

## CERTIFICATE OF ANALYSIS

**REPORTED TO** Geoengineering Free Canada  
Kelowna, BC V1Y9T1  
Bettina

**ATTENTION**  
**PO NUMBER** Metals Testing  
**PROJECT** Online Order #  
**PROJECT INFO**

**WORK ORDER** 23H3395  
**RECEIVED / TEMP REPORTED** 2023-08-25 16:04 / 27.4°C  
2023-09-01 16:35  
**COC NUMBER** No Number

### Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

#### *Big Picture Sidekicks*



You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

#### *We've Got Chemistry*



It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

#### *Ahead of the Curve*



Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

### Work Order Comments:

Custody Seals Intact: N/A

By engaging our services, you are agreeing to CARO Analytical Service's Standard Terms and Conditions outlined here: <https://www.caro.ca/terms-conditions>

If you have any questions or concerns, please contact me at [TeamCaro@caro.ca](mailto:TeamCaro@caro.ca)

### Authorized By:

Team CARO  
Client Service Representative

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# TEST RESULTS

**REPORTED TO PROJECT** Geoengineering Free Canada  
Metals Testing

**WORK ORDER REPORTED** 23H3395  
2023-09-01 16:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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**GFC1 (23H3395-01) | Matrix: Water | Sampled: 2023-08-24 12:30**

**Calculated Parameters**

Hardness, Total (as CaCO3)	82.6	None Required	0.500	mg/L	N/A	
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**Total Metals**

Aluminum, total	0.0144	OG < 0.1	0.0050	mg/L	2023-09-01	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2023-09-01	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2023-09-01	
Barium, total	0.0237	MAC = 2	0.0050	mg/L	2023-09-01	
Beryllium, total	< 0.00010	N/A	0.00010	mg/L	2023-09-01	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2023-09-01	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2023-09-01	
Cadmium, total	< 0.000010	MAC = 0.007	0.000010	mg/L	2023-09-01	
Calcium, total	24.7	None Required	0.20	mg/L	2023-09-01	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2023-09-01	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2023-09-01	
Copper, total	< 0.00040	MAC = 2	0.00040	mg/L	2023-09-01	
Iron, total	0.050	AO ≤ 0.3	0.010	mg/L	2023-09-01	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2023-09-01	
Lithium, total	0.00148	N/A	0.00010	mg/L	2023-09-01	
Magnesium, total	5.04	None Required	0.010	mg/L	2023-09-01	
Manganese, total	0.00372	MAC = 0.12	0.00020	mg/L	2023-09-01	
Molybdenum, total	0.00165	N/A	0.00010	mg/L	2023-09-01	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2023-09-01	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2023-09-01	
Potassium, total	1.57	N/A	0.10	mg/L	2023-09-01	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2023-09-01	
Silicon, total	9.2	N/A	1.0	mg/L	2023-09-01	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2023-09-01	
Sodium, total	5.56	AO ≤ 200	0.10	mg/L	2023-09-01	
Strontium, total	0.201	MAC = 7	0.0010	mg/L	2023-09-01	
Sulfur, total	3.0	N/A	3.0	mg/L	2023-09-01	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2023-09-01	
Thallium, total	< 0.000020	N/A	0.000020	mg/L	2023-09-01	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2023-09-01	
Tin, total	< 0.00020	N/A	0.00020	mg/L	2023-09-01	
Titanium, total	< 0.0050	N/A	0.0050	mg/L	2023-09-01	
Tungsten, total	< 0.0010	N/A	0.0010	mg/L	2023-09-01	
Uranium, total	0.000816	MAC = 0.02	0.000020	mg/L	2023-09-01	
Vanadium, total	< 0.0050	N/A	0.0050	mg/L	2023-09-01	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2023-09-01	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2023-09-01	

