wet 25.0 85.4 80-120

##### Duplicate (BGC0639-DUP1)

Source: 2303341-01

Prepared & Analyzed: 03/20/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

##### Matrix Spike (BGC0639-MS1)

Source: 2303341-01

Prepared & Analyzed: 03/20/23

Chromium, Hexavalent 26.0 0.30 mg/kg dry 32.3 ND 80.4 75-125

##### Matrix Spike Dup (BGC0639-MSD1)

Source: 2303341-01

Prepared & Analyzed: 03/20/23

Chromium, Hexavalent 24.8 0.30 mg/kg dry 32.3 ND 76.8 75-125 4.58 20

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/21/23 13:25

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

### Summit Scientific

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

#### Batch BGC0546 - General Preparation

##### Blank (BGC0546-BLK1)

Prepared: 03/17/23 Analyzed: 03/20/23

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

##### LCS (BGC0546-BS1)

Prepared: 03/17/23 Analyzed: 03/20/23

Calcium	6.14	0.0500	mg/L wet	5.00	123	70-130
Magnesium	6.40	0.0500	"	5.00	128	70-130
Sodium	6.17	0.0500	"	5.00	123	70-130

Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/21/23 13:25

### 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 BGC0522 - General Preparation

**Duplicate (BGC0522-DUP1)**

**Source: 2303157-12**

**Prepared & Analyzed: 03/17/23**

% Solids	84.4	%	84.0	0.479	20
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Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

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

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

**Batch BGC0566 - General Preparation**

**Blank (BGC0566-BLK1)**

Prepared: 03/18/23 Analyzed: 03/20/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGC0566-BS1)**

Prepared: 03/18/23 Analyzed: 03/20/23

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 95-105

**Duplicate (BGC0566-DUP1)**

**Source: 2303445-01**

Prepared: 03/18/23 Analyzed: 03/20/23

Specific Conductance (EC) 0.969 0.0100 mmhos/cm 0.977 0.853 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 - SLW Ranch B12-55-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/21/23 13:25

## 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 BGC0567 - General Preparation

##### LCS (BGC0567-BS1)

Prepared: 03/18/23 Analyzed: 03/20/23

pH	9.15	pH Units	9.18	99.7	95-105
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##### Duplicate (BGC0567-DUP1)

Source: 2303445-01

Prepared: 03/18/23 Analyzed: 03/20/23

pH	7.89	pH Units	7.87	0.254	20
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Summit Scientific

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

Project: Noble - SLW Ranch B12-55-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/21/23 13:25

### 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 80401

303.277.9310

March 28, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - SLW Ranch B12-65-1HN

Work Order # 2303516

Enclosed are the results of analyses for samples received by Summit Scientific on 03/20/23 17:38. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS07@2'	2303516-01	Soil	03/20/23 14:05	03/20/23 17:38
SS08@2'	2303516-02	Soil	03/20/23 14:07	03/20/23 17:38
SS09@2'	2303516-03	Soil	03/20/23 14:08	03/20/23 17:38
SS10@2'	2303516-04	Soil	03/20/23 14:12	03/20/23 17:38
FS02@2.5'	2303516-05	Soil	03/20/23 14:00	03/20/23 17:38

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.*





S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2303516Client: Norve / Tasman Client Project ID: SLW Ranch B12-b5-1HNShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☒ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.7 Thermometer # ☐

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

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

AS  
Custodian Printed Name

3/20/23  
Date/Time

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS07@2'**  
**2303516-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/20/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGC0673	03/21/23	03/23/23	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: **03/20/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0676	03/21/23	03/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/20/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		55.7 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS07@2'**  
**2303516-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGC0872	03/25/23	03/27/23	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: **03/20/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		71.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		78.0 %		40-150		"	"	"	"	

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

Date Sampled: **03/20/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0912	0.0100		mg/L	1	BGC0871	03/25/23	03/26/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/23 14:05**

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

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS07@2'**  
**2303516-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.00	0.211	0.178	mg/kg dry	1	BGC0781	03/23/23	03/24/23	EPA 6020B
Barium	50.2	0.422	0.333	"	"	"	"	"	"
Cadmium	0.0822	0.211	0.00759	"	"	"	"	"	"
Copper	3.53	0.422	0.0220	"	"	"	"	"	"
Lead	2.75	0.211	0.0579	"	"	"	"	"	"
Nickel	2.91	0.422	0.0643	"	"	"	"	"	"
Selenium	ND	0.260	0.175	"	"	"	"	"	"
Silver	0.0126	0.0211	0.00281	"	"	"	"	"	"
Zinc	9.97	0.422	0.280	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0905	03/27/23	03/27/23	EPA 7196A	

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

Date Sampled: **03/20/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	45.5	0.0527		mg/L dry	1	BGC0865	03/25/23	03/28/23	EPA 6020B	
Magnesium	18.8	0.0527		"	"	"	"	"	"	
Sodium	15.6	0.0527		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.492	0.00100		units	1	BGC0945	03/28/23	03/28/23	Calculation	

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

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS07@2'**  
**2303516-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/20/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	94.9			%	1	BGC0783	03/23/23	03/24/23	Calculation	

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

Date Sampled: **03/20/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.602	0.0100		mmhos/cm	1	BGC0893	03/26/23	03/26/23	EPA 120.1	

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

Date Sampled: **03/20/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.76			pH Units	1	BGC0892	03/26/23	03/26/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS08@2'**  
**2303516-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/20/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0673	03/21/23	03/23/23	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: **03/20/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		96.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0676	03/21/23	03/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/20/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		61.3 %		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 - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS08@2'**  
**2303516-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGC0872	03/25/23	03/27/23	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: **03/20/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		66.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.3 %		40-150		"	"	"	"	

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

Date Sampled: **03/20/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0986	0.0100		mg/L	1	BGC0871	03/25/23	03/26/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/23 14:07**

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

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS08@2'**  
**2303516-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.04	0.209	0.176	mg/kg dry	1	BGC0781	03/23/23	03/24/23	EPA 6020B
Barium	30.2	0.418	0.330	"	"	"	"	"	"
Cadmium	0.0970	0.209	0.00753	"	"	"	"	"	"
Copper	4.09	0.418	0.0218	"	"	"	"	"	"
Lead	3.37	0.209	0.0574	"	"	"	"	"	"
Nickel	2.80	0.418	0.0638	"	"	"	"	"	"
Selenium	ND	0.260	0.175	"	"	"	"	"	"
Silver	0.0142	0.0209	0.00279	"	"	"	"	"	"
Zinc	10.2	0.418	0.278	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/23 14:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0905	03/27/23	03/27/23	EPA 7196A	

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

Date Sampled: **03/20/23 14:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	52.5	0.0523		mg/L dry	1	BGC0865	03/25/23	03/28/23	EPA 6020B	
Magnesium	8.13	0.0523		"	"	"	"	"	"	
Sodium	12.3	0.0523		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/23 14:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.417	0.00100		units	1	BGC0945	03/28/23	03/28/23	Calculation	

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

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS08@2'**  
**2303516-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/20/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	95.7			%	1	BGC0783	03/23/23	03/24/23	Calculation	

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

Date Sampled: **03/20/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.500	0.0100		mmhos/cm	1	BGC0893	03/26/23	03/26/23	EPA 120.1	

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

Date Sampled: **03/20/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.92			pH Units	1	BGC0892	03/26/23	03/26/23	EPA 9045D	

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS09@2'**  
**2303516-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/20/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0673	03/21/23	03/23/23	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: **03/20/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		110 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0676	03/21/23	03/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/20/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		58.7 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS09@2'**  
**2303516-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/23 14:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0872	03/25/23	03/27/23	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: **03/20/23 14:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		76.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		80.9 %		40-150		"	"	"	"	

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

Date Sampled: **03/20/23 14:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0911</b>	0.0100		mg/L	1	BGC0871	03/25/23	03/26/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/23 14:08**

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS09@2'**  
**2303516-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.27	0.212	0.178	mg/kg dry	1	BGC0781	03/23/23	03/24/23	EPA 6020B
Barium	47.0	0.423	0.334	"	"	"	"	"	"
Cadmium	0.0901	0.212	0.00762	"	"	"	"	"	"
Copper	4.01	0.423	0.0221	"	"	"	"	"	"
Lead	2.96	0.212	0.0581	"	"	"	"	"	"
Nickel	3.23	0.423	0.0645	"	"	"	"	"	"
Selenium	ND	0.260	0.175	"	"	"	"	"	"
Silver	0.0110	0.0212	0.00282	"	"	"	"	"	"
Zinc	10.8	0.423	0.281	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/23 14:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0905	03/27/23	03/27/23	EPA 7196A	

