



# McC Campbell Analytical, Inc.

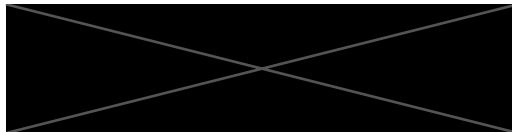
"When Quality Counts"

## Analytical Report

**WorkOrder:** 2303E27 **Amended:** 03/28/2023

**Revision:** 1

**Report Created for:**



**Project Contact:**

**Project P.O.:**

**Project:**



HAIL

**Project Received:** 03/21/2023

Analytical Report reviewed & approved for release on 03/28/2023 by:

Angela Rydelius

Laboratory Manager

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## Revision History

Client:



Project:

**WorkOrder:** 2303E27

Date	Revision	Reason
03/28/2023	1	Added lithium to the report.



## Glossary of Terms & Qualifier Definitions

Client: 

WorkOrder: 2303E27

Project:

### Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit <sup>1</sup>
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting limit <sup>2</sup>
RPD	Relative Percent Difference
RRT	Relative Retention Time
RSD	Relative Standard Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure

<sup>1</sup> MDL is the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results. Definition and Procedure for the Determination of the Method Detection Limit, Revision 2, 40CFR, Part 136, Appendix B, EPA 821-R-16-006, December 2016.

<sup>2</sup> RL is the lowest level that can be reliably determined within specified limits of precision and accuracy during routine laboratory operating conditions. (The RL cannot be lower than the lowest calibration standard used in the initial calibration of the instrument and must be greater than the MDL.)



## Glossar of Terms & Qualifier Definitions



**WorkOrder:** 2303E27

**Project:**

- TEQ Toxicity Equivalents
- TZA TimeZone Net Adjustment for sample collected outside of MAI's UTC.
- WET (STLC) Waste Extraction Test (Soluble Threshold Limit Concentration)

**Analytical Qualifiers**

- a7 Reporting limit raised due to limited sample amount.



## Analytical Report

**Client:** ██████████  
**Date Received:** 03/21/2023 10:17  
**Date Prepared:** 03/22/2023  
**Project:** HAIL

**WorkOrder:** 2303E27  
**Extraction Method:** E200.8  
**Analytical Method:** E200.8  
**Unit:** µg/L

### Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
HAIL	2303E27-001A	Water	03/11/2023 15:00	ICP-MS6 100SMPL.d	266064

Analytes	Result	RL	DF	Date Analyzed
Aluminum	240	53	1	03/23/2023 09:59
Antimony	0.59	0.53	1	03/23/2023 09:59
Arsenic	ND	0.53	1	03/23/2023 09:59
Barium	12	5.3	1	03/23/2023 09:59
Beryllium	ND	0.53	1	03/23/2023 09:59
Cadmium	ND	0.53	1	03/23/2023 09:59
Chromium	2.0	0.53	1	03/23/2023 09:59
Cobalt	ND	0.53	1	03/23/2023 09:59
Copper	17	1.6	1	03/23/2023 09:59
Lead	1.6	0.53	1	03/23/2023 09:59
Lithium	ND	2.1	1	03/23/2023 09:59
Mercury	ND	0.053	1	03/23/2023 09:59
Molybdenum	ND	0.53	1	03/23/2023 09:59
Nickel	1.2	0.53	1	03/23/2023 09:59
Selenium	ND	0.53	1	03/23/2023 09:59
Silver	ND	0.53	1	03/23/2023 09:59
Thallium	ND	0.53	1	03/23/2023 09:59
Thorium	ND	0.53	1	03/23/2023 09:59
Titanium	9.8	1.1	1	03/23/2023 09:59
Tungsten	ND	0.053	1	03/23/2023 09:59
Uranium	ND	0.53	1	03/23/2023 09:59
Vanadium	0.82	0.53	1	03/23/2023 09:59
Zinc	450	21	1	03/23/2023 09:59