**GFC2 (23H3395-02) | Matrix: Water | Sampled: 2023-08-24 12:30**



# TEST RESULTS

**REPORTED TO PROJECT** Geoengineering Free Canada  
Metals Testing

**WORK ORDER REPORTED** 23H3395  
2023-09-01 16:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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**GFC2 (23H3395-02) | Matrix: Water | Sampled: 2023-08-24 12:30, Continued**

**Calculated Parameters**

Hardness, Total (as CaCO3)	216	None Required	0.500	mg/L		N/A
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**Total Metals**

Aluminum, total	0.0215	OG < 0.1	0.0050	mg/L		2023-09-01
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L		2023-09-01
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L		2023-09-01
Barium, total	0.0455	MAC = 2	0.0050	mg/L		2023-09-01
Beryllium, total	< 0.00010	N/A	0.00010	mg/L		2023-09-01
Bismuth, total	< 0.00010	N/A	0.00010	mg/L		2023-09-01
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L		2023-09-01
Cadmium, total	0.000032	MAC = 0.007	0.000010	mg/L		2023-09-01
Calcium, total	71.7	None Required	0.20	mg/L		2023-09-01
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L		2023-09-01
Cobalt, total	0.00011	N/A	0.00010	mg/L		2023-09-01
Copper, total	0.0561	MAC = 2	0.00040	mg/L		2023-09-01
Iron, total	0.081	AO ≤ 0.3	0.010	mg/L		2023-09-01
Lead, total	0.00113	MAC = 0.005	0.00020	mg/L		2023-09-01
Lithium, total	0.00167	N/A	0.00010	mg/L		2023-09-01
Magnesium, total	8.97	None Required	0.010	mg/L		2023-09-01
Manganese, total	0.00733	MAC = 0.12	0.00020	mg/L		2023-09-01
Molybdenum, total	0.00125	N/A	0.00010	mg/L		2023-09-01
Nickel, total	0.00697	N/A	0.00040	mg/L		2023-09-01
Phosphorus, total	< 0.050	N/A	0.050	mg/L		2023-09-01
Potassium, total	2.14	N/A	0.10	mg/L		2023-09-01
Selenium, total	0.00065	MAC = 0.05	0.00050	mg/L		2023-09-01
Silicon, total	8.9	N/A	1.0	mg/L		2023-09-01
Silver, total	< 0.000050	None Required	0.000050	mg/L		2023-09-01
Sodium, total	10.5	AO ≤ 200	0.10	mg/L		2023-09-01
Strontium, total	0.273	MAC = 7	0.0010	mg/L		2023-09-01
Sulfur, total	23.1	N/A	3.0	mg/L		2023-09-01
Tellurium, total	< 0.00050	N/A	0.00050	mg/L		2023-09-01
Thallium, total	< 0.000020	N/A	0.000020	mg/L		2023-09-01
Thorium, total	< 0.00010	N/A	0.00010	mg/L		2023-09-01
Tin, total	< 0.00020	N/A	0.00020	mg/L		2023-09-01
Titanium, total	< 0.0050	N/A	0.0050	mg/L		2023-09-01
Tungsten, total	< 0.0010	N/A	0.0010	mg/L		2023-09-01
Uranium, total	0.00159	MAC = 0.02	0.000020	mg/L		2023-09-01
Vanadium, total	< 0.0050	N/A	0.0050	mg/L		2023-09-01
Zinc, total	0.686	AO ≤ 5	0.0040	mg/L		2023-09-01
Zirconium, total	< 0.00010	N/A	0.00010	mg/L		2023-09-01

