

FOUNDATION ENERGY INC.
Groseclose 32-30

FORM 27 SUPPLEMENTAL
SECOND QUARTER 2023 RESUBMISSION - SOIL SAMPLING SUMMARY REPORT

ATTACHMENTS

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- 1 Volatile Organic Compound Soil Analytical Results
- 2 Soil Suitability and Metals Soil Analytical Results
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-2306661F (Soil)

Attachments

- A 2Q23 Conditions of Approval - Responses and Additional Information



Arsenic Concentrations in Soil

Risk management guidance for evaluating

reviewed/revised July 2014

Regulatory Limitation

This guidance does not modify, replace, or pre-empt any existing statutory or regulatory requirements, enforcement actions, agreements, policies or other legal mechanisms that may govern actions within the Hazardous Materials and Waste Management Division's (the "division's") various remedial programs. In the event of a conflict between this guidance and existing risk assessment guidance and other programmatic requirements, this guidance defers to the various legal and operating mechanisms of those remedial programs.

This guidance was developed with the division's remedial programs in mind. Other state and federal agencies are not obligated to use the process outlined herein, although the same analysis could apply to other sites undergoing investigation and cleanup where testing for arsenic is required and it may be present in sampled environmental media. Parties wanting to use this guidance at their site must seek approval to do so from the regulatory agency responsible for overseeing their remedial activities.

Purpose

The division has prepared this guidance for the purpose of making preliminary determinations when screening data collected from sites that don't necessarily have a reason to believe arsenic contamination may be present, such as a routine Phase II investigation conducted prior to a property transaction. This guidance is simply meant to inform the regulated community of their responsibilities in managing arsenic risks: it is not regulation, nor does it constitute an enforceable standard that must be complied with.

Background

Arsenic is naturally occurring in some geologic environments in Colorado due to weathering and erosion of bedrock and soil, including highly mineralized areas that are mined for metal ores. It is present in more than 200 different minerals, the most common of which is called [arsenopyrite](#). It may also be present in the environment due to a number of anthropogenic activities including: military operations and firing ranges; mining, especially sulfide ores; smelting copper, gold and lead ores; preservation of wood (CCA); chicken feed operations and associated manures (CAFO) due to arsenic-containing growth promoters; tanning and taxidermy operations; coal-burning emissions and ash-derived residues from power plants; and may be present in landfills and landfill-derived leachate. Arsenic may also be found due to the manufacture, use and disposal of: ammunition; fireworks; pigments (paint, paper, ceramics, etc.); older herbicides, insecticides, and pesticides (examples: monosodium methanearsonate (MSMA), disodium methanearsonate (DSMA) and lead-arsonate); electronics containing Gallium-Arsenide-Selenium (GAS) semi-conductors; lead acid battery plates; glass; and some pharmaceuticals. Other anthropogenic arsenic sources may likely exist. Arsenic contamination in soil is of public health concern due to its toxic effects as a carcinogen and a non-carcinogen. Making risk management decisions about arsenic can be difficult because natural occurring concentrations in soil often exceed carcinogenic risk based exposure values.

This guidance was prepared by the division using a data set of background arsenic concentrations developed by the U.S. EPA Region 8. The data set includes over 2,700 samples from 44 counties in Colorado. The areas sampled included: native grasslands; agricultural areas; urban mixed land use; and mining. A summary of the data set is presented in the table below. The complete data set may be found on the U.S. EPA Region 8's website at <http://www2.epa.gov/region8/hh-exposure-assessment>.