Surrogates	REC (%)	Limits	
Terbium	107	70-130	03/23/2023 09:59

Analyst(s): WV

Analytical Comments: a7



## Quality Control Report

**Client:** ██████████  
**Date Prepared:** 03/22/2023  
**Date Analyzed:** 03/22/2023  
**Instrument:** ICP-MS6  
**Matrix:** Water  
**Project:** HAIL

**WorkOrder:** 2303E27  
**BatchID:** 266064  
**Extraction Method:** E200.8  
**Analytical Method:** E200.8  
**Unit:** µg/L  
**Sample ID:** MB/LCS/LCSD-266064

### QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Aluminum	ND	11	50	-	-	-
Antimony	ND	0.13	0.50	-	-	-
Arsenic	ND	0.074	0.50	-	-	-
Barium	ND	0.53	5.0	-	-	-
Beryllium	ND	0.067	0.50	-	-	-
Cadmium	ND	0.043	0.50	-	-	-
Chromium	ND	0.28	0.50	-	-	-
Cobalt	ND	0.043	0.50	-	-	-
Copper	ND	0.75	1.5	-	-	-
Lead	ND	0.19	0.50	-	-	-
Lithium	ND	0.88	2.0	-	-	-
Mercury	ND	0.033	0.050	-	-	-
Molybdenum	ND	0.13	0.50	-	-	-
Nickel	ND	0.33	0.50	-	-	-
Selenium	ND	0.16	0.50	-	-	-
Silver	ND	0.092	0.50	-	-	-
Thallium	ND	0.043	0.50	-	-	-
Thorium	ND	0.20	0.50	-	-	-
Titanium	ND	0.49	1.0	-	-	-
Tungsten	ND	0.034	0.050	-	-	-
Uranium	ND	0.044	0.50	-	-	-
Vanadium	ND	0.092	0.50	-	-	-
Zinc	ND	14	20	-	-	-
<b>Surrogate Recovery</b>						
Terbium	520			500	103	70-130

(Cont.)



## Quality Control Report

**Client:** ██████████  
**Date Prepared:** 03/22/2023  
**Date Analyzed:** 03/22/2023  
**Instrument:** ICP-MS6  
**Matrix:** Water  
**Project:** HAIL

**WorkOrder:** 2303E27  
**BatchID:** 266064  
**Extraction Method:** E200.8  
**Analytical Method:** E200.8  
**Unit:** µg/L  
**Sample ID:** MB/LCS/LCSD-266064

### QC Summary Report for Metals

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aluminum	530	540	500	105	107	85-115	1.81	20
Antimony	48	49	50	96	98	85-115	1.53	20
Arsenic	50	51	50	101	102	85-115	1.28	20
Barium	510	520	500	102	104	85-115	1.26	20
Beryllium	53	54	50	106	108	85-115	2.11	20
Cadmium	51	52	50	102	104	85-115	2.22	20
Chromium	51	52	50	102	103	85-115	1.11	20
Cobalt	52	53	50	104	106	85-115	1.62	20
Copper	52	52	50	103	105	85-115	1.40	20
Lead	49	50	50	98	100	85-115	1.80	20
Lithium	54	55	50	108	110	85-115	2.38	20
Mercury	1.1	1.2	1.25	91	94	85-115	2.86	20
Molybdenum	48	49	50	96	99	85-115	2.91	20
Nickel	52	53	50	104	106	85-115	1.93	20
Selenium	53	54	50	105	108	85-115	2.60	20
Silver	50	51	50	100	102	85-115	1.78	20
Thallium	48	49	50	97	98	85-115	1.14	20
Thorium	51	52	50	102	103	85-115	0.949	20
Titanium	49	48	50	98	97	85-115	1.79	20
Tungsten	4.9	5.0	5	97	101	85-115	3.50	20
Uranium	51	53	50	101	105	85-115	3.63	20
Vanadium	50	51	50	101	102	85-115	1.10	20
Zinc	520	530	500	104	106	85-115	1.12	20
<b>Surrogate Recovery</b>								
Terbium	510	520	500	102	105	70-130	2.42	20