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

Date Sampled: **03/20/23 14:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	59.3	0.0529		mg/L dry	1	BGC0865	03/25/23	03/28/23	EPA 6020B	
Magnesium	16.8	0.0529		"	"	"	"	"	"	
Sodium	63.7	0.0529		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/23 14:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.88	0.00100		units	1	BGC0945	03/28/23	03/28/23	Calculation	

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

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS09@2'**  
**2303516-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/20/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	94.5			%	1	BGC0783	03/23/23	03/24/23	Calculation	

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

Date Sampled: **03/20/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.950	0.0100		mmhos/cm	1	BGC0893	03/26/23	03/26/23	EPA 120.1	

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

Date Sampled: **03/20/23 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.49			pH Units	1	BGC0892	03/26/23	03/26/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS10@2'**  
**2303516-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/20/23 14:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0673	03/21/23	03/23/23	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: **03/20/23 14:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		94.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		110 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/23 14:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0676	03/21/23	03/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/20/23 14:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		49.5 %		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 - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS10@2'**  
**2303516-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/23 14:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0872	03/25/23	03/27/23	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: **03/20/23 14:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		75.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		82.6 %		40-150		"	"	"	"	

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

Date Sampled: **03/20/23 14:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.180</b>	0.0100		mg/L	1	BGC0871	03/25/23	03/26/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/23 14:12**

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS10@2'**  
**2303516-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.76	0.212	0.179	mg/kg dry	1	BGC0781	03/23/23	03/24/23	EPA 6020B
Barium	53.2	0.425	0.336	"	"	"	"	"	"
Cadmium	0.0935	0.212	0.00765	"	"	"	"	"	"
Copper	4.96	0.425	0.0222	"	"	"	"	"	"
Lead	3.39	0.212	0.0584	"	"	"	"	"	"
Nickel	3.45	0.425	0.0648	"	"	"	"	"	"
Selenium	ND	0.260	0.175	"	"	"	"	"	"
Silver	0.0119	0.0212	0.00284	"	"	"	"	"	"
Zinc	12.5	0.425	0.282	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/23 14:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0905	03/27/23	03/27/23	EPA 7196A	

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

Date Sampled: **03/20/23 14:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	46.6	0.0531		mg/L dry	1	BGC0865	03/25/23	03/28/23	EPA 6020B	
Magnesium	12.6	0.0531		"	"	"	"	"	"	
Sodium	114	0.0531		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/23 14:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.82	0.00100		units	1	BGC0945	03/28/23	03/28/23	Calculation	

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

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**SS10@2'**  
**2303516-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/20/23 14:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	94.2			%	1	BGC0783	03/23/23	03/24/23	Calculation	

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

Date Sampled: **03/20/23 14:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.697	0.0100		mmhos/cm	1	BGC0893	03/26/23	03/26/23	EPA 120.1	

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

Date Sampled: **03/20/23 14:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.47			pH Units	1	BGC0892	03/26/23	03/26/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**FS02@2.5'**  
**2303516-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/20/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGC0673	03/21/23	03/23/23	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: **03/20/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0676	03/21/23	03/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/20/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		64.2 %		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 - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**FS02@2.5'**  
**2303516-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0872	03/25/23	03/27/23	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: **03/20/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		81.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		85.7 %		40-150		"	"	"	"	

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

Date Sampled: **03/20/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.154</b>	0.0100		mg/L	1	BGC0871	03/25/23	03/26/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/23 14:00**

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**FS02@2.5'**  
**2303516-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.96	0.210	0.177	mg/kg dry	1	BGC0781	03/23/23	03/24/23	EPA 6020B
Barium	49.0	0.421	0.332	"	"	"	"	"	"
Cadmium	0.107	0.210	0.00757	"	"	"	"	"	"
Copper	4.41	0.421	0.0220	"	"	"	"	"	"
Lead	3.38	0.210	0.0578	"	"	"	"	"	"
Nickel	3.51	0.421	0.0641	"	"	"	"	"	"
Selenium	ND	0.260	0.175	"	"	"	"	"	"
Silver	0.0122	0.0210	0.00281	"	"	"	"	"	"
Zinc	11.9	0.421	0.280	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0905	03/27/23	03/27/23	EPA 7196A	

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

Date Sampled: **03/20/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	47.4	0.0526		mg/L dry	1	BGC0865	03/25/23	03/28/23	EPA 6020B	
Magnesium	10.5	0.0526		"	"	"	"	"	"	
Sodium	84.3	0.0526		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.89	0.00100		units	1	BGC0945	03/28/23	03/28/23	Calculation	

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

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**FS02@2.5'**  
**2303516-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/20/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	95.1			%	1	BGC0783	03/23/23	03/24/23	Calculation	

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

Date Sampled: **03/20/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.888	0.0100		mmhos/cm	1	BGC0893	03/26/23	03/26/23	EPA 120.1	

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

Date Sampled: **03/20/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.45			pH Units	1	BGC0892	03/26/23	03/26/23	EPA 9045D	

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

Reported:  
03/28/23 12:12

## 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 BGC0673 - EPA 5030 Soil MS

##### Blank (BGC0673-BLK1)

Prepared: 03/21/23 Analyzed: 03/23/23

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	0.0396		"	0.0400		99.1	50-150			
Surrogate: Toluene-d8	0.0431		"	0.0400		108	50-150			
Surrogate: 4-Bromofluorobenzene	0.0451		"	0.0400		113	50-150			

##### LCS (BGC0673-BS1)

Prepared: 03/21/23 Analyzed: 03/23/23

Benzene	0.162	0.0020	mg/kg	0.125		130	70-130			
Toluene	0.160	0.0050	"	0.125		128	70-130			
Ethylbenzene	0.147	0.0050	"	0.125		117	70-130			
m,p-Xylene	0.290	0.010	"	0.250		116	70-130			
o-Xylene	0.127	0.0050	"	0.125		102	70-130			
1,2,4-Trimethylbenzene	0.136	0.0050	"	0.125		109	70-130			
1,3,5-Trimethylbenzene	0.143	0.0050	"	0.125		114	70-130			
Naphthalene	0.0895	0.0038	"	0.125		71.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0397		"	0.0400		99.2	50-150			
Surrogate: Toluene-d8	0.0441		"	0.0400		110	50-150			
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0400		106	50-150			

##### Matrix Spike (BGC0673-MS1)

Source: 2303482-01

Prepared: 03/21/23 Analyzed: 03/23/23

Benzene	0.162	0.0020	mg/kg	0.125	ND	130	70-130			
Toluene	0.159	0.0050	"	0.125	ND	127	70-130			
Ethylbenzene	0.145	0.0050	"	0.125	ND	116	70-130			
m,p-Xylene	0.288	0.010	"	0.250	ND	115	70-130			
o-Xylene	0.127	0.0050	"	0.125	ND	101	70-130			
1,2,4-Trimethylbenzene	0.134	0.0050	"	0.125	ND	107	70-130			
1,3,5-Trimethylbenzene	0.141	0.0050	"	0.125	ND	113	70-130			
Naphthalene	0.0988	0.0038	"	0.125	ND	79.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0403		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0437		"	0.0400		109	50-150			
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400		107	50-150			

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

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

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

**Batch BGC0673 - EPA 5030 Soil MS**

Matrix Spike Dup (BGC0673-MSD1)		Source: 2303482-01			Prepared: 03/21/23 Analyzed: 03/23/23						
Benzene	0.158	0.0020	mg/kg	0.125	ND	127	70-130	2.45	30		
Toluene	0.156	0.0050	"	0.125	ND	125	70-130	2.10	30		
Ethylbenzene	0.153	0.0050	"	0.125	ND	123	70-130	5.65	30		
m,p-Xylene	0.306	0.010	"	0.250	ND	122	70-130	6.05	30		
o-Xylene	0.129	0.0050	"	0.125	ND	103	70-130	1.53	30		
1,2,4-Trimethylbenzene	0.135	0.0050	"	0.125	ND	108	70-130	0.603	30		
1,3,5-Trimethylbenzene	0.149	0.0050	"	0.125	ND	119	70-130	4.88	30		
Naphthalene	0.130	0.0038	"	0.125	ND	104	70-130	27.0	30		
Surrogate: 1,2-Dichloroethane-d4	0.0290		"	0.0400		72.5	50-150				
Surrogate: Toluene-d8	0.0435		"	0.0400		109	50-150				
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		101	50-150				

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**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 BGC0676 - EPA 3550A**

**Blank (BGC0676-BLK1)**

Prepared: 03/21/23 Analyzed: 03/23/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	8.31		"	12.5		66.5	30-150			

**LCS (BGC0676-BS1)**

Prepared: 03/21/23 Analyzed: 03/23/23

C10-C28 (DRO)	459	50	mg/kg	500		91.8	70-130			
Surrogate: o-Terphenyl	10.9		"	12.5		87.4	30-150			