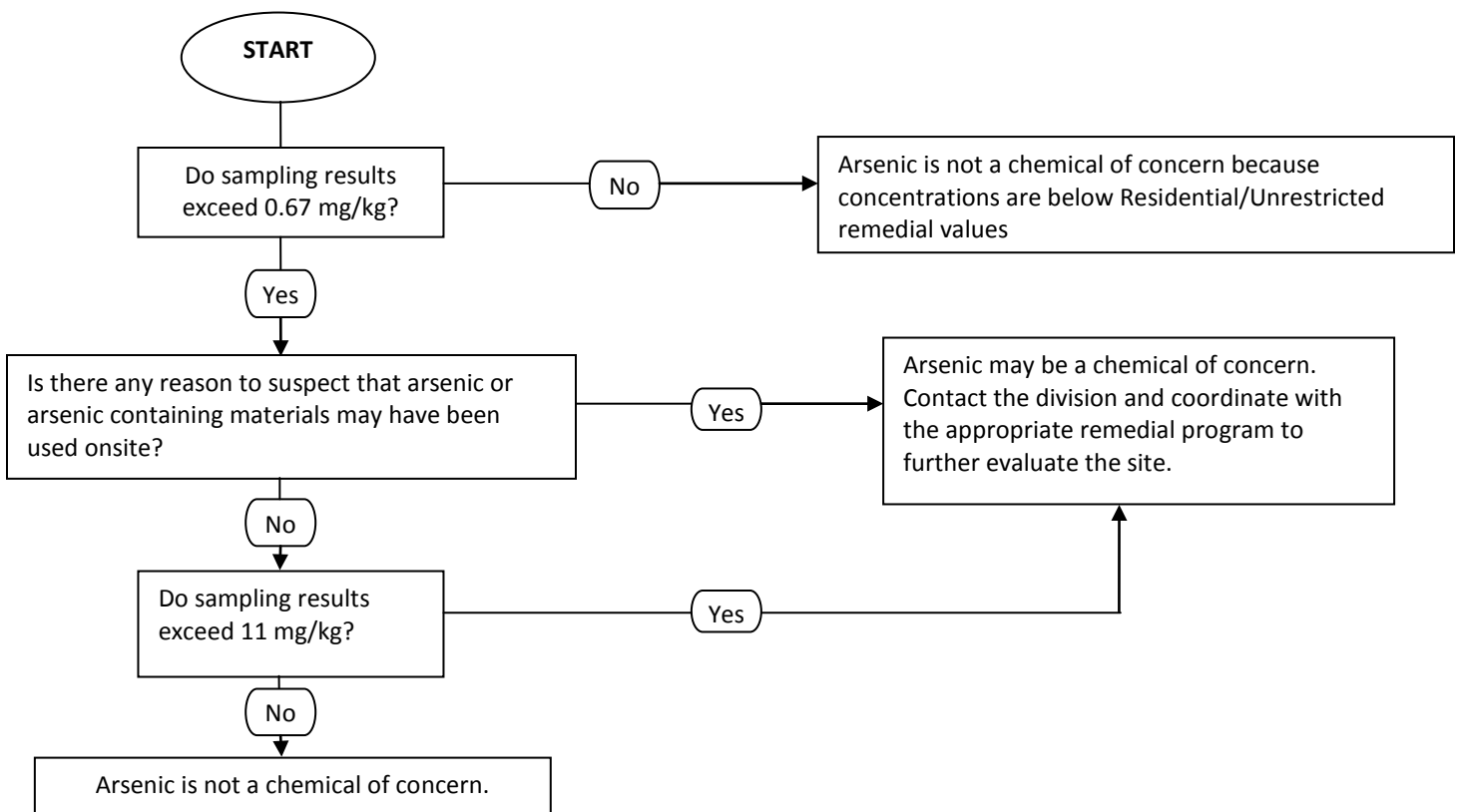
Region 8 U.S. EPA 95% UCLM Background Soil Arsenic Concentrations in Colorado

Land Use	Concentration (mg/kg)
Native Grassland, Rangeland, or Agriculture	3-14
Urban Mixed Use	6-19
Mining	10
Average of all land uses	11

Division Guidance Regarding Background Arsenic Concentration

The division's approach to evaluating arsenic in soil is depicted in the following flowchart. This guidance assumes that, based upon the size, history and environmental concerns associated with a particular site, an adequate amount of arsenic data has been obtained to make a determination regarding arsenic concentrations in soil. It isn't meant to be a guide on how to conduct a background study for risk assessment and/or site closure purposes. Guidance on the subject of data collection and analysis needs for conducting a background study should be sought from other published sources. Soil samples should be collected and analyzed for arsenic if the site history suggests it may be present as a result of anthropogenic activities. However, since arsenic is one of the chemicals included as part of a standard "metals" analysis package from a laboratory, you may already have obtained arsenic data for your site.