**GFC3 (23H3395-03) | Matrix: Soil | Sampled: 2023-08-24 12:20**



# TEST RESULTS

**REPORTED TO PROJECT** Geoengineering Free Canada Metals Testing

**WORK ORDER REPORTED** 23H3395  
2023-09-01 16:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
<b>GFC3 (23H3395-03)   Matrix: Soil   Sampled: 2023-08-24 12:20, Continued</b>						
<i>Strong Acid Leachable Metals</i>						
Aluminum	8750	N/A	40	mg/kg dry	2023-08-30	
Antimony	0.25	N/A	0.10	mg/kg dry	2023-08-30	
Arsenic	14.5	N/A	0.30	mg/kg dry	2023-08-30	
Barium	86.6	N/A	1.0	mg/kg dry	2023-08-30	
Beryllium	0.43	N/A	0.10	mg/kg dry	2023-08-30	
Bismuth	0.17	N/A	0.10	mg/kg dry	2023-08-30	
Boron	2.7	N/A	2.0	mg/kg dry	2023-08-30	
Cadmium	0.300	N/A	0.040	mg/kg dry	2023-08-30	
Calcium	6530	N/A	100	mg/kg dry	2023-08-30	
Chromium	19.2	N/A	1.0	mg/kg dry	2023-08-30	
Cobalt	8.92	N/A	0.10	mg/kg dry	2023-08-30	
Copper	42.3	N/A	0.40	mg/kg dry	2023-08-30	
Iron	17400	N/A	20.0	mg/kg dry	2023-08-30	
Lead	11.7	N/A	0.20	mg/kg dry	2023-08-30	
Lithium	9.51	N/A	0.10	mg/kg dry	2023-08-30	
Magnesium	3710	N/A	10	mg/kg dry	2023-08-30	
Manganese	304	N/A	0.40	mg/kg dry	2023-08-30	
Mercury	< 0.040	N/A	0.040	mg/kg dry	2023-08-30	
Molybdenum	0.95	N/A	0.10	mg/kg dry	2023-08-30	
Nickel	12.1	N/A	0.60	mg/kg dry	2023-08-30	
Phosphorus	1190	N/A	10	mg/kg dry	2023-08-30	
Potassium	1250	N/A	40	mg/kg dry	2023-08-30	
Selenium	0.37	N/A	0.20	mg/kg dry	2023-08-30	
Silver	0.14	N/A	0.10	mg/kg dry	2023-08-30	
Sodium	216	N/A	50	mg/kg dry	2023-08-30	
Strontium	48.0	N/A	0.20	mg/kg dry	2023-08-30	
Sulfur	< 1000	N/A	1000	mg/kg dry	2023-08-30	
Tellurium	< 0.10	N/A	0.10	mg/kg dry	2023-08-30	
Thallium	< 0.10	N/A	0.10	mg/kg dry	2023-08-30	
Thorium	5.95	N/A	0.50	mg/kg dry	2023-08-30	
Tin	0.74	N/A	0.20	mg/kg dry	2023-08-30	
Titanium	585	N/A	1.0	mg/kg dry	2023-08-30	
Tungsten	0.21	N/A	0.20	mg/kg dry	2023-08-30	
Uranium	4.17	N/A	0.050	mg/kg dry	2023-08-30	
Vanadium	37.6	N/A	1.0	mg/kg dry	2023-08-30	
Zinc	57.2	N/A	2.0	mg/kg dry	2023-08-30	
Zirconium	< 2.0	N/A	2.0	mg/kg dry	2023-08-30	



## APPENDIX 1: SUPPORTING INFORMATION

**REPORTED TO PROJECT** Geoengineering Free Canada  
Metals Testing

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Analysis Description	Method Ref.	Technique	Accredited	Location
Hardness in Water	SM 2340 B* (2021)	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)	✓	N/A
SALM in Soil	BCMOE SALM V.2 / EPA 6020B	HNO <sub>3</sub> +HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO <sub>3</sub> +HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

*Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method*

### Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration (health based)
mg/kg dry	Milligrams per kilogram (dry weight basis)
mg/L	Milligrams per litre
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

### Guidelines Referenced in this Report:

[Guidelines for Canadian Drinking Water Quality \(Health Canada, September 2022\)](#)