**Matrix Spike (BGC0676-MS1)**

Source: 2303482-01

Prepared: 03/21/23 Analyzed: 03/23/23

C10-C28 (DRO)	431	50	mg/kg	500	23.0	81.6	70-130			
Surrogate: o-Terphenyl	8.75		"	12.5		70.0	30-150			

**Matrix Spike Dup (BGC0676-MSD1)**

Source: 2303482-01

Prepared: 03/21/23 Analyzed: 03/23/23

C10-C28 (DRO)	431	50	mg/kg	500	23.0	81.7	70-130	0.0329	20	
Surrogate: o-Terphenyl	9.14		"	12.5		73.1	30-150			

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

## 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 BGC0872 - EPA 5030 Soil MS

##### Blank (BGC0872-BLK1)

Prepared: 03/25/23 Analyzed: 03/27/23

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	0.0367		"	0.0333	110		40-150			
Surrogate: Fluoranthene-d10	0.0369		"	0.0333	111		40-150			

##### LCS (BGC0872-BS1)

Prepared: 03/25/23 Analyzed: 03/27/23

Acenaphthene	0.0363	0.00500	mg/kg	0.0333	109		31-137			
Anthracene	0.0347	0.00500	"	0.0333	104		30-120			
Benzo (a) anthracene	0.0293	0.00500	"	0.0333	87.9		30-120			
Benzo (a) pyrene	0.0299	0.00500	"	0.0333	89.8		30-120			
Benzo (b) fluoranthene	0.0352	0.00500	"	0.0333	106		30-120			
Benzo (k) fluoranthene	0.0384	0.00500	"	0.0333	115		30-120			
Chrysene	0.0349	0.00500	"	0.0333	105		30-120			
Dibenz (a,h) anthracene	0.0194	0.00500	"	0.0333	58.1		30-120			
Fluoranthene	0.0341	0.00500	"	0.0333	102		30-120			
Fluorene	0.0366	0.00500	"	0.0333	110		30-120			
Indeno (1,2,3-cd) pyrene	0.0204	0.00500	"	0.0333	61.2		30-120			
Pyrene	0.0418	0.00500	"	0.0333	125		35-142			
1-Methylnaphthalene	0.0331	0.00500	"	0.0333	99.3		35-142			
2-Methylnaphthalene	0.0218	0.00500	"	0.0333	65.4		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0369		"	0.0333	111		40-150			
Surrogate: Fluoranthene-d10	0.0362		"	0.0333	109		40-150			

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

## 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 BGC0872 - EPA 5030 Soil MS

##### Matrix Spike (BGC0872-MS1)

Source: 2303516-01

Prepared: 03/25/23 Analyzed: 03/27/23

Acenaphthene	0.0259	0.00500	mg/kg	0.0333	ND	77.6	31-137			
Anthracene	0.0239	0.00500	"	0.0333	ND	71.6	30-120			
Benzo (a) anthracene	0.0296	0.00500	"	0.0333	0.00266	80.7	30-120			
Benzo (a) pyrene	0.0227	0.00500	"	0.0333	ND	68.1	30-120			
Benzo (b) fluoranthene	0.0284	0.00500	"	0.0333	0.00311	75.9	30-120			
Benzo (k) fluoranthene	0.0265	0.00500	"	0.0333	ND	79.4	30-120			
Chrysene	0.0222	0.00500	"	0.0333	ND	66.5	30-120			
Dibenz (a,h) anthracene	0.0171	0.00500	"	0.0333	ND	51.3	30-120			
Fluoranthene	0.0288	0.00500	"	0.0333	ND	86.3	30-120			
Fluorene	0.0260	0.00500	"	0.0333	ND	78.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0197	0.00500	"	0.0333	ND	59.2	30-120			
Pyrene	0.0291	0.00500	"	0.0333	ND	87.2	35-142			
1-Methylnaphthalene	0.0209	0.00500	"	0.0333	ND	62.8	15-130			
2-Methylnaphthalene	0.0171	0.00500	"	0.0333	ND	51.3	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0247		"	0.0333		74.1	40-150			
Surrogate: Fluoranthene-d10	0.0309		"	0.0333		92.7	40-150			

##### Matrix Spike Dup (BGC0872-MSD1)

Source: 2303516-01

Prepared: 03/25/23 Analyzed: 03/27/23

Acenaphthene	0.0221	0.00500	mg/kg	0.0333	ND	66.2	31-137	15.9	30	
Anthracene	0.0225	0.00500	"	0.0333	ND	67.4	30-120	6.05	30	
Benzo (a) anthracene	0.0268	0.00500	"	0.0333	0.00266	72.5	30-120	9.66	30	
Benzo (a) pyrene	0.0216	0.00500	"	0.0333	ND	64.7	30-120	5.04	30	
Benzo (b) fluoranthene	0.0236	0.00500	"	0.0333	0.00311	61.5	30-120	18.5	30	
Benzo (k) fluoranthene	0.0229	0.00500	"	0.0333	ND	68.6	30-120	14.6	30	
Chrysene	0.0212	0.00500	"	0.0333	ND	63.5	30-120	4.65	30	
Dibenz (a,h) anthracene	0.0168	0.00500	"	0.0333	ND	50.5	30-120	1.59	30	
Fluoranthene	0.0250	0.00500	"	0.0333	ND	75.1	30-120	13.9	30	
Fluorene	0.0224	0.00500	"	0.0333	ND	67.3	30-120	14.7	30	
Indeno (1,2,3-cd) pyrene	0.0185	0.00500	"	0.0333	ND	55.5	30-120	6.51	30	
Pyrene	0.0267	0.00500	"	0.0333	ND	80.0	35-142	8.61	30	
1-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.8	15-130	4.56	50	
2-Methylnaphthalene	0.0176	0.00500	"	0.0333	ND	52.9	15-130	3.15	50	
Surrogate: 2-Methylnaphthalene-d10	0.0257		"	0.0333		77.0	40-150			
Surrogate: Fluoranthene-d10	0.0278		"	0.0333		83.5	40-150			

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

### Total Metals by EPA 6020B - Quality Control

#### Summit Scientific

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

#### Batch BGC0781 - EPA 3050B

##### Blank (BGC0781-BLK1)

Prepared: 03/23/23 Analyzed: 03/24/23

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

##### LCS (BGC0781-BS1)

Prepared: 03/23/23 Analyzed: 03/24/23

Arsenic	44.4	0.200	mg/kg wet	40.0	111	80-120
Barium	43.0	0.400	"	40.0	108	80-120
Cadmium	2.16	0.200	"	2.00	108	80-120
Copper	45.9	0.400	"	40.0	115	80-120
Lead	21.0	0.200	"	20.0	105	80-120
Nickel	45.1	0.400	"	40.0	113	80-120
Selenium	4.00	0.260	"	4.00	100	80-120
Silver	2.29	0.0200	"	2.00	115	80-120
Zinc	44.6	0.400	"	40.0	111	80-120

##### Duplicate (BGC0781-DUP1)

Source: 2303199-02

Prepared: 03/23/23 Analyzed: 03/24/23

Arsenic	5.49	0.235	mg/kg dry	5.98	8.64	20
Barium	149	0.470	"	148	0.521	20
Cadmium	0.326	0.235	"	0.332	1.71	20
Copper	8.43	0.470	"	8.14	3.50	20
Lead	14.2	0.235	"	11.2	24.0	20
Nickel	8.11	0.470	"	8.61	5.94	20
Selenium	0.180	0.260	"	0.203	12.3	20
Silver	0.0559	0.0235	"	0.0531	5.17	20
Zinc	25.2	0.470	"	25.1	0.481	20

QR-04

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGC0781 - EPA 3050B**

Matrix Spike (BGC0781-MS1)		Source: 2303199-02			Prepared: 03/23/23		Analyzed: 03/24/23				
Arsenic	51.6	0.235	mg/kg dry	47.0	5.98	97.0	75-125				
Barium	212	0.470	"	47.0	148	134	75-125				QM-02
Cadmium	2.66	0.235	"	2.35	0.332	99.1	75-125				
Copper	32.7	0.470	"	47.0	8.14	52.2	75-125				QM-07
Lead	34.6	0.235	"	23.5	11.2	99.7	75-125				
Nickel	33.4	0.470	"	47.0	8.61	52.7	75-125				QM-07
Selenium	4.25	0.260	"	4.70	0.203	86.2	75-125				
Silver	2.93	0.0235	"	2.35	0.0531	122	75-125				
Zinc	50.9	0.470	"	47.0	25.1	54.9	75-125				QM-07