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Pittsburg, CA 94565-1701  
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# CHAIN-OF-CUSTODY RECORD

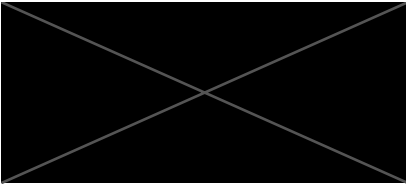
WorkOrder: 2303E27

ClientCode: KSSC

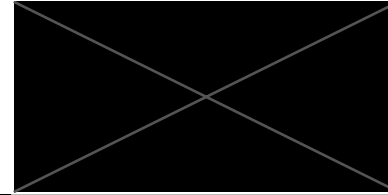
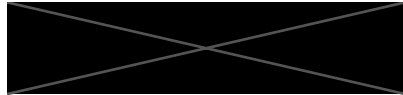
QuoteID: 232900

- WaterTrax   
  CLIP   
  EDF   
  EQulS   
  Dry-Weight   
  Email   
  HardCopy   
  ThirdParty   
  J-flag  
 Detection Summary   
  Excel

Report to:



Email: [Redacted]  
cc/3rd Part [Redacted]  
PO: [Redacted]  
Project: HAIL



Requested TAT: 5 days;

Date Received: 03/21/2023

Date Logged: 03/21/2023

Lab ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
2303E27-001	HAIL	Water	3/11/2023 15:00	<input type="checkbox"/>	A	A											

Test Legend:

1	METALSMS_TTLC_W	2	PRDisposal Fee	3		4	
5		6		7		8	
9		10		11		12	

Project Manager: Susan Thompson

Prepared by: Natalie Zaragoza

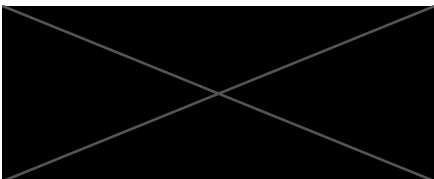
Comments:

NOTE: Soil samples are discarded 60 days after receipt unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



### WORK ORDER SUMMARY

Client Name:  
Client Contact  
Contact's Ema



Project: HAIL

Work Order: 2303E27  
QC Level: LEVEL 2  
Date Logged: 3/21/2023

Comments:

WaterTrax     CLIP     EDF     Excel     EQUIS     Email     HardCopy     ThirdParty     J-flag

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
001A	HAIL	Water	E200.8 (Metals) <Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Thorium, Titanium, Tungsten, Uranium, Vanadium, Zinc>	1	1L HDPE round container unpresv.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3/11/2023 15:00	5 days	3/28/2023	Present	<input type="checkbox"/>	<input type="checkbox"/>

**NOTES:** \* STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.
- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

U\*\* = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.





## Sample Receipt Checklist

Client Name:   
 Project: 

Date and Time Received: 3/21/2023 10:17

Date Logged: 3/21/2023

Received by:   


WorkOrder No: 2303E27 Matrix: Water  
 Carrier: UPS

### Chain of Custody (COC) Information

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No
- COC agrees with Quote? Yes  No  NA

### Sample Receipt Information

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Custody seals intact on sample bottles? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

### Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes  No  NA
- Samples Received on Ice? Yes  No

Sample/Temp Blank temperature Temp: 22.2°C NA

ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)? Yes  No  NA

Sample labels checked for correct preservation? Yes  No

pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)? Yes  No  NA

#### UCMR Samples:

pH tested and acceptable upon receipt (200.7: ≤2; 533: 6 - 8; 537.1: 6 - 8)? Yes  No  NA

Free Chlorine tested and acceptable upon receipt (<0.1mg/L) [not applicable to 200.7]? Yes  No  NA

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 Comments: pH adjusted in Lab.