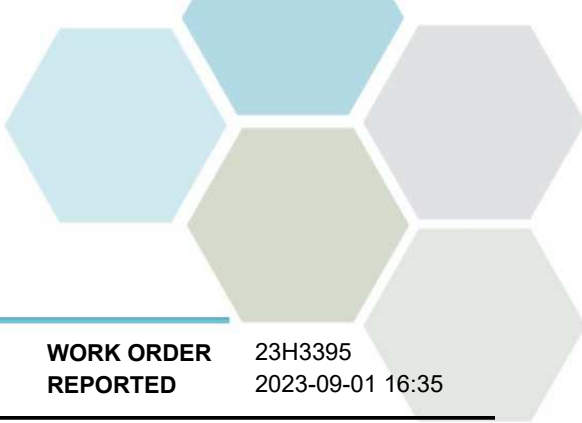
*Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user*

### General Comments:

The results in this report apply to the received samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Caro will dispose of all samples within 30 days of sample receipt, unless otherwise agreed.

Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted **red**. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do not take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager: [TeamCaro@caro.ca](mailto:TeamCaro@caro.ca)

*Please note any regulatory guidelines applied to this report are added as a convenience to the client, at their request, to help provide some initial context to analytical results obtained. Although CARO makes every effort to ensure accuracy of the associated regulatory guideline(s) applied, the guidelines applied cannot be assumed to be correct due to a variety of factors and as such CARO Analytical Services assumes no liability or responsibility for the use of those guidelines to make any decisions. The original source of the regulation should be verified and a review of the guideline(s) should be validated as correct in order to make any decisions arising from the comparison of the analytical data obtained to the relevant regulatory guideline for one's particular circumstances. Further, CARO Analytical Services assumes no liability or responsibility for any loss attributed from the use of these guidelines in any way.*



## APPENDIX 2: QUALITY CONTROL RESULTS

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Metals Testing

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The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in “batches” and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk):** A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup):** An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS):** A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS):** A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM):** A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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**Strong Acid Leachable Metals, Batch B3H3168**

Blank (B3H3168-BLK1)			Prepared: 2023-08-30, Analyzed: 2023-08-30						
Aluminum	< 40	40 mg/kg dry							
Antimony	< 0.10	0.10 mg/kg dry							
Arsenic	< 0.30	0.30 mg/kg dry							
Barium	< 1.0	1.0 mg/kg dry							
Beryllium	< 0.10	0.10 mg/kg dry							
Bismuth	< 0.10	0.10 mg/kg dry							
Boron	< 2.0	2.0 mg/kg dry							
Cadmium	< 0.040	0.040 mg/kg dry							
Calcium	< 100	100 mg/kg dry							
Chromium	< 1.0	1.0 mg/kg dry							
Cobalt	< 0.10	0.10 mg/kg dry							
Copper	< 0.40	0.40 mg/kg dry							
Iron	< 20.0	20.0 mg/kg dry							
Lead	< 0.20	0.20 mg/kg dry							
Lithium	< 0.10	0.10 mg/kg dry							
Magnesium	< 10	10 mg/kg dry							
Manganese	< 0.40	0.40 mg/kg dry							
Mercury	< 0.040	0.040 mg/kg dry							
Molybdenum	< 0.10	0.10 mg/kg dry							
Nickel	< 0.60	0.60 mg/kg dry							
Phosphorus	< 10	10 mg/kg dry							
Potassium	< 40	40 mg/kg dry							
Selenium	< 0.20	0.20 mg/kg dry							
Silver	< 0.10	0.10 mg/kg dry							
Sodium	< 50	50 mg/kg dry							
Strontium	< 0.20	0.20 mg/kg dry							
Sulfur	< 1000	1000 mg/kg dry							
Tellurium	< 0.10	0.10 mg/kg dry							
Thallium	< 0.10	0.10 mg/kg dry							
Thorium	< 0.50	0.50 mg/kg dry							
Tin	< 0.20	0.20 mg/kg dry							
Titanium	< 1.0	1.0 mg/kg dry							
Tungsten	< 0.20	0.20 mg/kg dry							
Uranium	< 0.050	0.050 mg/kg dry							
Vanadium	< 1.0	1.0 mg/kg dry							
Zinc	< 2.0	2.0 mg/kg dry							



## APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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**Strong Acid Leachable Metals, Batch B3H3168, Continued**

**Blank (B3H3168-BLK1), Continued**

Prepared: 2023-08-30, Analyzed: 2023-08-30

Zirconium	< 2.0	2.0 mg/kg dry							
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**LCS (B3H3168-BS1)**

Prepared: 2023-08-30, Analyzed: 2023-08-30

Aluminum	195	40 mg/kg dry	200		97	80-120			
Antimony	1.91	0.10 mg/kg dry	2.00		96	80-120			
Arsenic	19.4	0.30 mg/kg dry	20.0		97	80-120			
Barium	2.0	1.0 mg/kg dry	2.00		99	80-120			
Beryllium	1.87	0.10 mg/kg dry	2.00		93	80-120			
Bismuth	1.95	0.10 mg/kg dry	2.00		98	80-120			
Boron	19.3	2.0 mg/kg dry	20.0		96	80-120			
Cadmium	1.94	0.040 mg/kg dry	2.00		97	80-120			
Calcium	195	100 mg/kg dry	200		98	80-120			
Chromium	2.0	1.0 mg/kg dry	2.00		98	80-120			
Cobalt	1.97	0.10 mg/kg dry	2.00		99	80-120			
Copper	1.97	0.40 mg/kg dry	2.00		99	80-120			
Iron	200	20.0 mg/kg dry	200		100	80-120			
Lead	1.95	0.20 mg/kg dry	2.00		97	80-120			
Lithium	1.88	0.10 mg/kg dry	2.00		94	80-120			
Magnesium	200	10 mg/kg dry	200		100	80-120			
Manganese	2.00	0.40 mg/kg dry	2.00		100	80-120			
Mercury	0.200	0.040 mg/kg dry	0.200		100	80-120			
Molybdenum	1.91	0.10 mg/kg dry	2.00		96	80-120			
Nickel	1.97	0.60 mg/kg dry	2.00		99	80-120			
Phosphorus	191	10 mg/kg dry	200		96	80-120			
Potassium	197	40 mg/kg dry	200		98	80-120			
Selenium	19.8	0.20 mg/kg dry	20.0		99	80-120			
Silver	1.97	0.10 mg/kg dry	2.00		99	80-120			
Sodium	196	50 mg/kg dry	200		98	80-120			
Strontium	1.91	0.20 mg/kg dry	2.00		96	80-120			
Sulfur	1950	1000 mg/kg dry	2000		98	80-120			
Tellurium	1.90	0.10 mg/kg dry	2.00		95	80-120			
Thallium	1.95	0.10 mg/kg dry	2.00		98	80-120			
Thorium	1.96	0.50 mg/kg dry	2.00		98	80-120			
Tin	1.94	0.20 mg/kg dry	2.00		97	80-120			
Titanium	2.0	1.0 mg/kg dry	2.00		101	80-120			
Tungsten	1.98	0.20 mg/kg dry	2.00		99	80-120			
Uranium	1.99	0.050 mg/kg dry	2.00		100	80-120			
Vanadium	1.9	1.0 mg/kg dry	2.00		97	80-120			
Zinc	19.3	2.0 mg/kg dry	20.0		97	80-120			
Zirconium	2.0	2.0 mg/kg dry	2.00		101	80-120			