Matrix Spike Dup (BGC0781-MSD1)		Source: 2303199-02			Prepared: 03/23/23		Analyzed: 03/24/23				
Arsenic	52.6	0.235	mg/kg dry	47.0	5.98	99.2	75-125	1.94	25		
Barium	211	0.470	"	47.0	148	134	75-125	0.114	25		QM-02
Cadmium	2.70	0.235	"	2.35	0.332	101	75-125	1.49	25		
Copper	33.2	0.470	"	47.0	8.14	53.4	75-125	1.74	25		QM-07
Lead	34.9	0.235	"	23.5	11.2	101	75-125	0.809	25		
Nickel	33.9	0.470	"	47.0	8.61	53.9	75-125	1.57	25		QM-07
Selenium	4.21	0.260	"	4.70	0.203	85.3	75-125	0.988	25		
Silver	2.95	0.0235	"	2.35	0.0531	123	75-125	0.799	25		
Zinc	51.9	0.470	"	47.0	25.1	57.0	75-125	1.96	25		QM-07

Post Spike (BGC0781-PS1)		Source: 2303199-02			Prepared: 03/23/23		Analyzed: 03/25/23				
Selenium	11.5		ug/l	10.0	0.433	111	75-125				

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BGC0905 - 3060A Mod**

**Blank (BGC0905-BLK1)**

Prepared & Analyzed: 03/27/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGC0905-BS1)**

Prepared & Analyzed: 03/27/23

Chromium, Hexavalent 25.6 0.30 mg/kg wet 25.0 102 80-120

**Duplicate (BGC0905-DUP1)**

**Source: 2303414-03**

Prepared & Analyzed: 03/27/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGC0905-MS1)**

**Source: 2303414-03**

Prepared & Analyzed: 03/27/23

Chromium, Hexavalent 25.3 0.30 mg/kg dry 26.9 ND 94.0 75-125

**Matrix Spike Dup (BGC0905-MSD1)**

**Source: 2303414-03**

Prepared & Analyzed: 03/27/23

Chromium, Hexavalent 25.5 0.30 mg/kg dry 26.9 ND 94.8 75-125 0.847 20

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

03/28/23 12:12

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

### Summit Scientific

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

#### Batch BGC0865 - General Preparation

##### Blank (BGC0865-BLK1)

Prepared: 03/25/23 Analyzed: 03/28/23

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

##### LCS (BGC0865-BS1)

Prepared: 03/25/23 Analyzed: 03/28/23

Calcium	5.83	0.0500	mg/L wet	5.00	117	70-130
Magnesium	5.21	0.0500	"	5.00	104	70-130
Sodium	5.68	0.0500	"	5.00	114	70-130

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/28/23 12:12

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

#### Summit Scientific

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

#### Batch BGC0783 - General Preparation

**Duplicate (BGC0783-DUP1)**

**Source: 2303516-01**

Prepared: 03/23/23 Analyzed: 03/24/23

% Solids	95.2	%	94.9	0.380	20
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Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/28/23 12:12

### Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
QM-02	The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

April 05, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - SLW Ranch B12-65-1HN

Work Order # 2303693

Enclosed are the results of analyses for samples received by Summit Scientific on 03/29/23 17:43. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Scott Sheely For Paul Shrewsbury

President



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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS01@2.5'	2303693-01	Soil	03/29/23 14:20	03/29/23 17:43

Summit Scientific

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

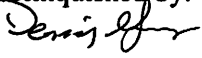
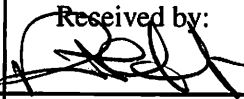

# SUMMIT SCIENTIFIC

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

Lab ID	Page   of
2303693	

Send Data To:		Send Invoice To:	
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: Chevron	
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: SLW Ranch B12-65-1HN	
City/State/Zip: Broomfield/CO/ 80020		AFE#:	
Phone: 602-881-5716	Project Name: SLW Ranch B12-65-1HN	PO/Billing Codes:	
Sampler Name: Dennis Gray	Project Number:	Contact: Dan Peterson	

				Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD	
1	F501@2.5'	3-29-23	1420	2			X			X			X	X	X	X	X	X		SAR, EC, pH by saturated paste
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 3-29-23 1636	Received by: Tasman Lock Box	Date/Time: 3-29-23 1636	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 3-29-23 1743	Received by: 	Date/Time: 3-29-23 1743	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 8.7	Corrected Temperature: 	IR gun #: 1	HNO3 lot #:			

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2303893Client: Noble TasmannClient Project ID: SIW Rameh B12-65-1HNShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐

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

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

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

8.7

Thermometer #

1

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

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.AS  
Custodian Printed Name3/29/23  
Date/Time



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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

**FS01@2.5'**  
**2303693-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/29/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0993	03/29/23	03/29/23	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: **03/29/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/29/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0994	03/29/23	03/30/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/29/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		96.5 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

**FS01@2.5'**  
**2303693-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/29/23 14:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC1040	03/31/23	04/01/23	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: **03/29/23 14:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		65.9 %		40-150		"	"	"	"	

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

Date Sampled: **03/29/23 14:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.949</b>	0.0100		mg/L	1	BGC1005	03/30/23	04/01/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/29/23 14:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

**FS01@2.5'**  
**2303693-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.41	0.203	0.171	mg/kg dry	1	BGC0997	03/29/23	03/31/23	EPA 6020B
Barium	48.3	0.406	0.321	"	"	"	"	"	"
Cadmium	0.103	0.203	0.00731	"	"	"	"	"	"
Copper	3.86	0.406	0.0212	"	"	"	"	"	"
Lead	2.92	0.203	0.0558	"	"	"	"	"	"
Nickel	2.85	0.406	0.0619	"	"	"	"	"	"
Selenium	ND	0.260	0.175	"	"	"	"	"	"
Silver	0.00974	0.0203	0.00271	"	"	"	"	"	"
Zinc	11.7	0.406	0.270	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/29/23 14:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC1070	03/31/23	03/31/23	EPA 7196A	

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

Date Sampled: **03/29/23 14:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	80.3	0.0507		mg/L dry	1	BGC0996	03/29/23	04/01/23	EPA 6020B	
Magnesium	19.1	0.0507		"	"	"	"	"	"	
Sodium	915	0.0507		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/29/23 14:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	23.8	0.00100		units	1	BGD0058	04/03/23	04/03/23	Calculation	

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

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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

04/05/23 12:49

**FS01@2.5'**  
**2303693-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/29/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	98.5			%	1	BGC1012	03/30/23	03/30/23	Calculation	

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

Date Sampled: **03/29/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	6.49	0.0100		mmhos/cm	1	BGC1014	03/30/23	03/30/23	EPA 120.1	

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

Date Sampled: **03/29/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.70			pH Units	1	BGC1015	03/30/23	03/30/23	EPA 9045D	

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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

## 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 BGC0993 - EPA 5030 Soil MS

##### Blank (BGC0993-BLK1)

Prepared & Analyzed: 03/29/23

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	0.0360		"	0.0400		90.1	50-150			
Surrogate: Toluene-d8	0.0392		"	0.0400		97.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		98.9	50-150			

##### LCS (BGC0993-BS1)

Prepared: 03/29/23 Analyzed: 03/30/23

Benzene	0.0811	0.0020	mg/kg	0.100		81.1	70-130			
Toluene	0.0850	0.0050	"	0.100		85.0	70-130			
Ethylbenzene	0.0973	0.0050	"	0.100		97.3	70-130			
m,p-Xylene	0.190	0.010	"	0.200		94.9	70-130			
o-Xylene	0.0946	0.0050	"	0.100		94.6	70-130			
1,2,4-Trimethylbenzene	0.0970	0.0050	"	0.100		97.0	70-130			
1,3,5-Trimethylbenzene	0.0981	0.0050	"	0.100		98.1	70-130			
Naphthalene	0.0961	0.0038	"	0.100		96.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0347		"	0.0400		86.8	50-150			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	50-150			

##### Matrix Spike (BGC0993-MS1)

Source: 2303691-01

Prepared: 03/29/23 Analyzed: 03/30/23

Benzene	0.0797	0.0020	mg/kg	0.100	ND	79.7	70-130			
Toluene	0.0840	0.0050	"	0.100	ND	84.0	70-130			
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130			
m,p-Xylene	0.194	0.010	"	0.200	ND	97.1	70-130			
o-Xylene	0.0968	0.0050	"	0.100	ND	96.8	70-130			
1,2,4-Trimethylbenzene	0.0978	0.0050	"	0.100	ND	97.8	70-130			
1,3,5-Trimethylbenzene	0.0991	0.0050	"	0.100	ND	99.1	70-130			
Naphthalene	0.106	0.0038	"	0.100	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0340		"	0.0400		85.0	50-150			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	50-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