The current residential/unrestricted land use remedial objective for inorganic arsenic is 0.67 mg/kg (U.S. EPA regional screening level). If arsenic concentrations at your site are lower than 0.67 mg/kg, the division will require no further action to address arsenic in soil. If arsenic concentrations are lower than 11 mg/kg (the average of the 95% UCLM of background concentrations found by the U.S. EPA in Colorado), and releases of arsenic could not have occurred at the site, based on historical data or process knowledge, the division will require no further action to address arsenic in soil. If arsenic concentrations are greater than 0.67 mg/kg, and the available information suggests that a release of arsenic could have occurred at the site, the division will require additional evaluation of the data and possibly additional sampling to determine whether corrective measures for arsenic are required. This evaluation may include a site specific background study with sampling from offsite locations, and/or additional sampling in areas of the site where activities that could have contributed to environmental contamination never occurred. Please consult with the division prior to performing any background study. If it can be demonstrated that arsenic concentrations in soil are unrelated to site activities, the division will require no further action regarding arsenic. It should be noted that material such as arsenic-bearing mine tailings or oil and gas drill cuttings, although derived from a naturally occurring source material, are not considered to be naturally occurring background once they have been generated through human activity. Therefore, mine tailings and drill cuttings may be subject to remediation if ecological or health-based concentrations are exceeded.



For more information please contact:

Colorado Department of Public Health and Environment
Hazardous Materials and Waste Management Division
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

Customer Technical Assistance Line:
(303) 692-3320
(888) 569-1831 ext. 3320 toll-free
E-mail: comments.hmwmd@state.co.us
Website: www.colorado.gov/cdphe/hm











Groseclose 32-30 - Looking Southeast

Photographic Log



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 10, 2023

Jeb Watts

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Groseclose

Work Order #2306661

Enclosed are the results of analyses for samples received by Summit Scientific on 06/30/23 12:10. 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: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Tank@12-24"-Groseclose	2306661-01	Soil	06/29/23 10:50	06/30/23 12:10
Separator@12-24"-Groseclose	2306661-03	Soil	06/29/23 10:37	06/30/23 12:10
HA-1@12-24"-Groseclose	2306661-05	Soil	06/29/23 10:57	06/30/23 12:10
HA-2@12-24"-Groseclose	2306661-07	Soil	06/29/23 11:02	06/30/23 12:10
HA-3@12-24"-Groseclose	2306661-09	Soil	06/29/23 11:07	06/30/23 12:10

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: Tasman Geosciences		Send Data To:		Send Invoice To:	
Address: 6855 W 119th Ave		Project Manager: Jeb Watts / Aaron Liams		Company:	
City/State/Zip: Broomfield, CO, 80020		E-Mail: jwatts@tasman-geo.com		Project Name/Location:	
Phone: 303-487-1228		aiiams@foundationenergy.com		AFE#:	
Sampler Name: Keegan Macdonald		Project Name: Groseclose		PO/Billing Codes:	
		Project Number:		Contact:	