**Duplicate (B3H3168-DUP1)**

Source: 23H3395-03

Prepared: 2023-08-30, Analyzed: 2023-08-30

Aluminum	9160	40 mg/kg dry		8750			5	40	
Antimony	0.30	0.10 mg/kg dry		0.25				30	
Arsenic	14.6	0.30 mg/kg dry		14.5			< 1	30	
Barium	86.2	1.0 mg/kg dry		86.6			< 1	40	
Beryllium	0.43	0.10 mg/kg dry		0.43				30	
Bismuth	0.17	0.10 mg/kg dry		0.17				30	
Boron	2.8	2.0 mg/kg dry		2.7				30	
Cadmium	0.311	0.040 mg/kg dry		0.300			4	30	
Calcium	6640	100 mg/kg dry		6530			2	30	
Chromium	20.6	1.0 mg/kg dry		19.2			7	30	
Cobalt	7.61	0.10 mg/kg dry		8.92			16	30	
Copper	46.2	0.40 mg/kg dry		42.3			9	30	
Iron	18400	20.0 mg/kg dry		17400			5	30	
Lead	13.7	0.20 mg/kg dry		11.7			16	40	
Lithium	9.40	0.10 mg/kg dry		9.51			1	30	



## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Geoengineering Free Canada  
Metals Testing

**WORK ORDER REPORTED** 23H3395  
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>Strong Acid Leachable Metals, Batch B3H3168, Continued</b>									
<b>Duplicate (B3H3168-DUP1), Continued</b>		<b>Source: 23H3395-03</b>		<b>Prepared: 2023-08-30, Analyzed: 2023-08-30</b>					
Magnesium	4010	10 mg/kg dry		3710			8	30	
Manganese	319	0.40 mg/kg dry		304			5	30	
Mercury	< 0.040	0.040 mg/kg dry		< 0.040				40	
Molybdenum	1.02	0.10 mg/kg dry		0.95			7	40	
Nickel	12.9	0.60 mg/kg dry		12.1			6	30	
Phosphorus	1230	10 mg/kg dry		1190			4	30	
Potassium	1300	40 mg/kg dry		1250			4	40	
Selenium	0.32	0.20 mg/kg dry		0.37				30	
Silver	0.15	0.10 mg/kg dry		0.14				40	
Sodium	239	50 mg/kg dry		216				40	
Strontium	48.1	0.20 mg/kg dry		48.0			< 1	40	
Sulfur	< 1000	1000 mg/kg dry		< 1000				30	
Tellurium	< 0.10	0.10 mg/kg dry		< 0.10				30	
Thallium	< 0.10	0.10 mg/kg dry		< 0.10				30	
Thorium	5.54	0.50 mg/kg dry		5.95			7	30	
Tin	3.05	0.20 mg/kg dry		0.74			122	40	RPD1
Titanium	590	1.0 mg/kg dry		585			< 1	40	
Tungsten	0.26	0.20 mg/kg dry		0.21				40	
Uranium	4.30	0.050 mg/kg dry		4.17			3	30	
Vanadium	40.5	1.0 mg/kg dry		37.6			7	30	
Zinc	60.9	2.0 mg/kg dry		57.2			6	30	
Zirconium	< 2.0	2.0 mg/kg dry		< 2.0				40	