## 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 BGC0993 - EPA 5030 Soil MS

Matrix Spike Dup (BGC0993-MSD1)	Source: 2303691-01			Prepared: 03/29/23 Analyzed: 03/30/23						
Benzene	0.0821	0.0020	mg/kg	0.100	ND	82.1	70-130	2.93	30	
Toluene	0.0878	0.0050	"	0.100	ND	87.8	70-130	4.40	30	
Ethylbenzene	0.0982	0.0050	"	0.100	ND	98.2	70-130	2.53	30	
m,p-Xylene	0.188	0.010	"	0.200	ND	94.1	70-130	3.07	30	
o-Xylene	0.0942	0.0050	"	0.100	ND	94.2	70-130	2.80	30	
1,2,4-Trimethylbenzene	0.0963	0.0050	"	0.100	ND	96.3	70-130	1.58	30	
1,3,5-Trimethylbenzene	0.0964	0.0050	"	0.100	ND	96.4	70-130	2.70	30	
Naphthalene	0.108	0.0038	"	0.100	ND	108	70-130	2.33	30	
Surrogate: 1,2-Dichloroethane-d4	0.0359		"	0.0400		89.8	50-150			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.8	50-150			

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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

**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 BGC0994 - EPA 3550A**

**Blank (BGC0994-BLK1)**

Prepared: 03/29/23 Analyzed: 03/30/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.2		"	12.5		105	30-150			

**LCS (BGC0994-BS1)**

Prepared: 03/29/23 Analyzed: 03/30/23

C10-C28 (DRO)	493	50	mg/kg	500		98.6	70-130			
Surrogate: o-Terphenyl	13.8		"	12.5		110	30-150			

**Matrix Spike (BGC0994-MS1)**

Source: 2303691-01

Prepared: 03/29/23 Analyzed: 03/30/23

C10-C28 (DRO)	419	50	mg/kg	500	18.7	80.1	70-130			
Surrogate: o-Terphenyl	13.1		"	12.5		105	30-150			

**Matrix Spike Dup (BGC0994-MSD1)**

Source: 2303691-01

Prepared: 03/29/23 Analyzed: 03/30/23

C10-C28 (DRO)	453	50	mg/kg	500	18.7	86.9	70-130	7.78	20	
Surrogate: o-Terphenyl	12.4		"	12.5		99.2	30-150			

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Tasman Geosciences  
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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGC1040 - EPA 5030 Soil MS

##### Blank (BGC1040-BLK1)

Prepared: 03/31/23 Analyzed: 04/01/23

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	0.0329		"	0.0333		98.8		40-150			
Surrogate: Fluoranthene-d10	0.0356		"	0.0333		107		40-150			

##### LCS (BGC1040-BS1)

Prepared: 03/31/23 Analyzed: 04/01/23

Acenaphthene	0.0266	0.00500	mg/kg	0.0333		79.8		31-137			
Anthracene	0.0256	0.00500	"	0.0333		76.7		30-120			
Benzo (a) anthracene	0.0266	0.00500	"	0.0333		79.9		30-120			
Benzo (a) pyrene	0.0256	0.00500	"	0.0333		76.9		30-120			
Benzo (b) fluoranthene	0.0251	0.00500	"	0.0333		75.3		30-120			
Benzo (k) fluoranthene	0.0246	0.00500	"	0.0333		73.8		30-120			
Chrysene	0.0222	0.00500	"	0.0333		66.5		30-120			
Dibenz (a,h) anthracene	0.0292	0.00500	"	0.0333		87.7		30-120			
Fluoranthene	0.0279	0.00500	"	0.0333		83.8		30-120			
Fluorene	0.0262	0.00500	"	0.0333		78.5		30-120			
Indeno (1,2,3-cd) pyrene	0.0266	0.00500	"	0.0333		79.7		30-120			
Pyrene	0.0260	0.00500	"	0.0333		78.1		35-142			
1-Methylnaphthalene	0.0302	0.00500	"	0.0333		90.5		35-142			
2-Methylnaphthalene	0.0265	0.00500	"	0.0333		79.4		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0300		"	0.0333		90.1		40-150			
Surrogate: Fluoranthene-d10	0.0302		"	0.0333		90.7		40-150			

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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGC1040 - EPA 5030 Soil MS

##### Matrix Spike (BGC1040-MS1)

Source: 2303609-01

Prepared: 03/31/23 Analyzed: 04/01/23

Acenaphthene	0.0196	0.00500	mg/kg	0.0333	ND	58.9	31-137		
Anthracene	0.0188	0.00500	"	0.0333	ND	56.3	30-120		
Benzo (a) anthracene	0.0228	0.00500	"	0.0333	ND	68.5	30-120		
Benzo (a) pyrene	0.0206	0.00500	"	0.0333	ND	61.7	30-120		
Benzo (b) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.1	30-120		
Benzo (k) fluoranthene	0.0173	0.00500	"	0.0333	ND	52.0	30-120		
Chrysene	0.0154	0.00500	"	0.0333	ND	46.1	30-120		
Dibenz (a,h) anthracene	0.0175	0.00500	"	0.0333	ND	52.5	30-120		
Fluoranthene	0.0216	0.00500	"	0.0333	ND	64.9	30-120		
Fluorene	0.0190	0.00500	"	0.0333	ND	57.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0165	0.00500	"	0.0333	ND	49.6	30-120		
Pyrene	0.0195	0.00500	"	0.0333	ND	58.4	35-142		
1-Methylnaphthalene	0.0183	0.00500	"	0.0333	ND	54.9	15-130		
2-Methylnaphthalene	0.0184	0.00500	"	0.0333	ND	55.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0205		"	0.0333		61.6	40-150		
Surrogate: Fluoranthene-d10	0.0249		"	0.0333		74.8	40-150		

##### Matrix Spike Dup (BGC1040-MSD1)

Source: 2303609-01

Prepared: 03/31/23 Analyzed: 04/01/23

Acenaphthene	0.0209	0.00500	mg/kg	0.0333	ND	62.8	31-137	6.40	30
Anthracene	0.0200	0.00500	"	0.0333	ND	60.1	30-120	6.48	30
Benzo (a) anthracene	0.0243	0.00500	"	0.0333	ND	73.0	30-120	6.30	30
Benzo (a) pyrene	0.0216	0.00500	"	0.0333	ND	64.9	30-120	5.17	30
Benzo (b) fluoranthene	0.0198	0.00500	"	0.0333	ND	59.4	30-120	7.46	30
Benzo (k) fluoranthene	0.0183	0.00500	"	0.0333	ND	54.8	30-120	5.22	30
Chrysene	0.0162	0.00500	"	0.0333	ND	48.5	30-120	5.14	30
Dibenz (a,h) anthracene	0.0211	0.00500	"	0.0333	ND	63.4	30-120	18.8	30
Fluoranthene	0.0223	0.00500	"	0.0333	ND	67.0	30-120	3.19	30
Fluorene	0.0206	0.00500	"	0.0333	ND	61.7	30-120	7.76	30
Indeno (1,2,3-cd) pyrene	0.0196	0.00500	"	0.0333	ND	58.8	30-120	16.9	30
Pyrene	0.0205	0.00500	"	0.0333	ND	61.5	35-142	5.06	30
1-Methylnaphthalene	0.0214	0.00500	"	0.0333	ND	64.1	15-130	15.4	50
2-Methylnaphthalene	0.0200	0.00500	"	0.0333	ND	60.0	15-130	8.11	50
Surrogate: 2-Methylnaphthalene-d10	0.0246		"	0.0333		73.9	40-150		
Surrogate: Fluoranthene-d10	0.0258		"	0.0333		77.4	40-150		

Summit Scientific

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

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

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

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

**Batch BGC1005 - EPA 3050B**

**Blank (BGC1005-BLK1)**

Prepared: 03/30/23 Analyzed: 04/01/23

Boron ND 0.0100 mg/L

**LCS (BGC1005-BS1)**

Prepared: 03/30/23 Analyzed: 04/01/23

Boron 5.21 0.0100 mg/L 5.00 104 80-120

**Duplicate (BGC1005-DUP1)**

**Source: 2303647-01**

Prepared: 03/30/23 Analyzed: 04/01/23

Boron 0.125 0.0100 mg/L 0.136 8.10 20

**Matrix Spike (BGC1005-MS1)**

**Source: 2303647-01**

Prepared: 03/30/23 Analyzed: 04/01/23

Boron 5.33 0.0100 mg/L 5.00 0.136 104 75-125

**Matrix Spike Dup (BGC1005-MSD1)**

**Source: 2303647-01**

Prepared: 03/30/23 Analyzed: 04/01/23

Boron 5.56 0.0100 mg/L 5.00 0.136 108 75-125 4.14 25

Summit Scientific

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



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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

### Total Metals by EPA 6020B - Quality Control

#### Summit Scientific

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

#### Batch BGC0997 - EPA 3050B

##### Blank (BGC0997-BLK1)

Prepared: 03/29/23 Analyzed: 03/31/23

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

##### LCS (BGC0997-BS1)

Prepared: 03/29/23 Analyzed: 03/31/23

Arsenic	39.6	0.200	mg/kg wet	40.0	99.0	80-120
Barium	38.4	0.400	"	40.0	95.9	80-120
Cadmium	1.91	0.200	"	2.00	95.4	80-120
Copper	39.7	0.400	"	40.0	99.2	80-120
Lead	19.2	0.200	"	20.0	96.1	80-120
Nickel	38.3	0.400	"	40.0	95.7	80-120
Selenium	3.59	0.260	"	4.00	89.7	80-120
Silver	1.93	0.0200	"	2.00	96.3	80-120
Zinc	38.0	0.400	"	40.0	94.9	80-120