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	915 Metals	915 Soil Suitability	915 TPH	915 Organics						
1	Tank @ 12-24" - Groseclose	6/29	10:50	2			X			X			X	X	X	H						
2	Tank @ 24" - 36" - Groseclose		10:51										H	H	H							
3	Separator @ 12-24" - Groseclose		10:37										X	X	X							
4	Separator @ 24-36" - Groseclose		10:38										H	H	H							
5	HA-1 @ 12-24" - Groseclose		10:57										X	X	X							
6	HA-1 @ 24-36" - Groseclose		10:58										H	H	H							
7	HA-2 @ 12-24" - Groseclose		11:02										X	X	X							
8	HA-2 @ 24-36" - Groseclose		11:03										H	H	H							
9	HA-3 @ 12-24" - Groseclose		11:07										X	X	X							
10	HA-3 @ 24-36" - Groseclose		11:08										H	H	H							
11																						
12																						
13																						
14																						
15																						

Relinquished by:	Date/Time:	Received by:	Date/Time:	TAT Business Days	Field DO ₂	Notes: H = Hold
Keegan Macdonald	6/30 12:10	Jeb Watts	6/30/23 12:10	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	X Field Turb.	

S₂

Sample Receipt Checklist

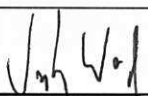
S2 Work Order# 2306661Client: Tasman Client Project ID: GrosecloseShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input checked="" 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) 8.5 Thermometer # 2

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

Additional Comments (if any):

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

 Custodian Printed Name

6/30/23 12:10
 Date/Time



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

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

Tank@12-24''-Groseclose
2306661-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Gasoline Range Hydrocarbons	ND	0.50	mg/kg	1	BGG0092	07/05/23	07/05/23	EPA 8260B	

Date Sampled: **06/29/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0390	97.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0423	106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0428	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/29/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0093	07/05/23	07/06/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/29/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.17	73.3 %	30-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/29/23 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.115	0.0100	mg/L	1	BGG0198	07/07/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

Tank@12-24"-Groseclose
2306661-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/29/23 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.09	0.200	mg/kg dry	1	BGG0133	07/06/23	07/07/23	EPA 6020B	
Barium	222	0.400	"	"	"	"	"	"	
Cadmium	0.334	0.200	"	"	"	"	"	"	
Copper	2.46	0.400	"	"	"	"	"	"	
Lead	9.03	0.200	"	"	"	"	"	"	
Nickel	2.54	0.400	"	"	"	"	"	"	
Selenium	ND	0.306	"	"	"	"	"	"	
Silver	0.0617	0.0200	"	"	"	"	"	"	
Zinc	7.72	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/29/23 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0192	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **06/29/23 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	266	0.0589	mg/L dry	1	BGG0238	07/10/23	07/12/23	EPA 6020B	
Magnesium	7.61	0.0589	"	"	"	"	"	"	
Sodium	39.1	0.0589	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/29/23 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.645	0.00100	units	1	BGG0373	07/13/23	07/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Reported:
08/10/23 10:08

Tank@12-24"-Groseclose
2306661-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/29/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.9		%	1	BGG0130	07/06/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/29/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.447	0.0100	mmhos/cm	1	BGG0278	07/11/23	07/11/23	EPA 120.1	

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

Date Sampled: **06/29/23 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.81		pH Units	1	BGG0277	07/11/23	07/11/23	EPA 9045D	

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

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

**Separator@12-24''-Groseclose
2306661-03 (Soil)**

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/23 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Gasoline Range Hydrocarbons	ND	0.50	mg/kg	1	BGG0092	07/05/23	07/05/23	EPA 8260B	

Date Sampled: **06/29/23 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0384	96.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0428	107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0422	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/29/23 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0093	07/05/23	07/06/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/29/23 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.5	99.9 %	30-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/29/23 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.139	0.0100	mg/L	1	BGG0198	07/07/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

Summit Scientific

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Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

**Separator@12-24''-Groseclose
2306661-03 (Soil)**

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/29/23 10:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.931	0.200	mg/kg dry	1	BGG0133	07/06/23	07/07/23	EPA 6020B	
Barium	152	0.400	"	"	"	"	"	"	
Cadmium	0.343	0.200	"	"	"	"	"	"	
Copper	1.90	0.400	"	"	"	"	"	"	
Lead	8.75	0.200	"	"	"	"	"	"	
Nickel	2.67	0.400	"	"	"	"	"	"	
Selenium	ND	0.308	"	"	"	"	"	"	
Silver	0.0615	0.0200	"	"	"	"	"	"	
Zinc	7.12	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/29/23 10:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0192	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **06/29/23 10:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	498	0.0592	mg/L dry	1	BGG0238	07/10/23	07/12/23	EPA 6020B	
Magnesium	56.8	0.0592	"	"	"	"	"	"	
Sodium	40.5	0.0592	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/29/23 10:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.458	0.00100	units	1	BGG0373	07/13/23	07/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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6855 W. 119th Ave.
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Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

**Separator@12-24''-Groseclose
2306661-03 (Soil)**

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/29/23 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.5		%	1	BGG0130	07/06/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/29/23 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.305	0.0100	mmhos/cm	1	BGG0278	07/11/23	07/11/23	EPA 120.1	

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

Date Sampled: **06/29/23 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.90		pH Units	1	BGG0277	07/11/23	07/11/23	EPA 9045D	

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

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

HA-1@12-24"-Groseclose
2306661-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/23 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Gasoline Range Hydrocarbons	ND	0.50	mg/kg	1	BGG0092	07/05/23	07/05/23	EPA 8260B	

Date Sampled: **06/29/23 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0364	90.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0396	99.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0420	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/29/23 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0093	07/05/23	07/06/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/29/23 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.8	111 %	30-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/29/23 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.208	0.0100	mg/L	1	BGG0198	07/07/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

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

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

HA-1@12-24"-Groseclose
2306661-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/29/23 10:57**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.961	0.200	mg/kg dry	1	BGG0133	07/06/23	07/07/23	EPA 6020B	
Barium	170	0.400	"	"	"	"	"	"	
Cadmium	0.352	0.200	"	"	"	"	"	"	
Copper	2.23	0.400	"	"	"	"	"	"	
Lead	8.58	0.200	"	"	"	"	"	"	
Nickel	2.40	0.400	"	"	"	"	"	"	
Selenium	ND	0.305	"	"	"	"	"	"	
Silver	0.0488	0.0200	"	"	"	"	"	"	
Zinc	7.83	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/29/23 10:57**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0192	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **06/29/23 10:57**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	2350	0.0586	mg/L dry	1	BGG0238	07/10/23	07/12/23	EPA 6020B	
Magnesium	106	0.0586	"	"	"	"	"	"	
Sodium	155	0.0586	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/29/23 10:57**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.849	0.00100	units	1	BGG0373	07/13/23	07/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

HA-1@12-24"-Groseclose
2306661-05 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/29/23 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.3		%	1	BGG0130	07/06/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/29/23 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.591	0.0100	mmhos/cm	1	BGG0278	07/11/23	07/11/23	EPA 120.1	

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

Date Sampled: **06/29/23 10:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.27		pH Units	1	BGG0277	07/11/23	07/11/23	EPA 9045D	

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Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

HA-2@12-24"-Groseclose
2306661-07 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Gasoline Range Hydrocarbons	ND	0.50	mg/kg	1	BGG0092	07/05/23	07/05/23	EPA 8260B	

Date Sampled: **06/29/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0372	93.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/29/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0093	07/05/23	07/06/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/29/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.4	99.5 %	30-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/29/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.103	0.0100	mg/L	1	BGG0198	07/07/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