<b>Reference (B3H3168-SRM1)</b>		<b>Prepared: 2023-08-30, Analyzed: 2023-08-30</b>							
Aluminum	11700	40 mg/kg dry		12100		97		70-130	
Antimony	0.68	0.10 mg/kg dry		0.634		107		70-130	
Arsenic	87.4	0.30 mg/kg dry		83.6		105		70-130	
Barium	39.7	1.0 mg/kg dry		41.4		96		70-130	
Beryllium	0.35	0.10 mg/kg dry		0.377		93		70-130	
Bismuth	0.30	0.10 mg/kg dry		0.291		104		70-130	
Calcium	5480	100 mg/kg dry		5380		102		70-130	
Chromium	68.3	1.0 mg/kg dry		66.0		103		70-130	
Cobalt	11.0	0.10 mg/kg dry		10.8		102		70-130	
Copper	21.0	0.40 mg/kg dry		20.3		103		70-130	
Iron	21300	20.0 mg/kg dry		20400		104		70-130	
Lead	17.5	0.20 mg/kg dry		16.7		105		70-130	
Lithium	15.4	0.10 mg/kg dry		16.8		91		70-130	
Magnesium	6300	10 mg/kg dry		6170		102		70-130	
Manganese	328	0.40 mg/kg dry		319		103		70-130	
Mercury	0.127	0.040 mg/kg dry		0.114		112		70-130	
Molybdenum	0.65	0.10 mg/kg dry		0.607		106		70-130	
Nickel	32.9	0.60 mg/kg dry		32.5		101		70-130	
Phosphorus	439	10 mg/kg dry		432		102		70-130	
Silver	1.62	0.10 mg/kg dry		1.55		105		70-130	
Strontium	22.3	0.20 mg/kg dry		22.5		99		70-130	
Thallium	< 0.10	0.10 mg/kg dry		0.0765		106		70-130	
Thorium	3.39	0.50 mg/kg dry		2.96		114		70-130	
Titanium	712	1.0 mg/kg dry		730		98		70-130	
Uranium	1.12	0.050 mg/kg dry		1.15		98		70-130	
Vanadium	36.9	1.0 mg/kg dry		36.3		102		70-130	
Zinc	40.5	2.0 mg/kg dry		39.7		102		70-130	

**Total Metals, Batch B3I0002**

<b>Blank (B3I0002-BLK1)</b>		<b>Prepared: 2023-09-01, Analyzed: 2023-09-01</b>							
Aluminum, total	< 0.0050	0.0050 mg/L							





## APPENDIX 2: QUALITY CONTROL RESULTS

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**WORK ORDER REPORTED** 23H3395  
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>Total Metals, Batch B3I0002, Continued</b>									
<b>Blank (B3I0002-BLK1), Continued</b>					Prepared: 2023-09-01, Analyzed: 2023-09-01				
Antimony, total	< 0.00020	0.00020 mg/L							
Arsenic, total	< 0.00050	0.00050 mg/L							
Barium, total	< 0.0050	0.0050 mg/L							
Beryllium, total	< 0.00010	0.00010 mg/L							
Bismuth, total	< 0.00010	0.00010 mg/L							
Boron, total	< 0.0500	0.0500 mg/L							
Cadmium, total	< 0.000010	0.000010 mg/L							
Calcium, total	< 0.20	0.20 mg/L							
Chromium, total	< 0.00050	0.00050 mg/L							
Cobalt, total	< 0.00010	0.00010 mg/L							
Copper, total	< 0.00040	0.00040 mg/L							
Iron, total	< 0.010	0.010 mg/L							
Lead, total	< 0.00020	0.00020 mg/L							
Lithium, total	< 0.00010	0.00010 mg/L							
Magnesium, total	< 0.010	0.010 mg/L							
Manganese, total	< 0.00020	0.00020 mg/L							
Molybdenum, total	< 0.00010	0.00010 mg/L							
Nickel, total	< 0.00040	0.00040 mg/L							
Phosphorus, total	< 0.050	0.050 mg/L							
Potassium, total	< 0.10	0.10 mg/L							
Selenium, total	< 0.00050	0.00050 mg/L							
Silicon, total	< 1.0	1.0 mg/L							
Silver, total	< 0.000050	0.000050 mg/L							
Sodium, total	< 0.10	0.10 mg/L							
Strontium, total	< 0.0010	0.0010 mg/L							
Sulfur, total	< 3.0	3.0 mg/L							
Tellurium, total	< 0.00050	0.00050 mg/L							
Thallium, total	< 0.000020	0.000020 mg/L							
Thorium, total	< 0.00010	0.00010 mg/L							
Tin, total	< 0.00020	0.00020 mg/L							
Titanium, total	< 0.0050	0.0050 mg/L							
Tungsten, total	< 0.0010	0.0010 mg/L							
Uranium, total	< 0.000020	0.000020 mg/L							
Vanadium, total	< 0.0050	0.0050 mg/L							
Zinc, total	< 0.0040	0.0040 mg/L							
Zirconium, total	< 0.00010	0.00010 mg/L							

<b>LCS (B3I0002-BS1)</b>					Prepared: 2023-09-01, Analyzed: 2023-09-01				
Aluminum, total	3.56	0.0050 mg/L	4.00		89	80-120			
Antimony, total	0.0388	0.00020 mg/L	0.0400		97	80-120			
Arsenic, total	0.395	0.00050 mg/L	0.400		99	80-120			
Barium, total	0.0384	0.0050 mg/L	0.0400		96	80-120			
Beryllium, total	0.0397	0.00010 mg/L	0.0400		99	80-120			
Bismuth, total	0.0391	0.00010 mg/L	0.0400		98	80-120			
Boron, total	0.396	0.0500 mg/L	0.400		99	80-120			
Cadmium, total	0.0380	0.000010 mg/L	0.0400		95	80-120			
Calcium, total	3.97	0.20 mg/L	4.00		99	80-120			
Chromium, total	0.0402	0.00050 mg/L	0.0400		101	80-120			
Cobalt, total	0.0399	0.00010 mg/L	0.0400		100	80-120			
Copper, total	0.0395	0.00040 mg/L	0.0400		99	80-120			
Iron, total	3.97	0.010 mg/L	4.00		99	80-120			
Lead, total	0.0387	0.00020 mg/L	0.0400		97	80-120			
Lithium, total	0.0406	0.00010 mg/L	0.0400		102	80-120			
Magnesium, total	3.82	0.010 mg/L	4.00		95	80-120			
Manganese, total	0.0402	0.00020 mg/L	0.0400		101	80-120			
Molybdenum, total	0.0375	0.00010 mg/L	0.0400		94	80-120			



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**WORK ORDER REPORTED** 23H3395  
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>Total Metals, Batch B3I0002, Continued</b>									
<b>LCS (B3I0002-BS1), Continued</b>					Prepared: 2023-09-01, Analyzed: 2023-09-01				
Nickel, total	0.0395	0.00040 mg/L	0.0400		99	80-120			
Phosphorus, total	3.81	0.050 mg/L	4.00		95	80-120			
Potassium, total	4.12	0.10 mg/L	4.00		103	80-120			
Selenium, total	0.397	0.00050 mg/L	0.400		99	80-120			
Silicon, total	3.8	1.0 mg/L	4.00		94	80-120			
Silver, total	0.0331	0.000050 mg/L	0.0400		83	80-120			
Sodium, total	3.82	0.10 mg/L	4.00		96	80-120			
Strontium, total	0.0404	0.0010 mg/L	0.0400		101	80-120			
Sulfur, total	39.2	3.0 mg/L	40.0		98	80-120			
Tellurium, total	0.0371	0.00050 mg/L	0.0400		93	80-120			
Thallium, total	0.0391	0.000020 mg/L	0.0400		98	80-120			
Thorium, total	0.0413	0.00010 mg/L	0.0400		103	80-120			
Tin, total	0.0394	0.00020 mg/L	0.0400		98	80-120			
Titanium, total	0.0414	0.0050 mg/L	0.0400		104	80-120			
Tungsten, total	0.0403	0.0010 mg/L	0.0400		101	80-120			
Uranium, total	0.0402	0.000020 mg/L	0.0400		101	80-120			
Vanadium, total	0.0397	0.0050 mg/L	0.0400		99	80-120			
Zinc, total	0.398	0.0040 mg/L	0.400		99	80-120			
Zirconium, total	0.0400	0.00010 mg/L	0.0400		100	80-120			

**QC Qualifiers:**

RPD1 Relative percent difference(s) (RPD) of one or more analytes on duplicate analysis are outside of control limits due to sample heterogeneity.