##### Duplicate (BGC0997-DUP1)

Source: 2303682-01

Prepared: 03/29/23 Analyzed: 03/31/23

Arsenic	1.36	0.238	mg/kg dry	1.34	2.01	20
Barium	60.1	0.477	"	59.8	0.465	20
Cadmium	0.131	0.238	"	0.129	1.10	20
Copper	3.80	0.477	"	3.77	0.818	20
Lead	4.27	0.238	"	4.24	0.683	20
Nickel	4.29	0.477	"	4.28	0.0778	20
Selenium	ND	0.260	"	ND		20
Silver	0.0119	0.0238	"	0.0138	14.8	20
Zinc	15.4	0.477	"	15.4	0.256	20

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGC0997 - EPA 3050B**

Matrix Spike (BGC0997-MS1)		Source: 2303682-01			Prepared: 03/29/23		Analyzed: 03/31/23			
Arsenic	46.9	0.238	mg/kg dry	47.7	1.34	95.6	75-125			
Barium	109	0.477	"	47.7	59.8	103	75-125			
Cadmium	2.36	0.238	"	2.38	0.129	93.4	75-125			
Copper	37.6	0.477	"	47.7	3.77	71.1	75-125			QM-07
Lead	26.2	0.238	"	23.8	4.24	92.3	75-125			
Nickel	36.8	0.477	"	47.7	4.28	68.1	75-125			QM-07
Selenium	3.42	0.260	"	4.77	ND	71.7	75-125			QM-07
Silver	2.15	0.0238	"	2.38	0.0138	89.5	75-125			
Zinc	49.7	0.477	"	47.7	15.4	71.9	75-125			QM-07

Matrix Spike Dup (BGC0997-MSD1)		Source: 2303682-01			Prepared: 03/29/23		Analyzed: 03/31/23			
Arsenic	49.2	0.238	mg/kg dry	47.7	1.34	100	75-125	4.86	25	
Barium	109	0.477	"	47.7	59.8	103	75-125	0.0964	25	
Cadmium	2.40	0.238	"	2.38	0.129	95.2	75-125	1.76	25	
Copper	40.1	0.477	"	47.7	3.77	76.3	75-125	6.43	25	
Lead	26.5	0.238	"	23.8	4.24	93.6	75-125	1.15	25	
Nickel	38.1	0.477	"	47.7	4.28	71.0	75-125	3.63	25	QM-07
Selenium	3.41	0.260	"	4.77	ND	71.6	75-125	0.181	25	QM-07
Silver	2.19	0.0238	"	2.38	0.0138	91.4	75-125	2.15	25	
Zinc	51.4	0.477	"	47.7	15.4	75.5	75-125	3.31	25	

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BGC1070 - 3060A Mod**

**Blank (BGC1070-BLK1)**

Prepared & Analyzed: 03/31/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGC1070-BS1)**

Prepared & Analyzed: 03/31/23

Chromium, Hexavalent 22.4 0.30 mg/kg wet 25.0 89.6 80-120

**Duplicate (BGC1070-DUP1)**

**Source: 2303690-07**

Prepared & Analyzed: 03/31/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGC1070-MS1)**

**Source: 2303690-07**

Prepared & Analyzed: 03/31/23

Chromium, Hexavalent 24.1 0.30 mg/kg dry 30.0 ND 80.2 75-125

**Matrix Spike Dup (BGC1070-MSD1)**

**Source: 2303690-07**

Prepared & Analyzed: 03/31/23

Chromium, Hexavalent 25.7 0.30 mg/kg dry 30.0 ND 85.6 75-125 6.51 20

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

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

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

**Batch BGC0996 - General Preparation**

**Blank (BGC0996-BLK1)**

Prepared: 03/29/23 Analyzed: 04/01/23

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

**LCS (BGC0996-BS1)**

Prepared: 03/29/23 Analyzed: 04/01/23

Calcium	6.03	0.0500	mg/L wet	5.00	121	70-130
Magnesium	5.16	0.0500	"	5.00	103	70-130
Sodium	5.47	0.0500	"	5.00	109	70-130

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

04/05/23 12:49

### 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 BGC1012 - General Preparation

**Duplicate (BGC1012-DUP1)**

**Source: 2303422-04**

Prepared & Analyzed: 03/30/23

% Solids	87.2	%	87.5	0.321	20
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Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

04/05/23 12:49

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

#### Summit Scientific

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

#### Batch BGC1014 - General Preparation

##### Blank (BGC1014-BLK1)

Prepared & Analyzed: 03/30/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

##### LCS (BGC1014-BS1)

Prepared & Analyzed: 03/30/23

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

##### Duplicate (BGC1014-DUP1)

Source: 2303682-01

Prepared & Analyzed: 03/30/23

Specific Conductance (EC) 1.04 0.0100 mmhos/cm 1.06 1.62 20

Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

04/05/23 12:49

**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 BGC1015 - General Preparation**

**LCS (BGC1015-BS1)**

Prepared & Analyzed: 03/30/23

pH	9.08	pH Units	9.18	98.9	95-105
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**Duplicate (BGC1015-DUP1)**

Source: 2303682-01

Prepared & Analyzed: 03/30/23

pH	7.66	pH Units	7.76	1.30	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 - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/05/23 12:49

### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

April 19, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - SLW Ranch B12-65-1HN

Work Order # 2304203

Enclosed are the results of analyses for samples received by Summit Scientific on 04/11/23 17:58. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS03@2.5'	2304203-01	Soil	04/11/23 09:46	04/11/23 17:58

Summit Scientific

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



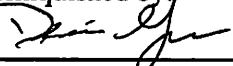
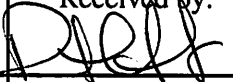
# SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2304203	

Send Data To:		Send Invoice To:	
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: Chevron	
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: SLW Ranch B12-65-1HN	
City/State/Zip: Broomfield/CO/ 80020		AFE#:	
Phone: 602-881-5716	Project Name: SLW Ranch B12-65-1HN	PO/Billing Codes:	
Sampler Name: Dennis Gray	Project Number:	Contact: Dan Peterson	

				Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD	
1	F503 @ 2.5'	4-11-23	946	2			X			X			X	X	X	X	X	X		SAR, EC, pH by saturated paste
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 4-11-23 1630	Received by: Tasman Lock Box	Date/Time: 4-11-23 1630	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 4-11-23 1758	Received by: 	Date/Time: 4-11-23 1758	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 9.9	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:			

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2304203Client: Noble/Trasman

Client Project ID:

SLW Ranch B12-C65-1HN

Shipped 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)

9.9

Thermometer #

1

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

Custodian Printed Name

Date/Time

4-11-23

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

**FS03@2.5'**  
**2304203-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/11/23 09:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGD0346	04/11/23	04/12/23	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: **04/11/23 09:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/11/23 09:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0345	04/11/23	04/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/11/23 09:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		90.9 %		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 - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

**FS03@2.5'**  
**2304203-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **04/11/23 09:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGD0359	04/12/23	04/13/23	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: **04/11/23 09:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		42.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.4 %		40-150		"	"	"	"	

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

Date Sampled: **04/11/23 09:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.231</b>	0.0100		mg/L	1	BGD0367	04/12/23	04/18/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/11/23 09:46**

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

**FS03@2.5'**  
**2304203-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

<b>Arsenic</b>	<b>2.42</b>	0.205		mg/kg dry	1	BGD0362	04/12/23	04/18/23	EPA 6020B
<b>Barium</b>	<b>48.6</b>	0.409		"	"	"	"	"	"
Cadmium	ND	0.205		"	"	"	"	"	"
<b>Copper</b>	<b>4.15</b>	0.409		"	"	"	"	"	"
<b>Lead</b>	<b>3.44</b>	0.205		"	"	"	"	"	"
<b>Nickel</b>	<b>3.11</b>	0.409		"	"	"	"	"	"
Selenium	ND	0.260	0.175	"	"	"	"	"	"
Silver	ND	0.0205		"	"	"	"	"	"
<b>Zinc</b>	<b>14.4</b>	0.409		"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/11/23 09:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGD0383	04/12/23	04/12/23	EPA 7196A	

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

Date Sampled: **04/11/23 09:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>83.6</b>	0.0512		mg/L dry	1	BGD0351	04/12/23	04/17/23	EPA 6020B	
<b>Magnesium</b>	<b>37.0</b>	0.0512		"	"	"	"	"	"	
<b>Sodium</b>	<b>112</b>	0.0512		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/11/23 09:46**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>2.56</b>	0.00100		units	1	BGD0550	04/18/23	04/18/23	Calculation	