HA-2@12-24"-Groseclose
2306661-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/29/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.961	0.200	mg/kg dry	1	BGG0133	07/06/23	07/07/23	EPA 6020B	
Barium	148	0.400	"	"	"	"	"	"	
Cadmium	0.256	0.200	"	"	"	"	"	"	
Copper	2.22	0.400	"	"	"	"	"	"	
Lead	8.15	0.200	"	"	"	"	"	"	
Nickel	2.54	0.400	"	"	"	"	"	"	
Selenium	ND	0.297	"	"	"	"	"	"	
Silver	0.0603	0.0200	"	"	"	"	"	"	
Zinc	6.85	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/29/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0192	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **06/29/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	36.2	0.0571	mg/L dry	1	BGG0238	07/10/23	07/12/23	EPA 6020B	
Magnesium	5.24	0.0571	"	"	"	"	"	"	
Sodium	5.36	0.0571	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/29/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.220	0.00100	units	1	BGG0373	07/13/23	07/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

HA-2@12-24"-Groseclose
2306661-07 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/29/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.6		%	1	BGG0130	07/06/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/29/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.514	0.0100	mmhos/cm	1	BGG0278	07/11/23	07/11/23	EPA 120.1	

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

Date Sampled: **06/29/23 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.60		pH Units	1	BGG0277	07/11/23	07/11/23	EPA 9045D	

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Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

HA-3@12-24"-Groseclose
2306661-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/29/23 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Gasoline Range Hydrocarbons	ND	0.50	mg/kg	1	BGG0092	07/05/23	07/06/23	EPA 8260B	

Date Sampled: **06/29/23 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0391	97.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0416	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0426	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/29/23 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0093	07/05/23	07/06/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/29/23 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.2	81.7 %	30-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/29/23 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0617	0.0100	mg/L	1	BGG0198	07/07/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

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Broomfield CO, 80020

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

HA-3@12-24"-Groseclose
2306661-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/29/23 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.891	0.200	mg/kg dry	1	BGG0133	07/06/23	07/07/23	EPA 6020B	
Barium	146	0.400	"	"	"	"	"	"	
Cadmium	0.298	0.200	"	"	"	"	"	"	
Copper	1.98	0.400	"	"	"	"	"	"	
Lead	8.16	0.200	"	"	"	"	"	"	
Nickel	2.39	0.400	"	"	"	"	"	"	
Selenium	ND	0.304	"	"	"	"	"	"	
Silver	0.0379	0.0200	"	"	"	"	"	"	
Zinc	7.25	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/29/23 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0192	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **06/29/23 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	292	0.0584	mg/L dry	1	BGG0238	07/10/23	07/12/23	EPA 6020B	
Magnesium	33.9	0.0584	"	"	"	"	"	"	
Sodium	11.5	0.0584	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/29/23 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.170	0.00100	units	1	BGG0373	07/13/23	07/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

HA-3@12-24"-Groseclose
2306661-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/29/23 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.6		%	1	BGG0130	07/06/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/29/23 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.305	0.0100	mmhos/cm	1	BGG0278	07/11/23	07/11/23	EPA 120.1	

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

Date Sampled: **06/29/23 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.65		pH Units	1	BGG0277	07/11/23	07/11/23	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Groseclose

Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

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 BGG0092 - EPA 5030 Soil MS

Blank (BGG0092-BLK1)

Prepared & Analyzed: 07/05/23

Gasoline Range Hydrocarbons	ND	0.50	mg/kg							
Surrogate: 1,2-Dichloroethane-d4	0.0362		"	0.0400		90.5	50-150			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0424		"	0.0400		106	50-150			

LCS (BGG0092-BS1)

Prepared & Analyzed: 07/05/23

Surrogate: 1,2-Dichloroethane-d4	0.0325		mg/kg	0.0400		81.3	50-150			
Surrogate: Toluene-d8	0.0429		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

Matrix Spike (BGG0092-MS1)

Source: 2306660-01

Prepared & Analyzed: 07/05/23

Surrogate: 1,2-Dichloroethane-d4	0.0346		mg/kg	0.0400		86.6	50-150			
Surrogate: Toluene-d8	0.0431		"	0.0400		108	50-150			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	50-150			

Matrix Spike Dup (BGG0092-MSD1)

Source: 2306660-01

Prepared & Analyzed: 07/05/23

Surrogate: 1,2-Dichloroethane-d4	0.0341		mg/kg	0.0400		85.2	50-150			
Surrogate: Toluene-d8	0.0423		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	50-150			

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

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 BGG0093 - EPA 3550A

Blank (BGG0093-BLK1)

Prepared & Analyzed: 07/05/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.7		"	12.5		85.7	30-150			

LCS (BGG0093-BS1)

Prepared & Analyzed: 07/05/23

C10-C28 (DRO)	357	50	mg/kg	500		71.3	70-130			
Surrogate: o-Terphenyl	15.1		"	12.5		121	30-150			

Matrix Spike (BGG0093-MS1)

Source: 2306660-01

Prepared & Analyzed: 07/05/23

C10-C28 (DRO)	385	50	mg/kg	500	15.4	73.9	70-130			
Surrogate: o-Terphenyl	14.5		"	12.5		116	30-150			

Matrix Spike Dup (BGG0093-MSD1)

Source: 2306660-01

Prepared & Analyzed: 07/05/23

C10-C28 (DRO)	447	50	mg/kg	500	15.4	86.2	70-130	14.9	20	
Surrogate: o-Terphenyl	14.3		"	12.5		114	30-150			

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

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 BGG0198 - EPA 3050B

Blank (BGG0198-BLK1)

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

Boron ND 0.0100 mg/L

LCS (BGG0198-BS1)

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

Boron 5.46 0.0100 mg/L 5.00 109 80-120

Duplicate (BGG0198-DUP1)

Source: 2306661-01

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

Boron 0.0970 0.0100 mg/L 0.115 16.9 20

Matrix Spike (BGG0198-MS1)

Source: 2306661-01

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

Boron 4.71 0.0100 mg/L 5.00 0.115 91.9 75-125

Matrix Spike Dup (BGG0198-MSD1)

Source: 2306661-01

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

Boron 4.64 0.0100 mg/L 5.00 0.115 90.5 75-125 1.46 25

Summit Scientific

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

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

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 BGG0133 - EPA 3050B

Blank (BGG0133-BLK1)

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

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 (BGG0133-BS1)

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

Arsenic	45.7	0.200	mg/kg wet	40.0	114	80-120
Barium	39.5	0.400	"	40.0	98.7	80-120
Cadmium	1.92	0.200	"	2.00	95.8	80-120
Copper	46.6	0.400	"	40.0	117	80-120
Lead	19.3	0.200	"	20.0	96.3	80-120
Nickel	46.1	0.400	"	40.0	115	80-120
Selenium	4.63	0.260	"	4.00	116	80-120
Silver	1.89	0.0200	"	2.00	94.3	80-120
Zinc	44.7	0.400	"	40.0	112	80-120

Duplicate (BGG0133-DUP1)

Source: 2306659-01

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

Arsenic	0.487	0.200	mg/kg dry	0.530	8.47	20
Barium	31.3	0.400	"	27.7	12.0	20
Cadmium	0.0733	0.200	"	0.0652	11.7	20
Copper	0.861	0.400	"	0.848	1.45	20
Lead	2.44	0.200	"	2.00	20.0	20
Nickel	1.09	0.400	"	1.01	7.74	20
Selenium	ND	0.277	"	ND		20
Silver	0.0128	0.0200	"	0.0102	22.2	20
Zinc	4.15	0.400	"	3.52	16.3	20

QR-01

Summit Scientific

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

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

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 BGG0133 - EPA 3050B

Matrix Spike (BGG0133-MS1)		Source: 2306659-01			Prepared: 07/06/23 Analyzed: 07/07/23						
Arsenic	23.7	0.200	mg/kg dry	42.6	0.530	54.3	75-125				QM-07
Barium	83.8	0.400	"	42.6	27.7	131	75-125				QM-07
Cadmium	2.18	0.200	"	2.13	0.0652	99.1	75-125				
Copper	25.2	0.400	"	42.6	0.848	57.1	75-125				QM-07
Lead	23.0	0.200	"	21.3	2.00	98.4	75-125				
Nickel	25.3	0.400	"	42.6	1.01	57.1	75-125				QM-07
Selenium	4.80	0.277	"	4.26	ND	113	75-125				
Silver	2.04	0.0200	"	2.13	0.0102	95.4	75-125				
Zinc	28.9	0.400	"	42.6	3.52	59.5	75-125				QM-07

Matrix Spike Dup (BGG0133-MSD1)		Source: 2306659-01			Prepared: 07/06/23 Analyzed: 07/07/23						
Arsenic	23.1	0.200	mg/kg dry	42.6	0.530	53.0	75-125	2.43	25		QM-07
Barium	75.1	0.400	"	42.6	27.7	111	75-125	10.9	25		
Cadmium	2.05	0.200	"	2.13	0.0652	93.0	75-125	6.11	25		
Copper	24.0	0.400	"	42.6	0.848	54.4	75-125	4.66	25		QM-07
Lead	21.2	0.200	"	21.3	2.00	90.1	75-125	7.98	25		
Nickel	23.9	0.400	"	42.6	1.01	53.8	75-125	5.72	25		QM-07
Selenium	4.55	0.277	"	4.26	ND	107	75-125	5.38	25		
Silver	1.95	0.0200	"	2.13	0.0102	90.9	75-125	4.83	25		
Zinc	26.5	0.400	"	42.6	3.52	53.9	75-125	8.62	25		QM-07

Summit Scientific

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

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

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 BGG0192 - 3060A Mod

Blank (BGG0192-BLK1)

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0192-BS1)

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent 23.4 0.30 mg/kg wet 25.0 93.8 80-120

Duplicate (BGG0192-DUP1)

Source: 2307070-01

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0192-MS1)

Source: 2307070-01

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent 27.3 0.30 mg/kg dry 28.5 ND 95.8 75-125

Matrix Spike Dup (BGG0192-MSD1)

Source: 2307070-01

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent 27.1 0.30 mg/kg dry 28.5 ND 95.2 75-125 0.628 20

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Groseclose
Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

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 BGG0238 - General Preparation

Blank (BGG0238-BLK1)

Prepared: 07/10/23 Analyzed: 07/12/23

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

LCS (BGG0238-BS1)

Prepared: 07/10/23 Analyzed: 07/12/23

Calcium	4.74	0.0500	mg/L wet	5.00	94.8	70-130
Magnesium	4.77	0.0500	"	5.00	95.5	70-130
Sodium	4.92	0.0500	"	5.00	98.4	70-130

Summit Scientific

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

Project: Groseclose

Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

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 BGG0130 - General Preparation

Duplicate (BGG0130-DUP1)

Source: 2306661-01

Prepared: 07/06/23 Analyzed: 07/10/23

% Solids	85.4	%	84.9	0.541	20
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Summit Scientific

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

Project: Groseclose

Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

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

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

Batch BGG0278 - General Preparation

Blank (BGG0278-BLK1)

Prepared & Analyzed: 07/11/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0278-BS1)

Prepared & Analyzed: 07/11/23

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BGG0278-DUP1)

Source: 2306659-01

Prepared & Analyzed: 07/11/23

Specific Conductance (EC) 0.196 0.0100 mmhos/cm 0.198 0.710 20

Summit Scientific

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

Project: Groseclose

Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

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 BGG0277 - General Preparation

LCS (BGG0277-BS1)

Prepared & Analyzed: 07/11/23

pH	9.06	pH Units	9.18	98.7	95-105
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Duplicate (BGG0277-DUP1)

Source: 2306659-01

Prepared & Analyzed: 07/11/23

pH	7.46	pH Units	7.47	0.134	20
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Summit Scientific

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

Project: Groseclose

Project Number: [none]
Project Manager: Jeb Watts

Reported:
08/10/23 10:08

Notes and Definitions

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