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

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Tasman Geosciences  
6855 W. 119th Ave.  
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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

**FS03@2.5'**  
**2304203-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/11/23 09:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	97.7			%	1	BGD0365	04/12/23	04/12/23	Calculation	

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

Date Sampled: **04/11/23 09:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	3.60	0.0100		mmhos/cm	1	BGD0386	04/12/23	04/12/23	EPA 120.1	

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

Date Sampled: **04/11/23 09:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.80			pH Units	1	BGD0385	04/12/23	04/12/23	EPA 9045D	

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6855 W. 119th Ave.  
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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BGD0346 - EPA 5030 Soil MS

##### Blank (BGD0346-BLK1)

Prepared: 04/11/23 Analyzed: 04/13/23

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	0.0388		"	0.0400		97.0	50-150			
Surrogate: Toluene-d8	0.0364		"	0.0400		90.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0400		95.3	50-150			

##### LCS (BGD0346-BS1)

Prepared: 04/11/23 Analyzed: 04/13/23

Benzene	0.108	0.0020	mg/kg	0.125		86.7	70-130			
Toluene	0.140	0.0050	"	0.125		112	70-130			
Ethylbenzene	0.143	0.0050	"	0.125		114	70-130			
m,p-Xylene	0.290	0.010	"	0.250		116	70-130			
o-Xylene	0.134	0.0050	"	0.125		107	70-130			
1,2,4-Trimethylbenzene	0.156	0.0050	"	0.125		125	70-130			
1,3,5-Trimethylbenzene	0.154	0.0050	"	0.125		123	70-130			
Naphthalene	0.154	0.0038	"	0.125		124	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0395		"	0.0400		98.8	50-150			
Surrogate: Toluene-d8	0.0366		"	0.0400		91.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0367		"	0.0400		91.6	50-150			

##### Matrix Spike (BGD0346-MS1)

Source: 2304192-01

Prepared: 04/11/23 Analyzed: 04/13/23

Benzene	0.109	0.0020	mg/kg	0.125	ND	87.6	70-130			
Toluene	0.141	0.0050	"	0.125	ND	113	70-130			
Ethylbenzene	0.144	0.0050	"	0.125	ND	115	70-130			
m,p-Xylene	0.286	0.010	"	0.250	ND	115	70-130			
o-Xylene	0.136	0.0050	"	0.125	ND	108	70-130			
1,2,4-Trimethylbenzene	0.156	0.0050	"	0.125	ND	125	70-130			
1,3,5-Trimethylbenzene	0.153	0.0050	"	0.125	ND	122	70-130			
Naphthalene	0.151	0.0038	"	0.125	ND	121	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0423		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0368		"	0.0400		92.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0400		92.9	50-150			

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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BGD0346 - EPA 5030 Soil MS

##### Matrix Spike Dup (BGD0346-MSD1)

Source: 2304192-01

Prepared: 04/11/23 Analyzed: 04/13/23

Benzene	0.110	0.0020	mg/kg	0.125	ND	88.3	70-130	0.792	30	
Toluene	0.143	0.0050	"	0.125	ND	115	70-130	1.71	30	
Ethylbenzene	0.145	0.0050	"	0.125	ND	116	70-130	0.912	30	
m,p-Xylene	0.290	0.010	"	0.250	ND	116	70-130	1.22	30	
o-Xylene	0.138	0.0050	"	0.125	ND	111	70-130	1.97	30	
1,2,4-Trimethylbenzene	0.158	0.0050	"	0.125	ND	126	70-130	1.15	30	
1,3,5-Trimethylbenzene	0.155	0.0050	"	0.125	ND	124	70-130	1.36	30	
Naphthalene	0.143	0.0038	"	0.125	ND	114	70-130	5.58	30	
Surrogate: 1,2-Dichloroethane-d4	0.0409		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0372		"	0.0400		93.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.5	50-150			

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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BGD0345 - EPA 3550A**

**Blank (BGD0345-BLK1)**

Prepared: 04/11/23 Analyzed: 04/13/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	9.19		"	12.5		73.6	30-150			

**LCS (BGD0345-BS1)**

Prepared: 04/11/23 Analyzed: 04/13/23

C10-C28 (DRO)	414	50	mg/kg	500		82.9	70-130			
Surrogate: o-Terphenyl	9.18		"	12.5		73.4	30-150			

**Matrix Spike (BGD0345-MS1)**

**Source: 2304192-01**

Prepared: 04/11/23 Analyzed: 04/13/23

C10-C28 (DRO)	429	50	mg/kg	500	24.5	80.9	70-130			
Surrogate: o-Terphenyl	6.82		"	12.5		54.6	30-150			

**Matrix Spike Dup (BGD0345-MSD1)**

**Source: 2304192-01**

Prepared: 04/11/23 Analyzed: 04/13/23

C10-C28 (DRO)	446	50	mg/kg	500	24.5	84.3	70-130	3.85	20	
Surrogate: o-Terphenyl	10.0		"	12.5		80.2	30-150			

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGD0359 - EPA 5030 Soil MS

##### Blank (BGD0359-BLK1)

Prepared: 04/12/23 Analyzed: 04/13/23

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	0.0224		"	0.0333		67.1		40-150			
Surrogate: Fluoranthene-d10	0.0232		"	0.0333		69.5		40-150			

##### LCS (BGD0359-BS1)

Prepared: 04/12/23 Analyzed: 04/13/23

Acenaphthene	0.0287	0.00500	mg/kg	0.0333		86.1		31-137			
Anthracene	0.0245	0.00500	"	0.0333		73.5		30-120			
Benzo (a) anthracene	0.0218	0.00500	"	0.0333		65.3		30-120			
Benzo (a) pyrene	0.0218	0.00500	"	0.0333		65.5		30-120			
Benzo (b) fluoranthene	0.0233	0.00500	"	0.0333		69.8		30-120			
Benzo (k) fluoranthene	0.0186	0.00500	"	0.0333		55.8		30-120			
Chrysene	0.0176	0.00500	"	0.0333		52.9		30-120			
Dibenz (a,h) anthracene	0.0202	0.00500	"	0.0333		60.5		30-120			
Fluoranthene	0.0233	0.00500	"	0.0333		69.9		30-120			
Fluorene	0.0255	0.00500	"	0.0333		76.5		30-120			
Indeno (1,2,3-cd) pyrene	0.0270	0.00500	"	0.0333		81.0		30-120			
Pyrene	0.0169	0.00500	"	0.0333		50.8		35-142			
1-Methylnaphthalene	0.0214	0.00500	"	0.0333		64.1		35-142			
2-Methylnaphthalene	0.0275	0.00500	"	0.0333		82.5		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0233		"	0.0333		69.8		40-150			
Surrogate: Fluoranthene-d10	0.0291		"	0.0333		87.4		40-150			

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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

Reported:  
04/19/23 12:36

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGD0359 - EPA 5030 Soil MS

##### Matrix Spike (BGD0359-MS1)

Source: 2304142-01

Prepared: 04/12/23 Analyzed: 04/13/23

Acenaphthene	0.0219	0.00500	mg/kg	0.0333	ND	65.6	31-137		
Anthracene	0.0188	0.00500	"	0.0333	ND	56.3	30-120		
Benzo (a) anthracene	0.0158	0.00500	"	0.0333	0.00103	44.4	30-120		
Benzo (a) pyrene	0.0167	0.00500	"	0.0333	ND	50.0	30-120		
Benzo (b) fluoranthene	0.0158	0.00500	"	0.0333	ND	47.3	30-120		
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0333	ND	53.8	30-120		
Chrysene	0.0141	0.00500	"	0.0333	0.000583	40.5	30-120		
Dibenz (a,h) anthracene	0.0155	0.00500	"	0.0333	ND	46.5	30-120		
Fluoranthene	0.0200	0.00500	"	0.0333	ND	59.9	30-120		
Fluorene	0.0200	0.00500	"	0.0333	ND	60.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0171	0.00500	"	0.0333	ND	51.2	30-120		
Pyrene	0.0151	0.00500	"	0.0333	ND	45.3	35-142		
1-Methylnaphthalene	0.0149	0.00500	"	0.0333	ND	44.8	15-130		
2-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.7	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0298		"	0.0333		89.5	40-150		
Surrogate: Fluoranthene-d10	0.0367		"	0.0333		110	40-150		

##### Matrix Spike Dup (BGD0359-MSD1)

Source: 2304142-01

Prepared: 04/12/23 Analyzed: 04/13/23

Acenaphthene	0.0220	0.00500	mg/kg	0.0333	ND	66.0	31-137	0.594	30
Anthracene	0.0189	0.00500	"	0.0333	ND	56.8	30-120	0.910	30
Benzo (a) anthracene	0.0165	0.00500	"	0.0333	0.00103	46.3	30-120	3.89	30
Benzo (a) pyrene	0.0151	0.00500	"	0.0333	ND	45.3	30-120	9.93	30
Benzo (b) fluoranthene	0.0178	0.00500	"	0.0333	ND	53.5	30-120	12.2	30
Benzo (k) fluoranthene	0.0153	0.00500	"	0.0333	ND	45.9	30-120	15.7	30
Chrysene	0.0134	0.00500	"	0.0333	0.000583	38.5	30-120	4.80	30
Dibenz (a,h) anthracene	0.0138	0.00500	"	0.0333	ND	41.4	30-120	11.7	30
Fluoranthene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	0.458	30
Fluorene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	0.747	30
Indeno (1,2,3-cd) pyrene	0.0140	0.00500	"	0.0333	ND	42.1	30-120	19.7	30
Pyrene	0.0164	0.00500	"	0.0333	ND	49.2	35-142	8.16	30
1-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.5	15-130	12.1	50
2-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.3	15-130	3.74	50
Surrogate: 2-Methylnaphthalene-d10	0.0178		"	0.0333		53.4	40-150		
Surrogate: Fluoranthene-d10	0.0267		"	0.0333		80.1	40-150		

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

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

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

**Batch BGD0367 - EPA 3050B**

**Blank (BGD0367-BLK1)**

Prepared: 04/12/23 Analyzed: 04/18/23

Boron ND 0.0100 mg/L

**LCS (BGD0367-BS1)**

Prepared: 04/12/23 Analyzed: 04/18/23

Boron 4.82 0.0100 mg/L 5.00 96.4 80-120

**Duplicate (BGD0367-DUP1)**

**Source: 2304202-01**

Prepared: 04/12/23 Analyzed: 04/18/23

Boron 0.871 0.0100 mg/L 0.860 1.29 20

**Matrix Spike (BGD0367-MS1)**

**Source: 2304202-01**

Prepared: 04/12/23 Analyzed: 04/18/23

Boron 4.75 0.0100 mg/L 5.00 0.860 77.8 75-125

**Matrix Spike Dup (BGD0367-MSD1)**

**Source: 2304202-01**

Prepared: 04/12/23 Analyzed: 04/18/23

Boron 4.68 0.0100 mg/L 5.00 0.860 76.3 75-125 1.53 25

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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

### Total Metals by EPA 6020B - Quality Control

#### Summit Scientific

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

#### Batch BGD0362 - EPA 3050B

##### Blank (BGD0362-BLK1)

Prepared: 04/12/23 Analyzed: 04/18/23

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

##### LCS (BGD0362-BS1)

Prepared: 04/12/23 Analyzed: 04/18/23

Arsenic	36.8	0.200	mg/kg wet	40.0	92.1	80-120
Barium	38.9	0.400	"	40.0	97.2	80-120
Cadmium	1.95	0.200	"	2.00	97.7	80-120
Copper	43.3	0.400	"	40.0	108	80-120
Lead	20.6	0.200	"	20.0	103	80-120
Nickel	41.3	0.400	"	40.0	103	80-120
Selenium	4.63	0.260	"	4.00	116	80-120
Silver	1.95	0.0200	"	2.00	97.7	80-120
Zinc	41.0	0.400	"	40.0	103	80-120

##### Duplicate (BGD0362-DUP1)

Source: 2304202-01

Prepared: 04/12/23 Analyzed: 04/18/23

Arsenic	4.04	0.253	mg/kg dry	3.61	11.2	20
Barium	150	0.505	"	146	3.26	20
Cadmium	0.443	0.253	"	0.400	10.3	20
Copper	9.61	0.505	"	9.01	6.39	20
Lead	14.2	0.253	"	12.6	12.1	20
Nickel	7.04	0.505	"	6.53	7.60	20
Selenium	0.212	0.260	"	0.210	1.20	20
Silver	0.0712	0.0253	"	0.0662	7.35	20
Zinc	29.6	0.505	"	28.0	5.88	20

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGD0362 - EPA 3050B**

Matrix Spike (BGD0362-MS1)		Source: 2304202-01			Prepared: 04/12/23		Analyzed: 04/18/23			
Arsenic	48.1	0.253	mg/kg dry	50.5	3.61	88.0	75-125			
Barium	205	0.505	"	50.5	146	117	75-125			
Cadmium	2.89	0.253	"	2.53	0.400	98.6	75-125			
Copper	30.6	0.505	"	50.5	9.01	42.8	75-125			QM-05
Lead	37.3	0.253	"	25.3	12.6	97.8	75-125			
Nickel	27.4	0.505	"	50.5	6.53	41.4	75-125			QM-05
Selenium	5.49	0.260	"	5.05	0.210	104	75-125			
Silver	2.41	0.0253	"	2.53	0.0662	93.0	75-125			
Zinc	51.5	0.505	"	50.5	28.0	46.6	75-125			QM-05

Matrix Spike Dup (BGD0362-MSD1)		Source: 2304202-01			Prepared: 04/12/23		Analyzed: 04/18/23			
Arsenic	48.9	0.253	mg/kg dry	50.5	3.61	89.8	75-125	1.84	25	
Barium	204	0.505	"	50.5	146	117	75-125	0.106	25	
Cadmium	2.91	0.253	"	2.53	0.400	99.4	75-125	0.714	25	
Copper	30.7	0.505	"	50.5	9.01	42.8	75-125	0.127	25	QM-05
Lead	38.0	0.253	"	25.3	12.6	101	75-125	1.94	25	
Nickel	27.6	0.505	"	50.5	6.53	41.8	75-125	0.700	25	QM-05
Selenium	5.62	0.260	"	5.05	0.210	107	75-125	2.34	25	
Silver	2.44	0.0253	"	2.53	0.0662	94.1	75-125	1.19	25	
Zinc	51.5	0.505	"	50.5	28.0	46.7	75-125	0.0814	25	QM-05

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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BGD0383 - 3060A Mod**

**Blank (BGD0383-BLK1)**

Prepared & Analyzed: 04/12/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGD0383-BS1)**

Prepared & Analyzed: 04/12/23

Chromium, Hexavalent 21.2 0.30 mg/kg wet 25.0 84.8 80-120

**Duplicate (BGD0383-DUP1)**

**Source: 2304202-03**

Prepared & Analyzed: 04/12/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGD0383-MS1)**

**Source: 2304202-03**

Prepared & Analyzed: 04/12/23

Chromium, Hexavalent 21.0 0.30 mg/kg dry 26.5 ND 79.2 75-125

**Matrix Spike Dup (BGD0383-MSD1)**

**Source: 2304202-03**

Prepared & Analyzed: 04/12/23

Chromium, Hexavalent 20.2 0.30 mg/kg dry 26.5 ND 76.2 75-125 3.86 20

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6855 W. 119th Ave.  
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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

04/19/23 12:36

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

### Summit Scientific

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

#### Batch BGD0351 - General Preparation

##### Blank (BGD0351-BLK1)

Prepared: 04/12/23 Analyzed: 04/17/23

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

##### LCS (BGD0351-BS1)

Prepared: 04/12/23 Analyzed: 04/17/23

Calcium	5.22	0.0500	mg/L wet	5.00	104	70-130
Magnesium	4.59	0.0500	"	5.00	91.8	70-130
Sodium	4.60	0.0500	"	5.00	92.1	70-130

Summit Scientific

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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

04/19/23 12:36

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

**Summit Scientific**

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

**Batch BGD0365 - General Preparation**

Duplicate (BGD0365-DUP1)		Source: 2304194-01		Prepared & Analyzed: 04/12/23							
% Solids	90.1		%		90.0			0.0549		20	

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Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

04/19/23 12:36

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

#### Summit Scientific

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

#### Batch BGD0386 - General Preparation

##### Blank (BGD0386-BLK1)

Prepared & Analyzed: 04/12/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

##### LCS (BGD0386-BS1)

Prepared & Analyzed: 04/12/23

Specific Conductance (EC) 0.150 0.0100 mmhos/cm 0.150 100 95-105

##### Duplicate (BGD0386-DUP1)

Source: 2304202-01

Prepared & Analyzed: 04/12/23

Specific Conductance (EC) 1.01 0.0100 mmhos/cm 1.01 0.792 20

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

04/19/23 12:36

**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 BGD0385 - General Preparation**

**LCS (BGD0385-BS1)**

Prepared & Analyzed: 04/12/23

pH	9.05	pH Units	9.18	98.6	95-105
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**Duplicate (BGD0385-DUP1)**

Source: 2304202-01

Prepared & Analyzed: 04/12/23

pH	7.96	pH Units	7.78	2.29	20
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Summit Scientific

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

Project: Noble - SLW Ranch B12-65-1HN

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
04/19/23 12:36

### Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference