ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

March 22, 2017

Report to:
Jim Clay
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

cc: Janet Schramke

Bill to:
Mary Anne Valentine
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

Project ID: 4500546123
ACZ Project ID: L35015

Jim Clay:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on January 13, 2017. This project has been assigned to ACZ's project number, L35015. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L35015. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after March 22, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

CAMECO Resources

March 22, 2017

Project ID: 4500546123
ACZ Project ID: L35015

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 10 soil samples from CAMECO Resources on January 13, 2017. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L35015. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. This project is a client requested special sequential leaching operation of the associated samples. The data here just represents that process. The actual generated leachates are under ACZ projects L35949 to L35958.

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 463-464

ACZ Sample ID: ***L35015-01***
Date Sampled: *09/01/16 00:00*
Date Received: *01/13/17*
Sample Matrix: *Soil*

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Serial Batch Extraction - 6 Step	M600/9-80-010								02/09/17 8:00	brd/cra

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 472-473

ACZ Sample ID: ***L35015-02***
Date Sampled: *09/01/16 00:00*
Date Received: *01/13/17*
Sample Matrix: *Soil*

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Serial Batch Extraction - 6 Step	M600/9-80-010								02/09/17 8:00	brd/cra

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 463-464

ACZ Sample ID: ***L35015-03***
Date Sampled: *08/24/16 00:00*
Date Received: *01/13/17*
Sample Matrix: *Soil*

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Serial Batch Extraction - 6 Step	M600/9-80-010								02/09/17 8:00	brd/cra

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 474-475

ACZ Sample ID: ***L35015-04***
Date Sampled: *08/24/16 00:00*
Date Received: *01/13/17*
Sample Matrix: *Soil*

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Serial Batch Extraction - 6 Step	M600/9-80-010								02/09/17 8:00	brd/cra

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 479-480

ACZ Sample ID: ***L35015-05***
Date Sampled: *08/29/16 00:00*
Date Received: *01/13/17*
Sample Matrix: *Soil*

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Serial Batch Extraction - 6 Step	M600/9-80-010								02/09/17 8:00	brd/cra

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 488-489

ACZ Sample ID: ***L35015-06***
Date Sampled: *08/30/16 00:00*
Date Received: *01/13/17*
Sample Matrix: *Soil*

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Serial Batch Extraction - 6 Step	M600/9-80-010								02/09/17 8:00	brd/cra

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 494-495

ACZ Sample ID: ***L35015-07***
Date Sampled: *08/23/16 00:00*
Date Received: *01/13/17*
Sample Matrix: *Soil*

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Serial Batch Extraction - 6 Step	M600/9-80-010								02/09/17 8:00	brd/cra

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 499-500

ACZ Sample ID: ***L35015-08***
Date Sampled: *08/23/16 00:00*
Date Received: *01/13/17*
Sample Matrix: *Soil*

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Serial Batch Extraction - 6 Step	M600/9-80-010								02/09/17 8:00	brd/cra

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-2 487.5-488.5

ACZ Sample ID: ***L35015-09***
Date Sampled: *09/12/16 00:00*
Date Received: *01/13/17*
Sample Matrix: *Soil*

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Serial Batch Extraction - 6 Step	M600/9-80-010								02/09/17 8:00	brd/cra

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-4 516-517

ACZ Sample ID: ***L35015-10***
Date Sampled: *10/18/16 00:00*
Date Received: *01/13/17*
Sample Matrix: *Soil*

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Serial Batch Extraction - 6 Step	M600/9-80-010								02/09/17 8:00	brd/cra

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

ACZ Laboratories, Inc.
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Inorganic Extended Qualifier Report

CAMECO Resources

ACZ Project ID: ***L35015***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION

No extended qualifiers associated with this analysis

ACZ Laboratories, Inc.
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Certification Qualifiers

CAMECO Resources

ACZ Project ID: ***L35015***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35015
Date Received: 01/13/2017 10:19
Received By:
Date Printed: 1/13/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
UNKNOWN		NA		

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35015
Date Received: 01/13/2017 10:19
Received By:
Date Printed: 1/13/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Revised Analytical Report

April 27, 2017

Report to:
Jim Clay
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

Bill to:
Mary Anne Valentine
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

cc: Janet Schramke

Project ID: 4500546123
ACZ Project ID: L35949

Jim Clay:

Enclosed are revised analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 13, 2017 and originally reported on April 21, 2017. Refer to the case narrative for an explanation of the changes. This project was assigned to ACZ's project number, L35949. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L35949. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 21, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

CAMECO Resources

April 27, 2017

Project ID: 4500546123
ACZ Project ID: L35949

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 miscellaneous samples from CAMECO Resources on March 13, 2017. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L35949. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. This project is a client requested sequential leaching process. The reagents and protocols utilized come from the 'Trace metal occurrence in a mineralised and a non-mineralised spodosol in Northern Sweden', Land and others. Published in the Journal of Geochemical Exploration 75 (2002) 71-91.

2. This project has been revised to include some sample duplicate data that was missing from the Quality Control data summary.

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 463-464 STEP 1

ACZ Sample ID: ***L35949-01***
Date Sampled: *09/01/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.038		*	mg/L	0.0002	0.001	03/13/17 22:35	enb
Barium, dissolved	M200.7 ICP	10	0.10	B	*	mg/L	0.03	0.2	03/15/17 19:28	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	03/13/17 22:35	enb
Calcium, dissolved	M200.7 ICP	10	70		*	mg/L	1	5	03/15/17 19:28	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0013	B	*	mg/L	0.0005	0.002	03/13/17 22:35	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 19:28	aeb
Iron, dissolved	M200.7 ICP	10	0.7		*	mg/L	0.2	0.5	03/15/17 19:28	aeb
Magnesium, dissolved	M200.7 ICP	10	15		*	mg/L	2	10	03/15/17 19:28	aeb
Manganese, dissolved	M200.7 ICP	10	0.06	B	*	mg/L	0.05	0.3	03/15/17 19:28	aeb
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 19:28	aeb
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 19:28	aeb
Potassium, dissolved	M200.7 ICP	10	10		*	mg/L	2	10	03/15/17 19:28	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0064		*	mg/L	0.0001	0.0003	03/13/17 22:35	enb
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 19:28	aeb
Sodium, dissolved	M200.7 ICP	20	15100		*	mg/L	4	20	03/16/17 13:22	aeb
Strontium, dissolved	M200.7 ICP	10	0.72		*	mg/L	0.05	0.3	03/15/17 19:28	aeb
Uranium, dissolved	M200.8 ICP-MS	100	11.5		*	mg/L	0.01	0.05	03/16/17 20:47	enb
Vanadium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 19:28	aeb
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 19:28	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 463-464 STEP 2

ACZ Sample ID: ***L35949-02***
Date Sampled: *09/01/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.117		*	mg/L	0.0002	0.001	03/13/17 22:45	enb
Barium, dissolved	M200.7 ICP	10	0.03	B	*	mg/L	0.03	0.2	03/15/17 19:31	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0008		*	mg/L	0.0001	0.0005	03/13/17 22:45	enb
Calcium, dissolved	M200.7 ICP	10		U	*	mg/L	1	5	03/15/17 19:31	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0054		*	mg/L	0.0005	0.002	03/13/17 22:45	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 19:31	aeb
Iron, dissolved	M200.7 ICP	10	2.4		*	mg/L	0.2	0.5	03/15/17 19:31	aeb
Magnesium, dissolved	M200.7 ICP	10		U	*	mg/L	2	10	03/15/17 19:31	aeb
Manganese, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 19:31	aeb
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 19:31	aeb
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 19:31	aeb
Potassium, dissolved	M200.7 ICP	10	2	B	*	mg/L	2	10	03/15/17 19:31	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0022		*	mg/L	0.0001	0.0003	03/13/17 22:45	enb
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 19:31	aeb
Sodium, dissolved	M200.7 ICP	10	7720		*	mg/L	2	10	03/15/17 19:31	aeb
Strontium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 19:31	aeb
Uranium, dissolved	M200.8 ICP-MS	100	18.2		*	mg/L	0.01	0.05	03/16/17 20:51	enb
Vanadium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 19:31	aeb
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 19:31	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 463-464 STEP 3

ACZ Sample ID: ***L35949-03***
Date Sampled: *09/01/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.576		*	mg/L	0.0002	0.001	03/13/17 22:48	enb
Barium, dissolved	M200.7 ICP	1	0.074		*	mg/L	0.003	0.02	03/15/17 19:35	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.002		*	mg/L	0.0001	0.0005	03/13/17 22:48	enb
Calcium, dissolved	M200.7 ICP	1	8.8		*	mg/L	0.1	0.5	03/15/17 19:35	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0586		*	mg/L	0.0005	0.002	03/13/17 22:48	enb
Copper, dissolved	M200.7 ICP	2		U	*	mg/L	0.02	0.1	03/16/17 13:32	aeb
Iron, dissolved	M200.7 ICP	1	94.4		*	mg/L	0.02	0.05	03/15/17 19:35	aeb
Magnesium, dissolved	M200.7 ICP	1	21.1		*	mg/L	0.2	1	03/15/17 19:35	aeb
Manganese, dissolved	M200.7 ICP	1	0.354		*	mg/L	0.005	0.03	03/15/17 19:35	aeb
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	03/15/17 19:35	aeb
Nickel, dissolved	M200.7 ICP	1	0.107		*	mg/L	0.008	0.04	03/15/17 19:35	aeb
Potassium, dissolved	M200.7 ICP	1	1.9		*	mg/L	0.2	1	03/15/17 19:35	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0011		*	mg/L	0.0001	0.0003	03/13/17 22:48	enb
Silver, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.03	03/15/17 19:35	aeb
Sodium, dissolved	M200.7 ICP	1	135		*	mg/L	0.2	1	03/15/17 19:35	aeb
Strontium, dissolved	M200.7 ICP	1	0.029	B	*	mg/L	0.005	0.03	03/15/17 19:35	aeb
Uranium, dissolved	M200.8 ICP-MS	200	46.9		*	mg/L	0.02	0.1	03/16/17 20:54	enb
Vanadium, dissolved	M200.7 ICP	1	0.087		*	mg/L	0.005	0.03	03/15/17 19:35	aeb
Zinc, dissolved	M200.7 ICP	1	0.17		*	mg/L	0.01	0.05	03/15/17 19:35	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 463-464 STEP 4

ACZ Sample ID: ***L35949-04***
Date Sampled: *09/01/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	5	0.126		*	mg/L	0.001	0.005	03/13/17 22:51	enb
Barium, dissolved	M200.7 ICP	10	0.04	B	*	mg/L	0.03	0.2	03/15/17 19:44	aeb
Cadmium, dissolved	M200.8 ICP-MS	5	0.0015	B	*	mg/L	0.0005	0.003	03/13/17 22:51	enb
Calcium, dissolved	M200.7 ICP	10	2	B	*	mg/L	1	5	03/15/17 19:44	aeb
Chromium, dissolved	M200.8 ICP-MS	5	0.067		*	mg/L	0.003	0.01	03/13/17 22:51	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 19:44	aeb
Iron, dissolved	M200.7 ICP	10	20.2		*	mg/L	0.2	0.5	03/15/17 19:44	aeb
Magnesium, dissolved	M200.7 ICP	10	10		*	mg/L	2	10	03/15/17 19:44	aeb
Manganese, dissolved	M200.7 ICP	10	0.13	B	*	mg/L	0.05	0.3	03/15/17 19:44	aeb
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 19:44	aeb
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 19:44	aeb
Potassium, dissolved	M200.7 ICP	10	2	B	*	mg/L	2	10	03/15/17 19:44	aeb
Selenium, dissolved	M200.8 ICP-MS	5	0.0047		*	mg/L	0.0005	0.001	03/13/17 22:51	enb
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 19:44	aeb
Sodium, dissolved	M200.7 ICP	10		U	*	mg/L	2	10	03/15/17 19:44	aeb
Strontium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 19:44	aeb
Uranium, dissolved	M200.8 ICP-MS	100	14.3		*	mg/L	0.01	0.05	03/16/17 20:57	enb
Vanadium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 19:44	aeb
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 19:44	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 463-464 STEP 5

ACZ Sample ID: ***L35949-05***
Date Sampled: *09/01/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	17.6		*	mg/L	0.002	0.01	03/13/17 22:54	enb
Barium, dissolved	M200.7 ICP	5	0.06	B	*	mg/L	0.02	0.08	03/15/17 19:48	aeb
Cadmium, dissolved	M200.8 ICP-MS	10	0.003	B	*	mg/L	0.001	0.005	03/13/17 22:54	enb
Calcium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	03/15/17 19:48	aeb
Chromium, dissolved	M200.8 ICP-MS	10	0.025		*	mg/L	0.005	0.02	03/13/17 22:54	enb
Copper, dissolved	M200.7 ICP	5	0.06	B	*	mg/L	0.05	0.3	03/15/17 19:48	aeb
Iron, dissolved	M200.7 ICP	5	473		*	mg/L	0.1	0.3	03/15/17 19:48	aeb
Magnesium, dissolved	M200.7 ICP	5	4	B	*	mg/L	1	5	03/15/17 19:48	aeb
Manganese, dissolved	M200.7 ICP	5	0.04	B	*	mg/L	0.03	0.1	03/15/17 19:48	aeb
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 19:48	aeb
Nickel, dissolved	M200.7 ICP	5	0.11	B	*	mg/L	0.04	0.2	03/15/17 19:48	aeb
Potassium, dissolved	M200.7 ICP	5	4520		*	mg/L	1	5	03/15/17 19:48	aeb
Selenium, dissolved	M200.8 ICP-MS	10	0.033		*	mg/L	0.001	0.003	03/13/17 22:54	enb
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/15/17 19:48	aeb
Sodium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/15/17 19:48	aeb
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 19:48	aeb
Uranium, dissolved	M200.8 ICP-MS	10	5.96		*	mg/L	0.001	0.005	03/13/17 22:54	enb
Vanadium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 19:48	aeb
Zinc, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 19:48	aeb

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35949***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05098	mg/L	102	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0006	0.0006			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.0501		.05102	mg/L	102	85	115			
L35949-01AS	AS	03/13/17 22:38	MS170220-2	.0501	.038	.1017	mg/L	127	70	130			
L35949-01ASD	ASD	03/13/17 22:42	MS170220-2	.0501	.038	.09531	mg/L	114	70	130	6	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9518	mg/L	98	95	105			
WG419466ICB	ICB	03/15/17 19:12				.003	mg/L		-0.009	0.009			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5005		.5082	mg/L	102	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.5005	.074	.5495	mg/L	95	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.5005	.074	.5528	mg/L	96	85	115	1	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05072	mg/L	101	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0003	0.0003			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05005		.04959	mg/L	99	85	115			
L35949-01AS	AS	03/13/17 22:38	MS170220-2	.05005	.0004	.04406	mg/L	87	70	130			
L35949-01ASD	ASD	03/13/17 22:42	MS170220-2	.05005	.0004	.0385	mg/L	76	70	130	13	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	100		96.65	mg/L	97	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.3	0.3			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	67.99026		68.31	mg/L	100	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	67.99026	8.8	73.89	mg/L	96	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	67.99026	8.8	74.35	mg/L	96	85	115	1	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05078	mg/L	102	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0015	0.0015			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05		.05024	mg/L	100	85	115			
L35949-01AS	AS	03/13/17 22:38	MS170220-2	.05	.0013	.02447	mg/L	46	70	130			M2
L35949-01ASD	ASD	03/13/17 22:42	MS170220-2	.05	.0013	.02834	mg/L	54	70	130	15	20	M2

CAMECO Resources

ACZ Project ID: ***L35949***

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.966	mg/L	98	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.03	0.03			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5005		.499	mg/L	100	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.5005		.409	mg/L	82	85	115			M2
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.5005		.416	mg/L	83	85	115	2	20	M2
WG419501													
WG419501ICV	ICV	03/16/17 13:00	II170222-1	2		1.978	mg/L	99	95	105			
WG419501ICB	ICB	03/16/17 13:06				U	mg/L		-0.03	0.03			
WG419501LFB	LFB	03/16/17 13:19	II170220-2	.5005		.481	mg/L	96	85	115			
L35949-01AS	AS	03/16/17 13:26	II170220-2	10.01	U	9.42	mg/L	94	85	115			
L35949-01ASD	ASD	03/16/17 13:29	II170220-2	10.01	U	9.45	mg/L	94	85	115	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.946	mg/L	97	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.06	0.06			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	1.0017		1.029	mg/L	103	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	1.0017	94.4	90.13	mg/L	-426	85	115			M3
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	1.0017	94.4	91.5	mg/L	-290	85	115	2	20	M3

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	100		97.82	mg/L	98	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.6	0.6			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	50.00074		46.21	mg/L	92	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	50.00074	21.1	64.73	mg/L	87	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	50.00074	21.1	65.23	mg/L	88	85	115	1	20	

Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9145	mg/L	96	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.015	0.015			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5		.5137	mg/L	103	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.5	.354	.8173	mg/L	93	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.5	.354	.8278	mg/L	95	85	115	1	20	

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		2.005	mg/L	100	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.06	0.06			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.4995		.516	mg/L	103	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.4995	U	.467	mg/L	93	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.4995	U	.471	mg/L	94	85	115	1	20	

CAMECO Resources

ACZ Project ID: ***L35949***

Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2.002		1.9735	mg/L	99	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.024	0.024			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.498		.4995	mg/L	100	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.498	.107	.5767	mg/L	94	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.498	.107	.579	mg/L	95	85	115	0	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	20		19.41	mg/L	97	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.6	0.6			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	99.96532		97.98	mg/L	98	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	99.96532	1.9	95.09	mg/L	93	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	99.96532	1.9	95.36	mg/L	93	85	115	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05115	mg/L	102	90	110			
WG419339ICB	ICB	03/13/17 22:29				.00015	mg/L		-0.0003	0.0003			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05005		.0488	mg/L	98	85	115			
L35949-01AS	AS	03/13/17 22:38	MS170220-2	.05005	.0064	.1005	mg/L	188	70	130			M1
L35949-01ASD	ASD	03/13/17 22:42	MS170220-2	.05005	.0064	.09052	mg/L	168	70	130	10	20	M1

Silver, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	1.002		1.01	mg/L	101	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.03	0.03			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.501		.511	mg/L	102	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.501	.01	.455	mg/L	89	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.501	.01	.441	mg/L	86	85	115	3	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	100		98.62	mg/L	99	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.6	0.6			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	100.0322		99.5	mg/L	99	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	100.0322	135	222.7	mg/L	88	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	100.0322	135	224.4	mg/L	89	85	115	1	20	
WG419501													
WG419501ICV	ICV	03/16/17 13:00	II170222-1	100		101.1	mg/L	101	95	105			
WG419501ICB	ICB	03/16/17 13:06				U	mg/L		-0.6	0.6			
WG419501LFB	LFB	03/16/17 13:19	II170220-2	100.0322		97.81	mg/L	98	85	115			
L35949-01AS	AS	03/16/17 13:26	II170220-2	2000.644	15100	17088	mg/L	99	85	115			
L35949-01ASD	ASD	03/16/17 13:29	II170220-2	2000.644	15100	17362	mg/L	113	85	115	2	20	

CAMECO Resources

ACZ Project ID: ***L35949***

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9852	mg/L	99	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.015	0.015			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5015		.5092	mg/L	102	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.5015	.029	.5075	mg/L	95	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.5015	.029	.5087	mg/L	96	85	115	0	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.04873	mg/L	97	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0003	0.0003			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05		.04885	mg/L	98	85	115			
L35949-01AS	AS	03/13/17 22:38	MS170220-2	.05	10.2	10.33	mg/L	260	70	130			M3
L35949-01ASD	ASD	03/13/17 22:42	MS170220-2	.05	10.2	10.2	mg/L	0	70	130	1	20	M3
WG419539													
WG419539ICV	ICV	03/16/17 20:24	MS170301-3	.05		.05466	mg/L	109	90	110			
WG419539ICB	ICB	03/16/17 20:28				U	mg/L		-0.0003	0.0003			
WG419539LFB	LFB	03/16/17 20:31	MS170220-2	.05		.04575	mg/L	92	85	115			
L35728-20AS	AS	03/16/17 20:41	MS170220-2	.05	U	.04958	mg/L	99	70	130			
L35728-20ASD	ASD	03/16/17 20:44	MS170220-2	.05	U	.0564	mg/L	113	70	130	13	20	

Vanadium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9947	mg/L	100	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.015	0.015			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.4985		.5119	mg/L	103	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.4985	.087	.5648	mg/L	96	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.4985	.087	.5686	mg/L	97	85	115	1	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.991	mg/L	100	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.03	0.03			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.4942		.525	mg/L	106	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.4942	.17	.667	mg/L	101	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.4942	.17	.667	mg/L	101	85	115	0	20	

CAMECO Resources ACZ Project ID: ***L35949***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35949-01	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Chromium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35949-02	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Chromium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35949-03	WG419339	Chromium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419501	Copper, dissolved	M200.7 ICP	DB	Sample required dilution due to low bias result.
	WG419466	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419339	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

CAMECO Resources ACZ Project ID: ***L35949***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35949-04	WG419339	Arsenic, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Chromium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Selenium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35949-05	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419466	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Chromium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

ACZ Laboratories, Inc.
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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 463-464 STEP 1
Locator:

ACZ Sample ID: ***L35949-01***
Date Sampled: *09/01/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:08		7100	23	1.3	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 463-464 STEP 2
Locator:

ACZ Sample ID: ***L35949-02***
Date Sampled: *09/01/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:10		1300	5.1	0.11	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 463-464 STEP 3
Locator:

ACZ Sample ID: ***L35949-03***
Date Sampled: *09/01/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:11		13000	37	0.7	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 463-464 STEP 4
Locator:

ACZ Sample ID: ***L35949-04***
Date Sampled: *09/01/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:12		1100	7.8	0.66	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 463-464 STEP 5
Locator:

ACZ Sample ID: ***L35949-05***
Date Sampled: *09/01/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:14		230	3.6	0.88	pCi/L	*	tjr

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35949***

Radium 226 M903.1 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
WG421292																
WG420541PBW	PBW	04/17/17						.16	0.1	0.25			0.5			
WG420541LCSW	LCSW	04/17/17	PCN52689	20				20	0.52	0.13	100	43	148			
L35728-18DUP	DUP-RER	04/17/17			0.71	0.13	0.24	.43	0.13	0.05				1.52	2	
L35728-19DUP	DUP-RER	04/17/17			0.8	0.12	0.07	.97	0.13	0.07				0.96	2	
L35728-20MS	MS	04/17/17	PCN52689	20	0.85	0.12	0.08	30	0.77	0.11	146	43	148			

ACZ Laboratories, Inc.
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RadChem Extended Qualifier Report

CAMECO Resources ACZ Project ID: ***L35949***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35949-01	WG421292	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
L35949-02	WG421292	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
L35949-03	WG421292	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
L35949-04	WG421292	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
L35949-05	WG421292	Radium 226	M903.1	DD	Sample required dilution due to matrix color or odor.

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

Radiochemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Radium 226	M903.1
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Radium 226	M903.1

ACZ Laboratories, Inc.
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Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35949
Date Received: 03/13/2017 09:19
Received By:
Date Printed: 3/13/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
UNKNOWN		NA		

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35949
Date Received: 03/13/2017 09:19
Received By:
Date Printed: 3/13/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Revised Analytical Report

April 27, 2017

Report to:
Jim Clay
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

Bill to:
Mary Anne Valentine
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

cc: Janet Schramke

Project ID: 4500546123
ACZ Project ID: L35950

Jim Clay:

Enclosed are revised analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 13, 2017 and originally reported on April 21, 2017. Refer to the case narrative for an explanation of the changes. This project was assigned to ACZ's project number, L35950. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L35950. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 21, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

CAMECO Resources

April 27, 2017

Project ID: 4500546123
ACZ Project ID: L35950

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 miscellaneous samples from CAMECO Resources on March 13, 2017. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L35950. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports.The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. This project is a client requested sequential leaching process. The reagents and protocols utilized come from the 'Trace metal occurrence in a mineralised and a non-mineralised spodosol in Northern Sweden', Land and others. Published in the Journal of Geochemical Exploration 75 (2002) 71-91.

2. This project has been revised to include some sample duplicate data that was missing from the Quality Control data summary.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 472-473 STEP 1

ACZ Sample ID: ***L35950-01***
Date Sampled: *09/01/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	5	0.009		*	mg/L	0.001	0.005	03/13/17 22:58	enb
Barium, dissolved	M200.7 ICP	10	0.08	B	*	mg/L	0.03	0.2	03/15/17 19:51	aeb
Cadmium, dissolved	M200.8 ICP-MS	5	0.0015	B	*	mg/L	0.0005	0.003	03/13/17 22:58	enb
Calcium, dissolved	M200.7 ICP	10	48		*	mg/L	1	5	03/15/17 19:51	aeb
Chromium, dissolved	M200.8 ICP-MS	5		U	*	mg/L	0.003	0.01	03/13/17 22:58	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 19:51	aeb
Iron, dissolved	M200.7 ICP	10	0.6		*	mg/L	0.2	0.5	03/15/17 19:51	aeb
Magnesium, dissolved	M200.7 ICP	10	10		*	mg/L	2	10	03/15/17 19:51	aeb
Manganese, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 19:51	aeb
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 19:51	aeb
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 19:51	aeb
Potassium, dissolved	M200.7 ICP	10	16		*	mg/L	2	10	03/15/17 19:51	aeb
Selenium, dissolved	M200.8 ICP-MS	5	0.135		*	mg/L	0.0005	0.001	03/13/17 22:58	enb
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 19:51	aeb
Sodium, dissolved	M200.7 ICP	20	15400		*	mg/L	4	20	03/16/17 13:35	aeb
Strontium, dissolved	M200.7 ICP	10	0.49		*	mg/L	0.05	0.3	03/15/17 19:51	aeb
Uranium, dissolved	M200.8 ICP-MS	5	1.22		*	mg/L	0.0005	0.003	03/13/17 22:58	enb
Vanadium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 19:51	aeb
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 19:51	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 472-473 STEP 2

ACZ Sample ID: ***L35950-02***
Date Sampled: *09/01/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.026		*	mg/L	0.002	0.01	03/13/17 23:07	enb
Barium, dissolved	M200.7 ICP	10		U	*	mg/L	0.03	0.2	03/15/17 19:54	aeb
Cadmium, dissolved	M200.8 ICP-MS	10	0.003	B	*	mg/L	0.001	0.005	03/13/17 23:07	enb
Calcium, dissolved	M200.7 ICP	10		U	*	mg/L	1	5	03/15/17 19:54	aeb
Chromium, dissolved	M200.8 ICP-MS	10	0.008	B	*	mg/L	0.005	0.02	03/13/17 23:07	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 19:54	aeb
Iron, dissolved	M200.7 ICP	10	3.5		*	mg/L	0.2	0.5	03/15/17 19:54	aeb
Magnesium, dissolved	M200.7 ICP	10		U	*	mg/L	2	10	03/15/17 19:54	aeb
Manganese, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 19:54	aeb
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 19:54	aeb
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 19:54	aeb
Potassium, dissolved	M200.7 ICP	10	3	B	*	mg/L	2	10	03/15/17 19:54	aeb
Selenium, dissolved	M200.8 ICP-MS	10	0.046		*	mg/L	0.001	0.003	03/20/17 17:23	mfm
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 19:54	aeb
Sodium, dissolved	M200.7 ICP	10	8110		*	mg/L	2	10	03/15/17 19:54	aeb
Strontium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 19:54	aeb
Uranium, dissolved	M200.8 ICP-MS	10	1.95		*	mg/L	0.001	0.005	03/13/17 23:07	enb
Vanadium, dissolved	M200.7 ICP	10	0.10	B	*	mg/L	0.05	0.3	03/15/17 19:54	aeb
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 19:54	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 472-473 STEP 3

ACZ Sample ID: ***L35950-03***
Date Sampled: *09/01/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.0659		*	mg/L	0.0002	0.001	03/13/17 23:10	enb
Barium, dissolved	M200.7 ICP	1	0.050		*	mg/L	0.003	0.02	03/15/17 20:04	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0035		*	mg/L	0.0001	0.0005	03/13/17 23:10	enb
Calcium, dissolved	M200.7 ICP	1	7.6		*	mg/L	0.1	0.5	03/15/17 20:04	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0674		*	mg/L	0.0005	0.002	03/13/17 23:10	enb
Copper, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	03/15/17 20:04	aeb
Iron, dissolved	M200.7 ICP	1	112		*	mg/L	0.02	0.05	03/15/17 20:04	aeb
Magnesium, dissolved	M200.7 ICP	1	19.2		*	mg/L	0.2	1	03/15/17 20:04	aeb
Manganese, dissolved	M200.7 ICP	1	0.365		*	mg/L	0.005	0.03	03/15/17 20:04	aeb
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	03/15/17 20:04	aeb
Nickel, dissolved	M200.7 ICP	1	0.132		*	mg/L	0.008	0.04	03/15/17 20:04	aeb
Potassium, dissolved	M200.7 ICP	1	1.3		*	mg/L	0.2	1	03/15/17 20:04	aeb
Selenium, dissolved	M200.8 ICP-MS	10	0.018		*	mg/L	0.001	0.003	03/20/17 17:26	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	03/15/17 20:04	aeb
Sodium, dissolved	M200.7 ICP	1	99.0		*	mg/L	0.2	1	03/15/17 20:04	aeb
Strontium, dissolved	M200.7 ICP	1	0.017	B	*	mg/L	0.005	0.03	03/15/17 20:04	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.701		*	mg/L	0.0001	0.0005	03/13/17 23:10	enb
Vanadium, dissolved	M200.7 ICP	1	0.159		*	mg/L	0.005	0.03	03/15/17 20:04	aeb
Zinc, dissolved	M200.7 ICP	1	0.20		*	mg/L	0.01	0.05	03/15/17 20:04	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 472-473 STEP 4

ACZ Sample ID: ***L35950-04***
Date Sampled: *09/01/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	5	0.040		*	mg/L	0.001	0.005	03/13/17 23:13	enb
Barium, dissolved	M200.7 ICP	10	0.04	B	*	mg/L	0.03	0.2	03/15/17 20:07	aeb
Cadmium, dissolved	M200.8 ICP-MS	5	0.0011	B	*	mg/L	0.0005	0.003	03/13/17 23:13	enb
Calcium, dissolved	M200.7 ICP	10	1	B	*	mg/L	1	5	03/15/17 20:07	aeb
Chromium, dissolved	M200.8 ICP-MS	5	0.058		*	mg/L	0.003	0.01	03/13/17 23:13	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 20:07	aeb
Iron, dissolved	M200.7 ICP	10	23.2		*	mg/L	0.2	0.5	03/15/17 20:07	aeb
Magnesium, dissolved	M200.7 ICP	10	7	B	*	mg/L	2	10	03/15/17 20:07	aeb
Manganese, dissolved	M200.7 ICP	10	0.14	B	*	mg/L	0.05	0.3	03/15/17 20:07	aeb
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 20:07	aeb
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 20:07	aeb
Potassium, dissolved	M200.7 ICP	10		U	*	mg/L	2	10	03/15/17 20:07	aeb
Selenium, dissolved	M200.8 ICP-MS	20	0.007		*	mg/L	0.002	0.005	03/21/17 18:51	mfm
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 20:07	aeb
Sodium, dissolved	M200.7 ICP	10		U	*	mg/L	2	10	03/15/17 20:07	aeb
Strontium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 20:07	aeb
Uranium, dissolved	M200.8 ICP-MS	5	0.149		*	mg/L	0.0005	0.003	03/13/17 23:13	enb
Vanadium, dissolved	M200.7 ICP	10	0.07	B	*	mg/L	0.05	0.3	03/15/17 20:07	aeb
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 20:07	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 472-473 STEP 5

ACZ Sample ID: ***L35950-05***
Date Sampled: *09/01/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.128		*	mg/L	0.002	0.01	03/13/17 23:17	enb
Barium, dissolved	M200.7 ICP	5	0.03	B	*	mg/L	0.02	0.08	03/15/17 20:10	aeb
Cadmium, dissolved	M200.8 ICP-MS	10	0.001	B	*	mg/L	0.001	0.005	03/13/17 23:17	enb
Calcium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	03/15/17 20:10	aeb
Chromium, dissolved	M200.8 ICP-MS	10	0.025		*	mg/L	0.005	0.02	03/13/17 23:17	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 20:10	aeb
Iron, dissolved	M200.7 ICP	5	46.4		*	mg/L	0.1	0.3	03/15/17 20:10	aeb
Magnesium, dissolved	M200.7 ICP	5	3	B	*	mg/L	1	5	03/15/17 20:10	aeb
Manganese, dissolved	M200.7 ICP	5	0.05	B	*	mg/L	0.03	0.1	03/15/17 20:10	aeb
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 20:10	aeb
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/15/17 20:10	aeb
Potassium, dissolved	M200.7 ICP	5	4520		*	mg/L	1	5	03/15/17 20:10	aeb
Selenium, dissolved	M200.8 ICP-MS	10	0.275		*	mg/L	0.001	0.003	03/20/17 17:32	mfm
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/15/17 20:10	aeb
Sodium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/15/17 20:10	aeb
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 20:10	aeb
Uranium, dissolved	M200.8 ICP-MS	10	0.071		*	mg/L	0.001	0.005	03/13/17 23:17	enb
Vanadium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 20:10	aeb
Zinc, dissolved	M200.7 ICP	5	0.06	B	*	mg/L	0.05	0.3	03/15/17 20:10	aeb

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35950***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05098	mg/L	102	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0006	0.0006			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.0501		.05102	mg/L	102	85	115			
L35949-01AS	AS	03/13/17 22:38	MS170220-2	.0501	.038	.1017	mg/L	127	70	130			
L35949-01ASD	ASD	03/13/17 22:42	MS170220-2	.0501	.038	.09531	mg/L	114	70	130	6	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9518	mg/L	98	95	105			
WG419466ICB	ICB	03/15/17 19:12				.003	mg/L		-0.009	0.009			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5005		.5082	mg/L	102	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.5005	.074	.5495	mg/L	95	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.5005	.074	.5528	mg/L	96	85	115	1	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05072	mg/L	101	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0003	0.0003			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05005		.04959	mg/L	99	85	115			
L35949-01AS	AS	03/13/17 22:38	MS170220-2	.05005	.0004	.04406	mg/L	87	70	130			
L35949-01ASD	ASD	03/13/17 22:42	MS170220-2	.05005	.0004	.0385	mg/L	76	70	130	13	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	100		96.65	mg/L	97	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.3	0.3			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	67.99026		68.31	mg/L	100	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	67.99026	8.8	73.89	mg/L	96	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	67.99026	8.8	74.35	mg/L	96	85	115	1	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05078	mg/L	102	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0015	0.0015			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05		.05024	mg/L	100	85	115			
L35949-01AS	AS	03/13/17 22:38	MS170220-2	.05	.0013	.02447	mg/L	46	70	130			M2
L35949-01ASD	ASD	03/13/17 22:42	MS170220-2	.05	.0013	.02834	mg/L	54	70	130	15	20	M2

CAMECO Resources

ACZ Project ID: ***L35950***

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.966	mg/L	98	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.03	0.03			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5005		.499	mg/L	100	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.5005		.409	mg/L	82	85	115			M2
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.5005		.416	mg/L	83	85	115	2	20	M2

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.946	mg/L	97	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.06	0.06			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	1.0017		1.029	mg/L	103	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	1.0017	94.4	90.13	mg/L	-426	85	115			M3
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	1.0017	94.4	91.5	mg/L	-290	85	115	2	20	M3

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	100		97.82	mg/L	98	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.6	0.6			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	50.00074		46.21	mg/L	92	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	50.00074	21.1	64.73	mg/L	87	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	50.00074	21.1	65.23	mg/L	88	85	115	1	20	

Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9145	mg/L	96	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.015	0.015			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5		.5137	mg/L	103	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.5	.354	.8173	mg/L	93	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.5	.354	.8278	mg/L	95	85	115	1	20	

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		2.005	mg/L	100	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.06	0.06			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.4995		.516	mg/L	103	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.4995	U	.467	mg/L	93	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.4995	U	.471	mg/L	94	85	115	1	20	

CAMECO Resources

ACZ Project ID: ***L35950***

Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2.002		1.9735	mg/L	99	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.024	0.024			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.498		.4995	mg/L	100	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.498	.107	.5767	mg/L	94	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.498	.107	.579	mg/L	95	85	115	0	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	20		19.41	mg/L	97	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.6	0.6			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	99.96532		97.98	mg/L	98	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	99.96532	1.9	95.09	mg/L	93	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	99.96532	1.9	95.36	mg/L	93	85	115	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05115	mg/L	102	90	110			
WG419339ICB	ICB	03/13/17 22:29				.00015	mg/L		-0.0003	0.0003			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05005		.0488	mg/L	98	85	115			
L35949-01AS	AS	03/13/17 22:38	MS170220-2	.05005	.0064	.1005	mg/L	188	70	130			M1
L35949-01ASD	ASD	03/13/17 22:42	MS170220-2	.05005	.0064	.09052	mg/L	168	70	130	10	20	M1
WG419694													
WG419694ICV	ICV	03/20/17 16:43	MS170301-3	.05		.05242	mg/L	105	90	110			
WG419694ICB	ICB	03/20/17 16:46				.0002	mg/L		-0.0003	0.0003			
WG419694LFB	LFB	03/20/17 16:49	MS170220-2	.05005		.04986	mg/L	100	85	115			
L35930-01AS	AS	03/20/17 17:05	MS170220-2	.05005	U	.0509	mg/L	102	70	130			
L35930-01ASD	ASD	03/20/17 17:08	MS170220-2	.05005	U	.05044	mg/L	101	70	130	1	20	
WG419791													
WG419791ICV	ICV	03/21/17 17:24	MS170301-3	.05		.05221	mg/L	104	90	110			
WG419791ICB	ICB	03/21/17 17:27				U	mg/L		-0.0003	0.0003			
WG419791LFB	LFB	03/21/17 17:30	MS170321-3	.05005		.05083	mg/L	102	85	115			
L36005-01AS	AS	03/21/17 17:46	MS170321-3	.1001	U	.1085	mg/L	108	70	130			
L36005-01ASD	ASD	03/21/17 17:49	MS170321-3	.1001	U	.10652	mg/L	106	70	130	2	20	

Silver, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	1.002		1.01	mg/L	101	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.03	0.03			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.501		.511	mg/L	102	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.501	.01	.455	mg/L	89	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.501	.01	.441	mg/L	86	85	115	3	20	

CAMECO Resources

ACZ Project ID: ***L35950***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	100		98.62	mg/L	99	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.6	0.6			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	100.0322		99.5	mg/L	99	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	100.0322	135	222.7	mg/L	88	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	100.0322	135	224.4	mg/L	89	85	115	1	20	
WG419501													
WG419501ICV	ICV	03/16/17 13:00	II170222-1	100		101.1	mg/L	101	95	105			
WG419501ICB	ICB	03/16/17 13:06				U	mg/L		-0.6	0.6			
WG419501LFB	LFB	03/16/17 13:19	II170220-2	100.0322		97.81	mg/L	98	85	115			
L35949-01AS	AS	03/16/17 13:26	II170220-2	2000.644	15100	17088	mg/L	99	85	115			
L35949-01ASD	ASD	03/16/17 13:29	II170220-2	2000.644	15100	17362	mg/L	113	85	115	2	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9852	mg/L	99	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.015	0.015			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5015		.5092	mg/L	102	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.5015	.029	.5075	mg/L	95	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.5015	.029	.5087	mg/L	96	85	115	0	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.04873	mg/L	97	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0003	0.0003			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05		.04885	mg/L	98	85	115			
L35949-01AS	AS	03/13/17 22:38	MS170220-2	.05	10.2	10.33	mg/L	260	70	130			M3
L35949-01ASD	ASD	03/13/17 22:42	MS170220-2	.05	10.2	10.2	mg/L	0	70	130	1	20	M3

Vanadium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9947	mg/L	100	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.015	0.015			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.4985		.5119	mg/L	103	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.4985	.087	.5648	mg/L	96	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.4985	.087	.5686	mg/L	97	85	115	1	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.991	mg/L	100	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.03	0.03			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.4942		.525	mg/L	106	85	115			
L35949-03AS	AS	03/15/17 19:38	II170220-2	.4942	.17	.667	mg/L	101	85	115			
L35949-03ASD	ASD	03/15/17 19:41	II170220-2	.4942	.17	.667	mg/L	101	85	115	0	20	

CAMECO Resources ACZ Project ID: ***L35950***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35950-01	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Cadmium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
		Chromium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
			M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Uranium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
			M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35950-02	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419466	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Chromium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Uranium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
			M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

CAMECO Resources ACZ Project ID: ***L35950***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35950-03	WG419339	Chromium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Copper, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419339	Uranium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
			M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
L35950-04	WG419339	Arsenic, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Chromium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419791	Selenium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	N1	See Case Narrative.
	WG419466	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Uranium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
			M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

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Inorganic Extended Qualifier Report

CAMECO Resources ACZ Project ID: ***L35950***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35950-05	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419466	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Chromium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Uranium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
			M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419466	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 472-473 STEP 1
Locator:

ACZ Sample ID: ***L35950-01***
Date Sampled: *09/01/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:15		4000	14	1	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 472-473 STEP 2
Locator:

ACZ Sample ID: ***L35950-02***
Date Sampled: *09/01/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:17		610	3.8	0.25	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 472-473 STEP 3
Locator:

ACZ Sample ID: ***L35950-03***
Date Sampled: *09/01/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:18		3800	18	0.95	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 472-473 STEP 4
Locator:

ACZ Sample ID: ***L35950-04***
Date Sampled: *09/01/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:20		350	4.6	0.55	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-2 1 OF 2 472-473 STEP 5
Locator:

ACZ Sample ID: ***L35950-05***
Date Sampled: *09/01/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:21		83	2.1	0.65	pCi/L	*	tjr

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

Radiochemistry QC Summary

CAMECO Resources

ACZ Project ID: ***L35950***

Radium 226 M903.1 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
WG421292																
WG420541PBW	PBW	04/17/17						.16	0.1	0.25			0.5			
WG420541LCSW	LCSW	04/17/17	PCN52689	20				20	0.52	0.13	100	43	148			
L35728-18DUP	DUP-RER	04/17/17			0.71	0.13	0.24	.43	0.13	0.05				1.52	2	
L35728-19DUP	DUP-RER	04/17/17			0.8	0.12	0.07	.97	0.13	0.07				0.96	2	
L35728-20MS	MS	04/17/17	PCN52689	20	0.85	0.12	0.08	30	0.77	0.11	146	43	148			

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

RadChem Extended Qualifier Report

CAMECO Resources ACZ Project ID: ***L35950***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35950-01	WG421292	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
L35950-02	WG421292	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
L35950-03	WG421292	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
L35950-04	WG421292	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
L35950-05	WG421292	Radium 226	M903.1	DD	Sample required dilution due to matrix color or odor.

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

Radiochemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Radium 226	M903.1
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Radium 226	M903.1

ACZ Laboratories, Inc.
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Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35950
Date Received: 03/13/2017 09:24
Received By:
Date Printed: 3/13/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
UNKNOWN		NA		

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35950
Date Received: 03/13/2017 09:24
Received By:
Date Printed: 3/13/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Revised Analytical Report

April 27, 2017

Report to:
Jim Clay
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

Bill to:
Mary Anne Valentine
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

cc: Janet Schramke

Project ID: 4500546123
ACZ Project ID: L35951

Jim Clay:

Enclosed are revised analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 13, 2017 and originally reported on April 21, 2017. Refer to the case narrative for an explanation of the changes. This project was assigned to ACZ's project number, L35951. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L35951. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 21, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

CAMECO Resources

April 27, 2017

Project ID: 4500546123
ACZ Project ID: L35951

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 miscellaneous samples from CAMECO Resources on March 13, 2017. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L35951. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. This project is a client requested sequential leaching process. The reagents and protocols utilized come from the 'Trace metal occurrence in a mineralised and a non-mineralised spodosol in Northern Sweden', Land and others. Published in the Journal of Geochemical Exploration 75 (2002) 71-91.

2. This project has been revised to include some sample duplicate data that was missing from the Quality Control data summary.

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 463-464 STEP 1

ACZ Sample ID: ***L35951-01***
Date Sampled: *08/24/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.0014		*	mg/L	0.0002	0.001	03/13/17 20:27	enb
Barium, dissolved	M200.7 ICP	20	0.07	B	*	mg/L	0.06	0.3	03/15/17 17:16	gss
Cadmium, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	03/13/17 20:27	enb
Calcium, dissolved	M200.7 ICP	20	20		*	mg/L	2	10	03/15/17 17:16	gss
Chromium, dissolved	M200.8 ICP-MS	1	0.0036		*	mg/L	0.0005	0.002	03/13/17 20:27	enb
Copper, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	1	03/15/17 17:16	gss
Iron, dissolved	M200.7 ICP	20	5.4		*	mg/L	0.4	1	03/15/17 17:16	gss
Magnesium, dissolved	M200.7 ICP	20	8	B	*	mg/L	4	20	03/15/17 17:16	gss
Manganese, dissolved	M200.7 ICP	20		U	*	mg/L	0.1	0.5	03/15/17 17:16	gss
Molybdenum, dissolved	M200.7 ICP	20		U	*	mg/L	0.4	2	03/15/17 17:16	gss
Nickel, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	0.8	03/15/17 17:16	gss
Potassium, dissolved	M200.7 ICP	20	8	B	*	mg/L	4	20	03/15/17 17:16	gss
Selenium, dissolved	M200.8 ICP-MS	1	0.0067		*	mg/L	0.0001	0.0003	03/13/17 20:27	enb
Silver, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	0.5	03/15/17 17:16	gss
Sodium, dissolved	M200.7 ICP	20	15200		*	mg/L	4	20	03/15/17 17:16	gss
Strontium, dissolved	M200.7 ICP	20	0.2	B	*	mg/L	0.1	0.5	03/15/17 17:16	gss
Uranium, dissolved	M200.8 ICP-MS	1	0.103		*	mg/L	0.0001	0.0005	03/13/17 20:27	enb
Vanadium, dissolved	M200.7 ICP	20		U	*	mg/L	0.1	0.5	03/15/17 17:16	gss
Zinc, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	1	03/15/17 17:16	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 463-464 STEP 2

ACZ Sample ID: ***L35951-02***
Date Sampled: *08/24/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.0037		*	mg/L	0.0002	0.001	03/13/17 20:37	enb
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/15/17 10:59	gss
Cadmium, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0005	03/13/17 20:37	enb
Calcium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	03/15/17 10:59	gss
Chromium, dissolved	M200.8 ICP-MS	1	0.0226		*	mg/L	0.0005	0.002	03/13/17 20:37	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 10:59	gss
Iron, dissolved	M200.7 ICP	5	3.3		*	mg/L	0.1	0.3	03/15/17 10:59	gss
Magnesium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/15/17 10:59	gss
Manganese, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 10:59	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 10:59	gss
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/15/17 10:59	gss
Potassium, dissolved	M200.7 ICP	5	1	B	*	mg/L	1	5	03/15/17 10:59	gss
Selenium, dissolved	M200.8 ICP-MS	1	0.0012		*	mg/L	0.0001	0.0003	03/13/17 20:37	enb
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 17:19	gss
Sodium, dissolved	M200.7 ICP	10	7890		*	mg/L	2	10	03/15/17 17:19	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 10:59	gss
Uranium, dissolved	M200.8 ICP-MS	1	0.0699		*	mg/L	0.0001	0.0005	03/13/17 20:37	enb
Vanadium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 10:59	gss
Zinc, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 10:59	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 463-464 STEP 3

ACZ Sample ID: ***L35951-03***
Date Sampled: *08/24/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.0125		*	mg/L	0.0002	0.001	03/13/17 20:40	enb
Barium, dissolved	M200.7 ICP	5	0.03	B	*	mg/L	0.02	0.08	03/15/17 11:08	gss
Cadmium, dissolved	M200.8 ICP-MS	1	0.0008		*	mg/L	0.0001	0.0005	03/13/17 20:40	enb
Calcium, dissolved	M200.7 ICP	5	15.9		*	mg/L	0.5	3	03/15/17 11:08	gss
Chromium, dissolved	M200.8 ICP-MS	1	0.119		*	mg/L	0.0005	0.002	03/13/17 20:40	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 11:08	gss
Iron, dissolved	M200.7 ICP	5	65.7		*	mg/L	0.1	0.3	03/15/17 11:08	gss
Magnesium, dissolved	M200.7 ICP	5	13		*	mg/L	1	5	03/15/17 11:08	gss
Manganese, dissolved	M200.7 ICP	5	0.22		*	mg/L	0.03	0.1	03/15/17 11:08	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 11:08	gss
Nickel, dissolved	M200.7 ICP	5	0.07	B	*	mg/L	0.04	0.2	03/15/17 11:08	gss
Potassium, dissolved	M200.7 ICP	5	1	B	*	mg/L	1	5	03/15/17 11:08	gss
Selenium, dissolved	M200.8 ICP-MS	1	0.0007		*	mg/L	0.0001	0.0003	03/13/17 20:40	enb
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	03/15/17 17:23	gss
Sodium, dissolved	M200.7 ICP	5	44		*	mg/L	1	5	03/15/17 11:08	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:08	gss
Uranium, dissolved	M200.8 ICP-MS	1	0.155		*	mg/L	0.0001	0.0005	03/13/17 20:40	enb
Vanadium, dissolved	M200.7 ICP	5	0.10		*	mg/L	0.03	0.1	03/15/17 11:08	gss
Zinc, dissolved	M200.7 ICP	5	0.20	B	*	mg/L	0.05	0.3	03/15/17 11:08	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 463-464 STEP 4

ACZ Sample ID: ***L35951-04***
Date Sampled: *08/24/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	5	0.010		*	mg/L	0.001	0.005	03/13/17 20:43	enb
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/15/17 11:11	gss
Cadmium, dissolved	M200.8 ICP-MS	5	0.0007	B	*	mg/L	0.0005	0.003	03/13/17 20:43	enb
Calcium, dissolved	M200.7 ICP	5	1.0	B	*	mg/L	0.5	3	03/15/17 11:11	gss
Chromium, dissolved	M200.8 ICP-MS	5	0.059		*	mg/L	0.003	0.01	03/13/17 20:43	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 11:11	gss
Iron, dissolved	M200.7 ICP	5	11.8		*	mg/L	0.1	0.3	03/15/17 11:11	gss
Magnesium, dissolved	M200.7 ICP	5	3	B	*	mg/L	1	5	03/15/17 11:11	gss
Manganese, dissolved	M200.7 ICP	5	0.07	B	*	mg/L	0.03	0.1	03/15/17 11:11	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 11:11	gss
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/15/17 11:11	gss
Potassium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/15/17 11:11	gss
Selenium, dissolved	M200.8 ICP-MS	5	0.0013		*	mg/L	0.0005	0.001	03/13/17 20:43	enb
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/15/17 17:32	gss
Sodium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/15/17 11:11	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:11	gss
Uranium, dissolved	M200.8 ICP-MS	5	0.0469		*	mg/L	0.0005	0.003	03/13/17 20:43	enb
Vanadium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:11	gss
Zinc, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 11:11	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 463-464 STEP 5

ACZ Sample ID: ***L35951-05***
Date Sampled: *08/24/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.017		*	mg/L	0.002	0.01	03/13/17 20:46	enb
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/15/17 11:14	gss
Cadmium, dissolved	M200.8 ICP-MS	10	0.001	B	*	mg/L	0.001	0.005	03/13/17 20:46	enb
Calcium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	03/15/17 11:14	gss
Chromium, dissolved	M200.8 ICP-MS	10	0.020		*	mg/L	0.005	0.02	03/13/17 20:46	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 11:14	gss
Iron, dissolved	M200.7 ICP	5	9.7		*	mg/L	0.1	0.3	03/15/17 11:14	gss
Magnesium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/15/17 11:14	gss
Manganese, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:14	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 11:14	gss
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/15/17 11:14	gss
Potassium, dissolved	M200.7 ICP	5	4360		*	mg/L	1	5	03/15/17 11:14	gss
Selenium, dissolved	M200.8 ICP-MS	10	0.016		*	mg/L	0.001	0.003	03/13/17 20:46	enb
Silver, dissolved	M200.7 ICP	5	0.07	B	*	mg/L	0.05	0.1	03/15/17 17:35	gss
Sodium, dissolved	M200.7 ICP	5	1	B	*	mg/L	1	5	03/15/17 11:14	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:14	gss
Uranium, dissolved	M200.8 ICP-MS	10	0.124		*	mg/L	0.001	0.005	03/13/17 20:46	enb
Vanadium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:14	gss
Zinc, dissolved	M200.7 ICP	5	0.11	B	*	mg/L	0.05	0.3	03/15/17 11:14	gss

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35951***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.05066	mg/L	101	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0006	0.0006			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.0501		.05161	mg/L	103	85	115			
L35951-01AS	AS	03/13/17 20:30	MS170220-2	.0501	.0014	.06012	mg/L	117	70	130			
L35951-01ASD	ASD	03/13/17 20:33	MS170220-2	.0501	.0014	.0612	mg/L	119	70	130	2	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.9642	mg/L	98	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.009	0.009			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5005		.4935	mg/L	99	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.5025	U	2.499	mg/L	100	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.5025	U	2.479	mg/L	99	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.9862	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.009	0.009			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5005		.5026	mg/L	100	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.5005	.035	.508	mg/L	95	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.5005	.035	.5106	mg/L	95	85	115	1	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.04984	mg/L	100	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0003	0.0003			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05005		.05002	mg/L	100	85	115			
L35951-01AS	AS	03/13/17 20:30	MS170220-2	.05005	.0002	.04624	mg/L	92	70	130			
L35951-01ASD	ASD	03/13/17 20:33	MS170220-2	.05005	.0002	.04691	mg/L	93	70	130	1	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	100		98.99	mg/L	99	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.3	0.3			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	67.99026		72.65	mg/L	107	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	339.9513	U	331.3	mg/L	97	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	339.9513	U	328.6	mg/L	97	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	100		97.48	mg/L	97	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.3	0.3			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	67.99026		67.45	mg/L	99	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	67.99026	15.5	80.23	mg/L	95	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	67.99026	15.5	81.34	mg/L	97	85	115	1	20	

CAMECO Resources

ACZ Project ID: ***L35951***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.05187	mg/L	104	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0015	0.0015			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05		.05127	mg/L	103	85	115			
L35951-01AS	AS	03/13/17 20:30	MS170220-2	.05	.0036	.02973	mg/L	52	70	130			M2
L35951-01ASD	ASD	03/13/17 20:33	MS170220-2	.05	.0036	.02924	mg/L	51	70	130	2	20	M2

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.982	mg/L	99	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.03	0.03			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5005		.482	mg/L	96	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.5025	U	2.5	mg/L	100	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.5025	U	2.468	mg/L	99	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.983	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.03	0.03			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5005		.494	mg/L	99	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.5005	.04	.497	mg/L	91	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.5005	.04	.506	mg/L	93	85	115	2	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.932	mg/L	97	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.06	0.06			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	1.0017		.981	mg/L	98	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	5.0085	3.3	8.46	mg/L	103	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	5.0085	3.3	8.24	mg/L	99	85	115	3	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.978	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.06	0.06			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	1.0017		1.024	mg/L	102	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	1.0017	64.6	61.56	mg/L	-224	85	115			M3
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	1.0017	64.6	62	mg/L	-180	85	115	1	20	M3

CAMECO Resources

ACZ Project ID: ***L35951***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	100		100.05	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.6	0.6			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	50.00074		49.18	mg/L	98	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	250.0037	U	224.6	mg/L	90	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	250.0037	U	222.3	mg/L	89	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	100		98.81	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.6	0.6			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	50.00074		45.7	mg/L	91	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	50.00074	13.1	56.97	mg/L	88	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	50.00074	13.1	57.92	mg/L	90	85	115	2	20	

Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.9155	mg/L	96	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.015	0.015			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5		.4859	mg/L	97	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.5	U	2.438	mg/L	98	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.5	U	2.408	mg/L	96	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.9532	mg/L	98	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.015	0.015			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5		.5088	mg/L	102	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.5	.237	.7099	mg/L	95	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.5	.237	.718	mg/L	96	85	115	1	20	

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2.018	mg/L	101	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.06	0.06			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.4995		.533	mg/L	107	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.4975	U	2.45	mg/L	98	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.4975	U	2.43	mg/L	97	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.048	mg/L	102	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.06	0.06			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.4995		.513	mg/L	103	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.4995	U	.483	mg/L	97	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.4995	U	.496	mg/L	99	85	115	3	20	

CAMECO Resources

ACZ Project ID: ***L35951***

Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2.002		2.0243	mg/L	101	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.024	0.024			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.498		.4926	mg/L	99	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.49	U	2.429	mg/L	98	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.49	U	2.438	mg/L	98	85	115	0	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2.002		1.9978	mg/L	100	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.024	0.024			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.498		.4864	mg/L	98	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.498	.052	.5232	mg/L	95	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.498	.052	.5327	mg/L	97	85	115	2	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	20		19.8	mg/L	99	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.6	0.6			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	99.96532		105.2	mg/L	105	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	499.8266	1	490.9	mg/L	98	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	499.8266	1	488.7	mg/L	98	85	115	0	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	20		19.64	mg/L	98	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.6	0.6			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	99.96532		96.52	mg/L	97	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	99.96532	1.1	92.5	mg/L	91	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	99.96532	1.1	93.34	mg/L	92	85	115	1	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.05169	mg/L	103	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0003	0.0003			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05005		.04992	mg/L	100	85	115			
L35951-01AS	AS	03/13/17 20:30	MS170220-2	.05005	.0067	.08783	mg/L	162	70	130			M1
L35951-01ASD	ASD	03/13/17 20:33	MS170220-2	.05005	.0067	.08955	mg/L	166	70	130	2	20	M1

Silver, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	1.002		1.026	mg/L	102	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.03	0.03			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.501		.502	mg/L	100	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.501	U	.468	mg/L	93	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.501	U	.473	mg/L	94	85	115	1	20	

CAMECO Resources

ACZ Project ID: ***L35951***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	100		101.37	mg/L	101	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.6	0.6			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	100.0322		107.4	mg/L	107	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	500.161	7600	8040	mg/L	88	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	500.161	7600	8160	mg/L	112	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	100		99.57	mg/L	100	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.6	0.6			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	100.0322		98.63	mg/L	99	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	100.0322	33.9	125.5	mg/L	92	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	100.0322	33.9	126.5	mg/L	93	85	115	1	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2.0022	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.015	0.015			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5015		.5364	mg/L	107	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.5075	U	2.478	mg/L	99	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.5075	U	2.47	mg/L	99	85	115	0	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.007	mg/L	100	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.015	0.015			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5015		.5057	mg/L	101	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.5015	.028	.503	mg/L	95	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.5015	.028	.5072	mg/L	96	85	115	1	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.04893	mg/L	98	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0003	0.0003			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05		.04863	mg/L	97	85	115			
L35951-01AS	AS	03/13/17 20:30	MS170220-2	.05	.1026	.1241	mg/L	43	70	130			M2
L35951-01ASD	ASD	03/13/17 20:33	MS170220-2	.05	.1026	.1213	mg/L	37	70	130	2	20	M2

CAMECO Resources

ACZ Project ID: ***L35951***

Vanadium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2.0052	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.015	0.015			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.4985		.538	mg/L	108	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.4925	U	2.504	mg/L	100	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.4925	U	2.474	mg/L	99	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.0298	mg/L	101	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.015	0.015			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.4985		.5106	mg/L	102	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.4985	.096	.5726	mg/L	96	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.4985	.096	.5833	mg/L	98	85	115	2	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.03	0.03			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.4942		.546	mg/L	110	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.471	U	2.531	mg/L	102	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.471	U	2.527	mg/L	102	85	115	0	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.035	mg/L	102	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.03	0.03			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.4942		.524	mg/L	106	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.4942	.22	.705	mg/L	100	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.4942	.22	.718	mg/L	103	85	115	2	20	

CAMECO Resources ACZ Project ID: ***L35951***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35951-01	WG419468	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35951-02	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419376	Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35951-03	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

CAMECO Resources ACZ Project ID: ***L35951***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35951-04	WG419338	Arsenic, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
	WG419376	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419376	Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35951-05	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419376	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419376	Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 463-464 STEP 1
Locator:

ACZ Sample ID: ***L35951-01***
Date Sampled: *08/24/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:23		680	6.5	0.56	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 463-464 STEP 2
Locator:

ACZ Sample ID: ***L35951-02***
Date Sampled: *08/24/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:24		41	0.93	0.16	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 463-464 STEP 3
Locator:

ACZ Sample ID: ***L35951-03***
Date Sampled: *08/24/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:25		560	7.6	0.78	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 463-464 STEP 4
Locator:

ACZ Sample ID: ***L35951-04***
Date Sampled: *08/24/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:27		120	3.2	0.59	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 463-464 STEP 5
Locator:

ACZ Sample ID: ***L35951-05***
Date Sampled: *08/24/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/17/17 0:28		36	1.5	1.1	pCi/L	*	tjr

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35951***

Radium 226 M903.1 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
WG421292																
WG420541PBW	PBW	04/17/17						.16	0.1	0.25			0.5			
WG420541LCSW	LCSW	04/17/17	PCN52689	20				20	0.52	0.13	100	43	148			
L35728-18DUP	DUP-RER	04/17/17			0.71	0.13	0.24	.43	0.13	0.05				1.52	2	
L35728-19DUP	DUP-RER	04/17/17			0.8	0.12	0.07	.97	0.13	0.07				0.96	2	
L35728-20MS	MS	04/17/17	PCN52689	20	0.85	0.12	0.08	30	0.77	0.11	146	43	148			

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RadChem Extended Qualifier Report

CAMECO Resources ACZ Project ID: ***L35951***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35951-01	WG421292	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
L35951-02	WG421292	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
L35951-03	WG421292	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
L35951-04	WG421292	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
L35951-05	WG421292	Radium 226	M903.1	DD	Sample required dilution due to matrix color or odor.

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

Radiochemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Radium 226	M903.1
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Radium 226	M903.1

ACZ Laboratories, Inc.
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Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35951
Date Received: 03/13/2017 09:30
Received By:
Date Printed: 3/13/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
UNKNOWN		NA		

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
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Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35951
Date Received: 03/13/2017 09:30
Received By:
Date Printed: 3/13/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 28, 2017

Report to:
Jim Clay
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

cc: Janet Schramke

Bill to:
Mary Anne Valentine
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

Project ID: 4500546123
ACZ Project ID: L35952

Jim Clay:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 13, 2017. This project has been assigned to ACZ's project number, L35952. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L35952. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 28, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

CAMECO Resources

April 28, 2017

Project ID: 4500546123
ACZ Project ID: L35952

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 miscellaneous samples from CAMECO Resources on March 13, 2017. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L35952. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. This project is a client requested sequential leaching process. The reagents and protocols utilized come from the 'Trace metal occurrence in a mineralised and a non-mineralised spodosol in Northern Sweden', Land and others. Published in the Journal of Geochemical Exploration 75 (2002) 71-91.

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 474-475 STEP 1

ACZ Sample ID: ***L35952-01***
Date Sampled: *08/24/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.028		*	mg/L	0.002	0.01	03/13/17 20:50	enb
Barium, dissolved	M200.7 ICP	20	0.09	B	*	mg/L	0.06	0.3	03/15/17 17:39	gss
Cadmium, dissolved	M200.8 ICP-MS	10		U	*	mg/L	0.001	0.005	03/13/17 20:50	enb
Calcium, dissolved	M200.7 ICP	20	79		*	mg/L	2	10	03/15/17 17:39	gss
Chromium, dissolved	M200.8 ICP-MS	10	0.009	B	*	mg/L	0.005	0.02	03/13/17 20:50	enb
Copper, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	1	03/15/17 17:39	gss
Iron, dissolved	M200.7 ICP	20		U	*	mg/L	0.4	1	03/15/17 17:39	gss
Magnesium, dissolved	M200.7 ICP	20	15	B	*	mg/L	4	20	03/15/17 17:39	gss
Manganese, dissolved	M200.7 ICP	20		U	*	mg/L	0.1	0.5	03/15/17 17:39	gss
Molybdenum, dissolved	M200.7 ICP	20		U	*	mg/L	0.4	2	03/15/17 17:39	gss
Nickel, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	0.8	03/15/17 17:39	gss
Potassium, dissolved	M200.7 ICP	20	22		*	mg/L	4	20	03/15/17 17:39	gss
Selenium, dissolved	M200.8 ICP-MS	10	0.035		*	mg/L	0.001	0.003	03/13/17 20:50	enb
Silver, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	0.5	03/15/17 17:39	gss
Sodium, dissolved	M200.7 ICP	20	15000		*	mg/L	4	20	03/15/17 17:39	gss
Strontium, dissolved	M200.7 ICP	20	0.7		*	mg/L	0.1	0.5	03/15/17 17:39	gss
Uranium, dissolved	M200.8 ICP-MS	10	0.572		*	mg/L	0.001	0.005	03/13/17 20:50	enb
Vanadium, dissolved	M200.7 ICP	20	0.6		*	mg/L	0.1	0.5	03/15/17 17:39	gss
Zinc, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	1	03/15/17 17:39	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 474-475 STEP 2

ACZ Sample ID: ***L35952-02***
Date Sampled: *08/24/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.045		*	mg/L	0.002	0.01	03/13/17 20:59	enb
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/15/17 11:20	gss
Cadmium, dissolved	M200.8 ICP-MS	10	0.004	B	*	mg/L	0.001	0.005	03/13/17 20:59	enb
Calcium, dissolved	M200.7 ICP	5	2.2	B	*	mg/L	0.5	3	03/15/17 11:20	gss
Chromium, dissolved	M200.8 ICP-MS	10	0.017	B	*	mg/L	0.005	0.02	03/13/17 20:59	enb
Copper, dissolved	M200.7 ICP	5	0.06	B	*	mg/L	0.05	0.3	03/15/17 11:20	gss
Iron, dissolved	M200.7 ICP	5	0.7		*	mg/L	0.1	0.3	03/15/17 11:20	gss
Magnesium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/15/17 11:20	gss
Manganese, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:20	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 11:20	gss
Nickel, dissolved	M200.7 ICP	5	0.04	B	*	mg/L	0.04	0.2	03/15/17 11:20	gss
Potassium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/15/17 11:20	gss
Selenium, dissolved	M200.8 ICP-MS	10	0.026		*	mg/L	0.001	0.003	03/13/17 20:59	enb
Silver, dissolved	M200.7 ICP	10	0.1	B	*	mg/L	0.1	0.3	03/15/17 17:42	gss
Sodium, dissolved	M200.7 ICP	10	7780		*	mg/L	2	10	03/15/17 17:42	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:20	gss
Uranium, dissolved	M200.8 ICP-MS	10	1.24		*	mg/L	0.001	0.005	03/13/17 20:59	enb
Vanadium, dissolved	M200.7 ICP	5	0.44		*	mg/L	0.03	0.1	03/15/17 11:20	gss
Zinc, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 11:20	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 474-475 STEP 3

ACZ Sample ID: ***L35952-03***
Date Sampled: *08/24/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.0402		*	mg/L	0.0002	0.001	03/13/17 21:02	enb
Barium, dissolved	M200.7 ICP	5	0.07	B	*	mg/L	0.02	0.08	03/15/17 11:29	gss
Cadmium, dissolved	M200.8 ICP-MS	1	0.0018		*	mg/L	0.0001	0.0005	03/13/17 21:02	enb
Calcium, dissolved	M200.7 ICP	5	8.7		*	mg/L	0.5	3	03/15/17 11:29	gss
Chromium, dissolved	M200.8 ICP-MS	1	0.0451		*	mg/L	0.0005	0.002	03/13/17 21:02	enb
Copper, dissolved	M200.7 ICP	5	0.05	B	*	mg/L	0.05	0.3	03/15/17 11:29	gss
Iron, dissolved	M200.7 ICP	5	42.9		*	mg/L	0.1	0.3	03/15/17 11:29	gss
Magnesium, dissolved	M200.7 ICP	5	13		*	mg/L	1	5	03/15/17 11:29	gss
Manganese, dissolved	M200.7 ICP	5	0.32		*	mg/L	0.03	0.1	03/15/17 11:29	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 11:29	gss
Nickel, dissolved	M200.7 ICP	5	0.15	B	*	mg/L	0.04	0.2	03/15/17 11:29	gss
Potassium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/15/17 11:29	gss
Selenium, dissolved	M200.8 ICP-MS	1	0.0047		*	mg/L	0.0001	0.0003	03/13/17 21:02	enb
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	03/15/17 17:52	gss
Sodium, dissolved	M200.7 ICP	5	129		*	mg/L	1	5	03/15/17 11:29	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:29	gss
Uranium, dissolved	M200.8 ICP-MS	1	0.172		*	mg/L	0.0001	0.0005	03/13/17 21:02	enb
Vanadium, dissolved	M200.7 ICP	5	0.40		*	mg/L	0.03	0.1	03/15/17 11:29	gss
Zinc, dissolved	M200.7 ICP	5	0.27	B	*	mg/L	0.05	0.3	03/15/17 11:29	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 474-475 STEP 4

ACZ Sample ID: ***L35952-04***
Date Sampled: *08/24/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	5	0.370		*	mg/L	0.001	0.005	03/13/17 21:06	enb
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/15/17 11:32	gss
Cadmium, dissolved	M200.8 ICP-MS	5	0.0022	B	*	mg/L	0.0005	0.003	03/13/17 21:06	enb
Calcium, dissolved	M200.7 ICP	5	1.0	B	*	mg/L	0.5	3	03/15/17 11:32	gss
Chromium, dissolved	M200.8 ICP-MS	5	0.082		*	mg/L	0.003	0.01	03/13/17 21:06	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 11:32	gss
Iron, dissolved	M200.7 ICP	5	76.4		*	mg/L	0.1	0.3	03/15/17 11:32	gss
Magnesium, dissolved	M200.7 ICP	5	8		*	mg/L	1	5	03/15/17 11:32	gss
Manganese, dissolved	M200.7 ICP	5	0.28		*	mg/L	0.03	0.1	03/15/17 11:32	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 11:32	gss
Nickel, dissolved	M200.7 ICP	5	0.10	B	*	mg/L	0.04	0.2	03/15/17 11:32	gss
Potassium, dissolved	M200.7 ICP	5	1	B	*	mg/L	1	5	03/15/17 11:32	gss
Selenium, dissolved	M200.8 ICP-MS	5	0.0088		*	mg/L	0.0005	0.001	03/13/17 21:06	enb
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/15/17 17:55	gss
Sodium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/15/17 11:32	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:32	gss
Uranium, dissolved	M200.8 ICP-MS	5	0.0456		*	mg/L	0.0005	0.003	03/13/17 21:06	enb
Vanadium, dissolved	M200.7 ICP	5	0.24		*	mg/L	0.03	0.1	03/15/17 11:32	gss
Zinc, dissolved	M200.7 ICP	5	0.15	B	*	mg/L	0.05	0.3	03/15/17 11:32	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 474-475 STEP 5

ACZ Sample ID: ***L35952-05***
Date Sampled: *08/24/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.092		*	mg/L	0.002	0.01	03/13/17 21:09	enb
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/15/17 11:35	gss
Cadmium, dissolved	M200.8 ICP-MS	10	0.001	B	*	mg/L	0.001	0.005	03/13/17 21:09	enb
Calcium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	03/15/17 11:35	gss
Chromium, dissolved	M200.8 ICP-MS	10	0.031		*	mg/L	0.005	0.02	03/13/17 21:09	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 11:35	gss
Iron, dissolved	M200.7 ICP	5	18.6		*	mg/L	0.1	0.3	03/15/17 11:35	gss
Magnesium, dissolved	M200.7 ICP	5	3	B	*	mg/L	1	5	03/15/17 11:35	gss
Manganese, dissolved	M200.7 ICP	5	0.03	B	*	mg/L	0.03	0.1	03/15/17 11:35	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 11:35	gss
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/15/17 11:35	gss
Potassium, dissolved	M200.7 ICP	5	4400		*	mg/L	1	5	03/15/17 11:35	gss
Selenium, dissolved	M200.8 ICP-MS	10	1.1		*	mg/L	0.001	0.003	03/13/17 21:09	enb
Silver, dissolved	M200.7 ICP	5	0.08	B	*	mg/L	0.05	0.1	03/15/17 17:58	gss
Sodium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/15/17 11:35	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:35	gss
Uranium, dissolved	M200.8 ICP-MS	10	0.028		*	mg/L	0.001	0.005	03/13/17 21:09	enb
Vanadium, dissolved	M200.7 ICP	5	0.05	B	*	mg/L	0.03	0.1	03/15/17 11:35	gss
Zinc, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 11:35	gss

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35952***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.05066	mg/L	101	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0006	0.0006			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.0501		.05161	mg/L	103	85	115			
L35951-01AS	AS	03/13/17 20:30	MS170220-2	.0501	.0014	.06012	mg/L	117	70	130			
L35951-01ASD	ASD	03/13/17 20:33	MS170220-2	.0501	.0014	.0612	mg/L	119	70	130	2	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.9642	mg/L	98	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.009	0.009			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5005		.4935	mg/L	99	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.5025	U	2.499	mg/L	100	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.5025	U	2.479	mg/L	99	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.9862	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.009	0.009			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5005		.5026	mg/L	100	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.5005	.035	.508	mg/L	95	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.5005	.035	.5106	mg/L	95	85	115	1	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.04984	mg/L	100	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0003	0.0003			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05005		.05002	mg/L	100	85	115			
L35951-01AS	AS	03/13/17 20:30	MS170220-2	.05005	.0002	.04624	mg/L	92	70	130			
L35951-01ASD	ASD	03/13/17 20:33	MS170220-2	.05005	.0002	.04691	mg/L	93	70	130	1	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	100		98.99	mg/L	99	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.3	0.3			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	67.99026		72.65	mg/L	107	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	339.9513	U	331.3	mg/L	97	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	339.9513	U	328.6	mg/L	97	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	100		97.48	mg/L	97	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.3	0.3			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	67.99026		67.45	mg/L	99	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	67.99026	15.5	80.23	mg/L	95	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	67.99026	15.5	81.34	mg/L	97	85	115	1	20	

CAMECO Resources

ACZ Project ID: ***L35952***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.05187	mg/L	104	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0015	0.0015			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05		.05127	mg/L	103	85	115			
L35951-01AS	AS	03/13/17 20:30	MS170220-2	.05	.0036	.02973	mg/L	52	70	130			M2
L35951-01ASD	ASD	03/13/17 20:33	MS170220-2	.05	.0036	.02924	mg/L	51	70	130	2	20	M2

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.982	mg/L	99	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.03	0.03			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5005		.482	mg/L	96	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.5025	U	2.5	mg/L	100	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.5025	U	2.468	mg/L	99	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.983	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.03	0.03			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5005		.494	mg/L	99	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.5005	.04	.497	mg/L	91	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.5005	.04	.506	mg/L	93	85	115	2	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.932	mg/L	97	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.06	0.06			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	1.0017		.981	mg/L	98	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	5.0085	3.3	8.46	mg/L	103	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	5.0085	3.3	8.24	mg/L	99	85	115	3	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.978	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.06	0.06			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	1.0017		1.024	mg/L	102	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	1.0017	64.6	61.56	mg/L	-224	85	115			M3
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	1.0017	64.6	62	mg/L	-180	85	115	1	20	M3

CAMECO Resources

ACZ Project ID: ***L35952***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	100		100.05	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.6	0.6			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	50.00074		49.18	mg/L	98	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	250.0037	U	224.6	mg/L	90	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	250.0037	U	222.3	mg/L	89	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	100		98.81	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.6	0.6			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	50.00074		45.7	mg/L	91	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	50.00074	13.1	56.97	mg/L	88	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	50.00074	13.1	57.92	mg/L	90	85	115	2	20	

Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.9155	mg/L	96	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.015	0.015			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5		.4859	mg/L	97	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.5	U	2.438	mg/L	98	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.5	U	2.408	mg/L	96	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.9532	mg/L	98	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.015	0.015			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5		.5088	mg/L	102	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.5	.237	.7099	mg/L	95	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.5	.237	.718	mg/L	96	85	115	1	20	

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2.018	mg/L	101	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.06	0.06			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.4995		.533	mg/L	107	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.4975	U	2.45	mg/L	98	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.4975	U	2.43	mg/L	97	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.048	mg/L	102	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.06	0.06			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.4995		.513	mg/L	103	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.4995	U	.483	mg/L	97	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.4995	U	.496	mg/L	99	85	115	3	20	

CAMECO Resources

ACZ Project ID: ***L35952***

Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2.002		2.0243	mg/L	101	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.024	0.024			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.498		.4926	mg/L	99	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.49	U	2.429	mg/L	98	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.49	U	2.438	mg/L	98	85	115	0	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2.002		1.9978	mg/L	100	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.024	0.024			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.498		.4864	mg/L	98	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.498	.052	.5232	mg/L	95	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.498	.052	.5327	mg/L	97	85	115	2	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	20		19.8	mg/L	99	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.6	0.6			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	99.96532		105.2	mg/L	105	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	499.8266	1	490.9	mg/L	98	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	499.8266	1	488.7	mg/L	98	85	115	0	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	20		19.64	mg/L	98	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.6	0.6			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	99.96532		96.52	mg/L	97	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	99.96532	1.1	92.5	mg/L	91	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	99.96532	1.1	93.34	mg/L	92	85	115	1	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.05169	mg/L	103	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0003	0.0003			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05005		.04992	mg/L	100	85	115			
L35951-01AS	AS	03/13/17 20:30	MS170220-2	.05005	.0067	.08783	mg/L	162	70	130			M1
L35951-01ASD	ASD	03/13/17 20:33	MS170220-2	.05005	.0067	.08955	mg/L	166	70	130	2	20	M1

Silver, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	1.002		1.026	mg/L	102	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.03	0.03			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.501		.502	mg/L	100	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.501	U	.468	mg/L	93	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.501	U	.473	mg/L	94	85	115	1	20	

CAMECO Resources

ACZ Project ID: ***L35952***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	100		101.37	mg/L	101	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.6	0.6			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	100.0322		107.4	mg/L	107	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	500.161	7600	8040	mg/L	88	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	500.161	7600	8160	mg/L	112	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	100		99.57	mg/L	100	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.6	0.6			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	100.0322		98.63	mg/L	99	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	100.0322	33.9	125.5	mg/L	92	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	100.0322	33.9	126.5	mg/L	93	85	115	1	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2.0022	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.015	0.015			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5015		.5364	mg/L	107	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.5075	U	2.478	mg/L	99	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.5075	U	2.47	mg/L	99	85	115	0	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.007	mg/L	100	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.015	0.015			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5015		.5057	mg/L	101	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.5015	.028	.503	mg/L	95	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.5015	.028	.5072	mg/L	96	85	115	1	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.04893	mg/L	98	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0003	0.0003			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05		.04863	mg/L	97	85	115			
L35951-01AS	AS	03/13/17 20:30	MS170220-2	.05	.1026	.1241	mg/L	43	70	130			M2
L35951-01ASD	ASD	03/13/17 20:33	MS170220-2	.05	.1026	.1213	mg/L	37	70	130	2	20	M2

CAMECO Resources

ACZ Project ID: ***L35952***

Vanadium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2.0052	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.015	0.015			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.4985		.538	mg/L	108	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.4925	U	2.504	mg/L	100	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.4925	U	2.474	mg/L	99	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.0298	mg/L	101	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.015	0.015			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.4985		.5106	mg/L	102	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.4985	.096	.5726	mg/L	96	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.4985	.096	.5833	mg/L	98	85	115	2	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.03	0.03			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.4942		.546	mg/L	110	85	115			
L35951-02AS	AS	03/15/17 11:02	II170220-2	2.471	U	2.531	mg/L	102	85	115			
L35951-02ASD	ASD	03/15/17 11:05	II170220-2	2.471	U	2.527	mg/L	102	85	115	0	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.035	mg/L	102	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.03	0.03			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.4942		.524	mg/L	106	85	115			
L35951-03AS	AS	03/15/17 17:26	II170220-2	.4942	.22	.705	mg/L	100	85	115			
L35951-03ASD	ASD	03/15/17 17:29	II170220-2	.4942	.22	.718	mg/L	103	85	115	2	20	

CAMECO Resources ACZ Project ID: ***L35952***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35952-01	WG419468	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Chromium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35952-02	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419376	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419376	Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35952-03	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

CAMECO Resources ACZ Project ID: ***L35952***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35952-04	WG419338	Arsenic, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419376	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419376	Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35952-05	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419376	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419376	Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 474-475 STEP 1
Locator:

ACZ Sample ID: ***L35952-01***
Date Sampled: *08/24/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:10		250	4.1	1.2	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 474-475 STEP 2
Locator:

ACZ Sample ID: ***L35952-02***
Date Sampled: *08/24/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:11		120	2.5	0.28	pCi/L	*	tjr

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 474-475 STEP 3
Locator:

ACZ Sample ID: ***L35952-03***
Date Sampled: *08/24/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:12		560	6.8	0.57	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 474-475 STEP 4
Locator:

ACZ Sample ID: ***L35952-04***
Date Sampled: *08/24/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:14		22	1.1	0.61	pCi/L	*	tjr

ACZ Laboratories, Inc.
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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-3 1 OF 2 474-475 STEP 5
Locator:

ACZ Sample ID: ***L35952-05***
Date Sampled: *08/24/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:15		4.7	0.51	0.72	pCi/L	*	tjr

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35952***

Radium 226 M903.1 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
WG421702																
WG420753PBW	PBW	04/24/17						.07	0.07	0.38			0.76			
WG420753LCSW	LCSW	04/24/17	PCN52689	20				22	0.58	0.12	110	43	148			
L35729-02DUP	DUP-RER	04/24/17			0.96	0.13	0.05	.52	0.1	0.06				2.68	2	RM
L35729-03DUP	DUP-RER	04/24/17			0.34	0.09	0.04	.33	0.1	0.11				0.07	2	
L35729-04MS	MS	04/24/17	PCN52689	20	0.39	0.11	0.05	20	0.58	0.06	98	43	148			

CAMECO Resources ACZ Project ID: ***L35952***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35952-01	*N*G421702	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35952-02	*N*G421702	Radium 226	M903.1	DF	Sample required dilution due to high sediment.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35952-03	*N*G421702	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35952-04	*N*G421702	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35952-05	*N*G421702	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

Radiochemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Radium 226	M903.1
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Radium 226	M903.1

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35952
Date Received: 03/13/2017 09:33
Received By:
Date Printed: 3/13/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
UNKNOWN		NA		

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35952
Date Received: 03/13/2017 09:33
Received By:
Date Printed: 3/13/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 28, 2017

Report to:
Jim Clay
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

cc: Janet Schramke

Bill to:
Mary Anne Valentine
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

Project ID: 4500546123
ACZ Project ID: L35953

Jim Clay:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 13, 2017. This project has been assigned to ACZ's project number, L35953. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L35953. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 28, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

CAMECO Resources

April 28, 2017

Project ID: 4500546123
ACZ Project ID: L35953

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 miscellaneous samples from CAMECO Resources on March 13, 2017. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L35953. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. This project is a client requested sequential leaching process. The reagents and protocols utilized come from the 'Trace metal occurrence in a mineralised and a non-mineralised spodosol in Northern Sweden', Land and others. Published in the Journal of Geochemical Exploration 75 (2002) 71-91.

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 479-480 STEP 1

ACZ Sample ID: ***L35953-01***
Date Sampled: *08/29/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	5	0.012		*	mg/L	0.001	0.005	03/13/17 23:20	enb
Barium, dissolved	M200.7 ICP	10	0.13	B	*	mg/L	0.03	0.2	03/15/17 20:13	aeb
Cadmium, dissolved	M200.8 ICP-MS	5		U	*	mg/L	0.0005	0.003	03/13/17 23:20	enb
Calcium, dissolved	M200.7 ICP	10	38		*	mg/L	1	5	03/15/17 20:13	aeb
Chromium, dissolved	M200.8 ICP-MS	5		U	*	mg/L	0.003	0.01	03/13/17 23:20	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 20:13	aeb
Iron, dissolved	M200.7 ICP	10	1.0		*	mg/L	0.2	0.5	03/15/17 20:13	aeb
Magnesium, dissolved	M200.7 ICP	10	8	B	*	mg/L	2	10	03/15/17 20:13	aeb
Manganese, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 20:13	aeb
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 20:13	aeb
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 20:13	aeb
Potassium, dissolved	M200.7 ICP	10	18		*	mg/L	2	10	03/15/17 20:13	aeb
Selenium, dissolved	M200.8 ICP-MS	10	0.006		*	mg/L	0.001	0.003	03/20/17 17:35	mfm
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 20:13	aeb
Sodium, dissolved	M200.7 ICP	20	14800		*	mg/L	4	20	03/16/17 13:39	aeb
Strontium, dissolved	M200.7 ICP	10	0.40		*	mg/L	0.05	0.3	03/15/17 20:13	aeb
Uranium, dissolved	M200.8 ICP-MS	5	0.0199		*	mg/L	0.0005	0.003	03/13/17 23:20	enb
Vanadium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 20:13	aeb
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 20:13	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 479-480 STEP 2

ACZ Sample ID: ***L35953-02***
Date Sampled: *08/29/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.0409		*	mg/L	0.0002	0.001	03/13/17 23:30	enb
Barium, dissolved	M200.7 ICP	10		U	*	mg/L	0.03	0.2	03/15/17 20:17	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	03/13/17 23:30	enb
Calcium, dissolved	M200.7 ICP	10		U	*	mg/L	1	5	03/15/17 20:17	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0036		*	mg/L	0.0005	0.002	03/13/17 23:30	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 20:17	aeb
Iron, dissolved	M200.7 ICP	10	1.3		*	mg/L	0.2	0.5	03/15/17 20:17	aeb
Magnesium, dissolved	M200.7 ICP	10		U	*	mg/L	2	10	03/15/17 20:17	aeb
Manganese, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 20:17	aeb
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 20:17	aeb
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 20:17	aeb
Potassium, dissolved	M200.7 ICP	10	4	B	*	mg/L	2	10	03/15/17 20:17	aeb
Selenium, dissolved	M200.8 ICP-MS	10	0.003		*	mg/L	0.001	0.003	03/20/17 17:39	mfm
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 20:17	aeb
Sodium, dissolved	M200.7 ICP	10	7970		*	mg/L	2	10	03/15/17 20:17	aeb
Strontium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 20:17	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0301		*	mg/L	0.0001	0.0005	03/13/17 23:30	enb
Vanadium, dissolved	M200.7 ICP	10	0.08	B	*	mg/L	0.05	0.3	03/15/17 20:17	aeb
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 20:17	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 479-480 STEP 3

ACZ Sample ID: ***L35953-03***
Date Sampled: *08/29/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.0337		*	mg/L	0.0002	0.001	03/13/17 23:33	enb
Barium, dissolved	M200.7 ICP	1	0.030		*	mg/L	0.003	0.02	03/15/17 20:20	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0005	03/13/17 23:33	enb
Calcium, dissolved	M200.7 ICP	1	7.5		*	mg/L	0.1	0.5	03/15/17 20:20	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.114		*	mg/L	0.0005	0.002	03/13/17 23:33	enb
Copper, dissolved	M200.7 ICP	1	0.05		*	mg/L	0.01	0.05	03/15/17 20:20	aeb
Iron, dissolved	M200.7 ICP	1	66.5		*	mg/L	0.02	0.05	03/15/17 20:20	aeb
Magnesium, dissolved	M200.7 ICP	1	15.8		*	mg/L	0.2	1	03/15/17 20:20	aeb
Manganese, dissolved	M200.7 ICP	1	0.304		*	mg/L	0.005	0.03	03/15/17 20:20	aeb
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	03/15/17 20:20	aeb
Nickel, dissolved	M200.7 ICP	1	0.092		*	mg/L	0.008	0.04	03/15/17 20:20	aeb
Potassium, dissolved	M200.7 ICP	1	1.5		*	mg/L	0.2	1	03/15/17 20:20	aeb
Selenium, dissolved	M200.8 ICP-MS	10		U	*	mg/L	0.001	0.003	03/20/17 17:42	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	03/15/17 20:20	aeb
Sodium, dissolved	M200.7 ICP	1	76.5		*	mg/L	0.2	1	03/15/17 20:20	aeb
Strontium, dissolved	M200.7 ICP	1	0.018	B	*	mg/L	0.005	0.03	03/15/17 20:20	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.0399		*	mg/L	0.0001	0.0005	03/13/17 23:33	enb
Vanadium, dissolved	M200.7 ICP	1	0.292		*	mg/L	0.005	0.03	03/15/17 20:20	aeb
Zinc, dissolved	M200.7 ICP	1	0.24		*	mg/L	0.01	0.05	03/15/17 20:20	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 479-480 STEP 4

ACZ Sample ID: ***L35953-04***
Date Sampled: *08/29/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	5	0.207		*	mg/L	0.001	0.005	03/13/17 23:36	enb
Barium, dissolved	M200.7 ICP	10	0.04	B	*	mg/L	0.03	0.2	03/15/17 20:30	aeb
Cadmium, dissolved	M200.8 ICP-MS	5	0.0007	B	*	mg/L	0.0005	0.003	03/13/17 23:36	enb
Calcium, dissolved	M200.7 ICP	10	1	B	*	mg/L	1	5	03/15/17 20:30	aeb
Chromium, dissolved	M200.8 ICP-MS	5	0.120		*	mg/L	0.003	0.01	03/13/17 23:36	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 20:30	aeb
Iron, dissolved	M200.7 ICP	10	84.1		*	mg/L	0.2	0.5	03/15/17 20:30	aeb
Magnesium, dissolved	M200.7 ICP	10	7	B	*	mg/L	2	10	03/15/17 20:30	aeb
Manganese, dissolved	M200.7 ICP	10	0.32		*	mg/L	0.05	0.3	03/15/17 20:30	aeb
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 20:30	aeb
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 20:30	aeb
Potassium, dissolved	M200.7 ICP	10	3	B	*	mg/L	2	10	03/15/17 20:30	aeb
Selenium, dissolved	M200.8 ICP-MS	20		U	*	mg/L	0.002	0.005	03/21/17 18:54	mfm
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 20:30	aeb
Sodium, dissolved	M200.7 ICP	10	3	B	*	mg/L	2	10	03/15/17 20:30	aeb
Strontium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 20:30	aeb
Uranium, dissolved	M200.8 ICP-MS	5	0.0129		*	mg/L	0.0005	0.003	03/13/17 23:36	enb
Vanadium, dissolved	M200.7 ICP	10	0.18	B	*	mg/L	0.05	0.3	03/15/17 20:30	aeb
Zinc, dissolved	M200.7 ICP	10	0.1	B	*	mg/L	0.1	0.5	03/15/17 20:30	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 479-480 STEP 5

ACZ Sample ID: ***L35953-05***
Date Sampled: *08/29/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.015		*	mg/L	0.002	0.01	03/13/17 23:45	enb
Barium, dissolved	M200.7 ICP	5	0.03	B	*	mg/L	0.02	0.08	03/15/17 20:33	aeb
Cadmium, dissolved	M200.8 ICP-MS	10		U	*	mg/L	0.001	0.005	03/13/17 23:45	enb
Calcium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	03/15/17 20:33	aeb
Chromium, dissolved	M200.8 ICP-MS	10	0.025		*	mg/L	0.005	0.02	03/13/17 23:45	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 20:33	aeb
Iron, dissolved	M200.7 ICP	5	15.1		*	mg/L	0.1	0.3	03/15/17 20:33	aeb
Magnesium, dissolved	M200.7 ICP	5	4	B	*	mg/L	1	5	03/15/17 20:33	aeb
Manganese, dissolved	M200.7 ICP	5	0.04	B	*	mg/L	0.03	0.1	03/15/17 20:33	aeb
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 20:33	aeb
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/15/17 20:33	aeb
Potassium, dissolved	M200.7 ICP	5	4430		*	mg/L	1	5	03/15/17 20:33	aeb
Selenium, dissolved	M200.8 ICP-MS	10	0.053		*	mg/L	0.001	0.003	03/20/17 17:48	mfm
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/15/17 20:33	aeb
Sodium, dissolved	M200.7 ICP	5	1	B	*	mg/L	1	5	03/15/17 20:33	aeb
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 20:33	aeb
Uranium, dissolved	M200.8 ICP-MS	10	0.022		*	mg/L	0.001	0.005	03/13/17 23:45	enb
Vanadium, dissolved	M200.7 ICP	5	0.03	B	*	mg/L	0.03	0.1	03/15/17 20:33	aeb
Zinc, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 20:33	aeb

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35953***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05098	mg/L	102	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0006	0.0006			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.0501		.05102	mg/L	102	85	115			
L35953-01AS	AS	03/13/17 23:23	MS170220-2	.2505	.012	.285	mg/L	109	70	130			
L35953-01ASD	ASD	03/13/17 23:26	MS170220-2	.2505	.012	.2705	mg/L	103	70	130	5	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9518	mg/L	98	95	105			
WG419466ICB	ICB	03/15/17 19:12				.003	mg/L		-0.009	0.009			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5005		.5082	mg/L	102	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.5005	.03	.5254	mg/L	99	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.5005	.03	.5206	mg/L	98	85	115	1	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05072	mg/L	101	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0003	0.0003			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05005		.04959	mg/L	99	85	115			
L35953-01AS	AS	03/13/17 23:23	MS170220-2	.25025	U	.24615	mg/L	98	70	130			
L35953-01ASD	ASD	03/13/17 23:26	MS170220-2	.25025	U	.23175	mg/L	93	70	130	6	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	100		96.65	mg/L	97	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.3	0.3			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	67.99026		68.31	mg/L	100	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	67.99026	7.5	74.78	mg/L	99	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	67.99026	7.5	74.82	mg/L	99	85	115	0	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05078	mg/L	102	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0015	0.0015			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05		.05024	mg/L	100	85	115			
L35953-01AS	AS	03/13/17 23:23	MS170220-2	.25	U	.2293	mg/L	92	70	130			
L35953-01ASD	ASD	03/13/17 23:26	MS170220-2	.25	U	.2206	mg/L	88	70	130	4	20	

CAMECO Resources

ACZ Project ID: ***L35953***

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.966	mg/L	98	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.03	0.03			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5005		.499	mg/L	100	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.5005	.05	.527	mg/L	95	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.5005	.05	.527	mg/L	95	85	115	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.946	mg/L	97	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.06	0.06			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	1.0017		1.029	mg/L	103	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	1.0017	66.5	64.7	mg/L	-180	85	115			M3
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	1.0017	66.5	64.5	mg/L	-200	85	115	0	20	M3

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	100		97.82	mg/L	98	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.6	0.6			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	50.00074		46.21	mg/L	92	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	50.00074	15.8	61.07	mg/L	91	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	50.00074	15.8	61.09	mg/L	91	85	115	0	20	

Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9145	mg/L	96	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.015	0.015			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5		.5137	mg/L	103	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.5	.304	.7926	mg/L	98	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.5	.304	.7893	mg/L	97	85	115	0	20	

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		2.005	mg/L	100	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.06	0.06			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.4995		.516	mg/L	103	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.4995	U	.499	mg/L	100	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.4995	U	.499	mg/L	100	85	115	0	20	

CAMECO Resources

ACZ Project ID: ***L35953***

Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2.002		1.9735	mg/L	99	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.024	0.024			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.498		.4995	mg/L	100	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.498	.092	.5749	mg/L	97	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.498	.092	.5771	mg/L	97	85	115	0	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	20		19.41	mg/L	97	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.6	0.6			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	99.96532		97.98	mg/L	98	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	99.96532	1.5	98.05	mg/L	97	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	99.96532	1.5	97.17	mg/L	96	85	115	1	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419694													
WG419694ICV	ICV	03/20/17 16:43	MS170301-3	.05		.05242	mg/L	105	90	110			
WG419694ICB	ICB	03/20/17 16:46				.0002	mg/L		-0.0003	0.0003			
WG419694LFB	LFB	03/20/17 16:49	MS170220-2	.05005		.04986	mg/L	100	85	115			
L35954-02AS	AS	03/20/17 18:13	MS170220-2	.5005	.004	.4567	mg/L	90	70	130			
L35954-02ASD	ASD	03/20/17 18:16	MS170220-2	.5005	.004	.4328	mg/L	86	70	130	5	20	
WG419791													
WG419791ICV	ICV	03/21/17 17:24	MS170301-3	.05		.05221	mg/L	104	90	110			
WG419791ICB	ICB	03/21/17 17:27				U	mg/L		-0.0003	0.0003			
WG419791LFB	LFB	03/21/17 17:30	MS170321-3	.05005		.05083	mg/L	102	85	115			
L36005-01AS	AS	03/21/17 17:46	MS170321-3	.1001	U	.1085	mg/L	108	70	130			
L36005-01ASD	ASD	03/21/17 17:49	MS170321-3	.1001	U	.10652	mg/L	106	70	130	2	20	

Silver, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	1.002		1.01	mg/L	101	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.03	0.03			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.501		.511	mg/L	102	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.501	U	.421	mg/L	84	85	115			MA ZA
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.501	U	.45	mg/L	90	85	115	7	20	

CAMECO Resources

ACZ Project ID: ***L35953***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	100		98.62	mg/L	99	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.6	0.6			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	100.0322		99.5	mg/L	99	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	100.0322	76.5	171.4	mg/L	95	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	100.0322	76.5	167.2	mg/L	91	85	115	2	20	
WG419501													
WG419501ICV	ICV	03/16/17 13:00	II170222-1	100		101.1	mg/L	101	95	105			
WG419501ICB	ICB	03/16/17 13:06				U	mg/L		-0.6	0.6			
WG419501LFB	LFB	03/16/17 13:19	II170220-2	100.0322		97.81	mg/L	98	85	115			
L35949-01AS	AS	03/16/17 13:26	II170220-2	2000.644	15100	17088	mg/L	99	85	115			
L35949-01ASD	ASD	03/16/17 13:29	II170220-2	2000.644	15100	17362	mg/L	113	85	115	2	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9852	mg/L	99	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.015	0.015			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5015		.5092	mg/L	102	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.5015	.018	.5147	mg/L	99	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.5015	.018	.5107	mg/L	98	85	115	1	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.04873	mg/L	97	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0003	0.0003			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05		.04885	mg/L	98	85	115			
L35953-01AS	AS	03/13/17 23:23	MS170220-2	.25	.0199	.23905	mg/L	88	70	130			
L35953-01ASD	ASD	03/13/17 23:26	MS170220-2	.25	.0199	.22655	mg/L	83	70	130	5	20	

Vanadium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9947	mg/L	100	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.015	0.015			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.4985		.5119	mg/L	103	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.4985	.292	.7782	mg/L	98	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.4985	.292	.7734	mg/L	97	85	115	1	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.991	mg/L	100	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.03	0.03			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.4942		.525	mg/L	106	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.4942	.24	.754	mg/L	104	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.4942	.24	.751	mg/L	103	85	115	0	20	

CAMECO Resources ACZ Project ID: ***L35953***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35953-01	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Cadmium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
		Chromium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
	WG419466	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG419339	Uranium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG419466	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35953-02	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Uranium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG419466	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

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Inorganic Extended Qualifier Report

CAMECO Resources ACZ Project ID: ***L35953***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35953-03	WG419466	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419694	Selenium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
	WG419466	Silver, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG419339	Uranium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
L35953-04	WG419339	Arsenic, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Chromium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419791	Selenium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG419466	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Uranium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
			M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

CAMECO Resources ACZ Project ID: ***L35953***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35953-05	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419466	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 479-480 STEP 1
Locator:

ACZ Sample ID: ***L35953-01***
Date Sampled: *08/29/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:17		130	2.7	1.1	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 479-480 STEP 2
Locator:

ACZ Sample ID: ***L35953-02***
Date Sampled: *08/29/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:18		9.7	0.79	0.54	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 479-480 STEP 3
Locator:

ACZ Sample ID: ***L35953-03***
Date Sampled: *08/29/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:20		25	1.7	1.2	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 479-480 STEP 4
Locator:

ACZ Sample ID: ***L35953-04***
Date Sampled: *08/29/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:21		7.7	0.7	0.48	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 479-480 STEP 5
Locator:

ACZ Sample ID: ***L35953-05***
Date Sampled: *08/29/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:23		1.3	0.3	0.54	pCi/L	*	tjr

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

Radiochemistry QC Summary

CAMECO Resources

ACZ Project ID: ***L35953***

Radium 226 M903.1 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
WG421702																
WG420753PBW	PBW	04/24/17						.07	0.07	0.38			0.76			
WG420753LCSW	LCSW	04/24/17	PCN52689	20				22	0.58	0.12	110	43	148			
L35729-02DUP	DUP-RER	04/24/17			0.96	0.13	0.05	.52	0.1	0.06				2.68	2	RM
L35729-03DUP	DUP-RER	04/24/17			0.34	0.09	0.04	.33	0.1	0.11				0.07	2	
L35729-04MS	MS	04/24/17	PCN52689	20	0.39	0.11	0.05	20	0.58	0.06	98	43	148			

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RadChem Extended Qualifier Report

CAMECO Resources

ACZ Project ID: ***L35953***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35953-01	*N*G421702	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
L35953-02	*N*G421702	Radium 226	M903.1	DF	Sample required dilution due to high sediment.
			M903.1	H3	Sample was received and analyzed past holding time.
L35953-03	*N*G421702	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
L35953-04	*N*G421702	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
L35953-05	*N*G421702	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

Radiochemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Radium 226	M903.1
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Radium 226	M903.1

ACZ Laboratories, Inc.
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Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35953
Date Received: 03/13/2017 09:38
Received By:
Date Printed: 3/13/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
UNKNOWN		NA		

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35953
Date Received: 03/13/2017 09:38
Received By:
Date Printed: 3/13/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 28, 2017

Report to:
Jim Clay
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

cc: Janet Schramke

Bill to:
Mary Anne Valentine
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

Project ID: 4500546123
ACZ Project ID: L35954

Jim Clay:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 13, 2017. This project has been assigned to ACZ's project number, L35954. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L35954. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 28, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

CAMECO Resources

April 28, 2017

Project ID: 4500546123
ACZ Project ID: L35954

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 miscellaneous samples from CAMECO Resources on March 13, 2017. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L35954. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. This project is a client requested sequential leaching process. The reagents and protocols utilized come from the 'Trace metal occurrence in a mineralised and a non-mineralised spodosol in Northern Sweden', Land and others. Published in the Journal of Geochemical Exploration 75 (2002) 71-91.

2. (N1) Sample run 3+ times on various dilutions, with CCV or ISTD failures for Selenium. Pass data with CCV recovery outside of method limits.

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 488-489 STEP 1

ACZ Sample ID: ***L35954-01***
Date Sampled: *08/30/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.0045		*	mg/L	0.0002	0.001	03/13/17 23:49	enb
Barium, dissolved	M200.7 ICP	10	0.19	B	*	mg/L	0.03	0.2	03/15/17 20:42	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	03/13/17 23:49	enb
Calcium, dissolved	M200.7 ICP	10	37		*	mg/L	1	5	03/15/17 20:42	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0024		*	mg/L	0.0005	0.002	03/13/17 23:49	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 20:42	aeb
Iron, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	0.5	03/15/17 20:42	aeb
Magnesium, dissolved	M200.7 ICP	10	9	B	*	mg/L	2	10	03/15/17 20:42	aeb
Manganese, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 20:42	aeb
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 20:42	aeb
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 20:42	aeb
Potassium, dissolved	M200.7 ICP	10	12		*	mg/L	2	10	03/15/17 20:42	aeb
Selenium, dissolved	M200.8 ICP-MS	10	0.028		*	mg/L	0.001	0.003	03/20/17 17:51	mfm
Silver, dissolved	M200.7 ICP	10	0.2	B	*	mg/L	0.1	0.3	03/15/17 20:42	aeb
Sodium, dissolved	M200.7 ICP	20	14700		*	mg/L	4	20	03/16/17 13:42	aeb
Strontium, dissolved	M200.7 ICP	10	0.37		*	mg/L	0.05	0.3	03/15/17 20:42	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.761		*	mg/L	0.0001	0.0005	03/13/17 23:49	enb
Vanadium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 20:42	aeb
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 20:42	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 488-489 STEP 2

ACZ Sample ID: ***L35954-02***
Date Sampled: *08/30/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.011		*	mg/L	0.0002	0.001	03/13/17 23:52	enb
Barium, dissolved	M200.7 ICP	10	0.05	B	*	mg/L	0.03	0.2	03/15/17 20:46	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0005		*	mg/L	0.0001	0.0005	03/13/17 23:52	enb
Calcium, dissolved	M200.7 ICP	10		U	*	mg/L	1	5	03/15/17 20:46	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.0091		*	mg/L	0.0005	0.002	03/13/17 23:52	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 20:46	aeb
Iron, dissolved	M200.7 ICP	10	2.0		*	mg/L	0.2	0.5	03/15/17 20:46	aeb
Magnesium, dissolved	M200.7 ICP	10		U	*	mg/L	2	10	03/15/17 20:46	aeb
Manganese, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 20:46	aeb
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 20:46	aeb
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 20:46	aeb
Potassium, dissolved	M200.7 ICP	10	5	B	*	mg/L	2	10	03/15/17 20:46	aeb
Selenium, dissolved	M200.8 ICP-MS	10	0.004		*	mg/L	0.001	0.003	03/20/17 18:10	mfm
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 20:46	aeb
Sodium, dissolved	M200.7 ICP	10	8060		*	mg/L	2	10	03/15/17 20:46	aeb
Strontium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 20:46	aeb
Uranium, dissolved	M200.8 ICP-MS	1	1.29		*	mg/L	0.0001	0.0005	03/13/17 23:52	enb
Vanadium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 20:46	aeb
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 20:46	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 488-489 STEP 3

ACZ Sample ID: ***L35954-03***
Date Sampled: *08/30/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.0258		*	mg/L	0.0002	0.001	03/13/17 23:55	enb
Barium, dissolved	M200.7 ICP	1	0.155		*	mg/L	0.003	0.02	03/15/17 20:49	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0011		*	mg/L	0.0001	0.0005	03/13/17 23:55	enb
Calcium, dissolved	M200.7 ICP	1	9.3		*	mg/L	0.1	0.5	03/15/17 20:49	aeb
Chromium, dissolved	M200.8 ICP-MS	1	0.086		*	mg/L	0.0005	0.002	03/13/17 23:55	enb
Copper, dissolved	M200.7 ICP	1	0.08		*	mg/L	0.01	0.05	03/15/17 20:49	aeb
Iron, dissolved	M200.7 ICP	1	84.4		*	mg/L	0.02	0.05	03/15/17 20:49	aeb
Magnesium, dissolved	M200.7 ICP	1	17.0		*	mg/L	0.2	1	03/15/17 20:49	aeb
Manganese, dissolved	M200.7 ICP	1	0.325		*	mg/L	0.005	0.03	03/15/17 20:49	aeb
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	03/15/17 20:49	aeb
Nickel, dissolved	M200.7 ICP	1	0.085		*	mg/L	0.008	0.04	03/15/17 20:49	aeb
Potassium, dissolved	M200.7 ICP	1	2.6		*	mg/L	0.2	1	03/15/17 20:49	aeb
Selenium, dissolved	M200.8 ICP-MS	10	0.003		*	mg/L	0.001	0.003	03/20/17 18:19	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	03/15/17 20:49	aeb
Sodium, dissolved	M200.7 ICP	1	75.1		*	mg/L	0.2	1	03/15/17 20:49	aeb
Strontium, dissolved	M200.7 ICP	1	0.025	B	*	mg/L	0.005	0.03	03/15/17 20:49	aeb
Uranium, dissolved	M200.8 ICP-MS	1	0.988		*	mg/L	0.0001	0.0005	03/13/17 23:55	enb
Vanadium, dissolved	M200.7 ICP	1	0.077		*	mg/L	0.005	0.03	03/15/17 20:49	aeb
Zinc, dissolved	M200.7 ICP	1	0.29		*	mg/L	0.01	0.05	03/15/17 20:49	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 488-489 STEP 4

ACZ Sample ID: ***L35954-04***
Date Sampled: *08/30/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	5	0.012		*	mg/L	0.001	0.005	03/13/17 23:58	enb
Barium, dissolved	M200.7 ICP	10	0.06	B	*	mg/L	0.03	0.2	03/15/17 20:52	aeb
Cadmium, dissolved	M200.8 ICP-MS	5	0.0005	B	*	mg/L	0.0005	0.003	03/13/17 23:58	enb
Calcium, dissolved	M200.7 ICP	10	1	B	*	mg/L	1	5	03/15/17 20:52	aeb
Chromium, dissolved	M200.8 ICP-MS	5	0.080		*	mg/L	0.003	0.01	03/13/17 23:58	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 20:52	aeb
Iron, dissolved	M200.7 ICP	10	22.1		*	mg/L	0.2	0.5	03/15/17 20:52	aeb
Magnesium, dissolved	M200.7 ICP	10	8	B	*	mg/L	2	10	03/15/17 20:52	aeb
Manganese, dissolved	M200.7 ICP	10	0.15	B	*	mg/L	0.05	0.3	03/15/17 20:52	aeb
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 20:52	aeb
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 20:52	aeb
Potassium, dissolved	M200.7 ICP	10	3	B	*	mg/L	2	10	03/15/17 20:52	aeb
Selenium, dissolved	M200.8 ICP-MS	20	0.003	B	*	mg/L	0.002	0.005	03/21/17 18:57	mfm
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 20:52	aeb
Sodium, dissolved	M200.7 ICP	10	4	B	*	mg/L	2	10	03/15/17 20:52	aeb
Strontium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 20:52	aeb
Uranium, dissolved	M200.8 ICP-MS	5	0.157		*	mg/L	0.0005	0.003	03/13/17 23:58	enb
Vanadium, dissolved	M200.7 ICP	10	0.05	B	*	mg/L	0.05	0.3	03/15/17 20:52	aeb
Zinc, dissolved	M200.7 ICP	10	0.1	B	*	mg/L	0.1	0.5	03/15/17 20:52	aeb

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 488-489 STEP 5

ACZ Sample ID: ***L35954-05***
Date Sampled: *08/30/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.016		*	mg/L	0.002	0.01	03/14/17 0:01	enb
Barium, dissolved	M200.7 ICP	5	0.03	B	*	mg/L	0.02	0.08	03/15/17 20:55	aeb
Cadmium, dissolved	M200.8 ICP-MS	10		U	*	mg/L	0.001	0.005	03/14/17 0:01	enb
Calcium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	03/15/17 20:55	aeb
Chromium, dissolved	M200.8 ICP-MS	10	0.023		*	mg/L	0.005	0.02	03/14/17 0:01	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 20:55	aeb
Iron, dissolved	M200.7 ICP	5	15.1		*	mg/L	0.1	0.3	03/15/17 20:55	aeb
Magnesium, dissolved	M200.7 ICP	5	3	B	*	mg/L	1	5	03/15/17 20:55	aeb
Manganese, dissolved	M200.7 ICP	5	0.04	B	*	mg/L	0.03	0.1	03/15/17 20:55	aeb
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 20:55	aeb
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/15/17 20:55	aeb
Potassium, dissolved	M200.7 ICP	5	4540		*	mg/L	1	5	03/15/17 20:55	aeb
Selenium, dissolved	M200.8 ICP-MS	10	0.017		*	mg/L	0.001	0.003	03/20/17 18:25	mfm
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/15/17 20:55	aeb
Sodium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/15/17 20:55	aeb
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 20:55	aeb
Uranium, dissolved	M200.8 ICP-MS	10	0.078		*	mg/L	0.001	0.005	03/14/17 0:01	enb
Vanadium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 20:55	aeb
Zinc, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 20:55	aeb

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35954***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05098	mg/L	102	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0006	0.0006			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.0501		.05102	mg/L	102	85	115			
L35953-01AS	AS	03/13/17 23:23	MS170220-2	.2505	.012	.285	mg/L	109	70	130			
L35953-01ASD	ASD	03/13/17 23:26	MS170220-2	.2505	.012	.2705	mg/L	103	70	130	5	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9518	mg/L	98	95	105			
WG419466ICB	ICB	03/15/17 19:12				.003	mg/L		-0.009	0.009			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5005		.5082	mg/L	102	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.5005	.03	.5254	mg/L	99	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.5005	.03	.5206	mg/L	98	85	115	1	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05072	mg/L	101	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0003	0.0003			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05005		.04959	mg/L	99	85	115			
L35953-01AS	AS	03/13/17 23:23	MS170220-2	.25025	U	.24615	mg/L	98	70	130			
L35953-01ASD	ASD	03/13/17 23:26	MS170220-2	.25025	U	.23175	mg/L	93	70	130	6	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	100		96.65	mg/L	97	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.3	0.3			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	67.99026		68.31	mg/L	100	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	67.99026	7.5	74.78	mg/L	99	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	67.99026	7.5	74.82	mg/L	99	85	115	0	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.05078	mg/L	102	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0015	0.0015			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05		.05024	mg/L	100	85	115			
L35953-01AS	AS	03/13/17 23:23	MS170220-2	.25	U	.2293	mg/L	92	70	130			
L35953-01ASD	ASD	03/13/17 23:26	MS170220-2	.25	U	.2206	mg/L	88	70	130	4	20	

CAMECO Resources

ACZ Project ID: ***L35954***

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.966	mg/L	98	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.03	0.03			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5005		.499	mg/L	100	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.5005	.05	.527	mg/L	95	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.5005	.05	.527	mg/L	95	85	115	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.946	mg/L	97	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.06	0.06			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	1.0017		1.029	mg/L	103	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	1.0017	66.5	64.7	mg/L	-180	85	115			M3
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	1.0017	66.5	64.5	mg/L	-200	85	115	0	20	M3

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	100		97.82	mg/L	98	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.6	0.6			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	50.00074		46.21	mg/L	92	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	50.00074	15.8	61.07	mg/L	91	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	50.00074	15.8	61.09	mg/L	91	85	115	0	20	

Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9145	mg/L	96	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.015	0.015			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5		.5137	mg/L	103	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.5	.304	.7926	mg/L	98	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.5	.304	.7893	mg/L	97	85	115	0	20	

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		2.005	mg/L	100	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.06	0.06			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.4995		.516	mg/L	103	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.4995	U	.499	mg/L	100	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.4995	U	.499	mg/L	100	85	115	0	20	

CAMECO Resources

ACZ Project ID: ***L35954***

Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2.002		1.9735	mg/L	99	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.024	0.024			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.498		.4995	mg/L	100	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.498	.092	.5749	mg/L	97	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.498	.092	.5771	mg/L	97	85	115	0	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	20		19.41	mg/L	97	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.6	0.6			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	99.96532		97.98	mg/L	98	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	99.96532	1.5	98.05	mg/L	97	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	99.96532	1.5	97.17	mg/L	96	85	115	1	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419694													
WG419694ICV	ICV	03/20/17 16:43	MS170301-3	.05		.05242	mg/L	105	90	110			
WG419694ICB	ICB	03/20/17 16:46				.0002	mg/L		-0.0003	0.0003			
WG419694LFB	LFB	03/20/17 16:49	MS170220-2	.05005		.04986	mg/L	100	85	115			
L35954-02AS	AS	03/20/17 18:13	MS170220-2	.5005	.004	.4567	mg/L	90	70	130			
L35954-02ASD	ASD	03/20/17 18:16	MS170220-2	.5005	.004	.4328	mg/L	86	70	130	5	20	
WG419791													
WG419791ICV	ICV	03/21/17 17:24	MS170301-3	.05		.05221	mg/L	104	90	110			
WG419791ICB	ICB	03/21/17 17:27				U	mg/L		-0.0003	0.0003			
WG419791LFB	LFB	03/21/17 17:30	MS170321-3	.05005		.05083	mg/L	102	85	115			
L36005-01AS	AS	03/21/17 17:46	MS170321-3	.1001	U	.1085	mg/L	108	70	130			
L36005-01ASD	ASD	03/21/17 17:49	MS170321-3	.1001	U	.10652	mg/L	106	70	130	2	20	

Silver, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	1.002		1.01	mg/L	101	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.03	0.03			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.501		.511	mg/L	102	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.501	U	.421	mg/L	84	85	115			MA ZA
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.501	U	.45	mg/L	90	85	115	7	20	

CAMECO Resources

ACZ Project ID: ***L35954***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	100		98.62	mg/L	99	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.6	0.6			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	100.0322		99.5	mg/L	99	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	100.0322	76.5	171.4	mg/L	95	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	100.0322	76.5	167.2	mg/L	91	85	115	2	20	
WG419501													
WG419501ICV	ICV	03/16/17 13:00	II170222-1	100		101.1	mg/L	101	95	105			
WG419501ICB	ICB	03/16/17 13:06				U	mg/L		-0.6	0.6			
WG419501LFB	LFB	03/16/17 13:19	II170220-2	100.0322		97.81	mg/L	98	85	115			
L35949-01AS	AS	03/16/17 13:26	II170220-2	2000.644	15100	17088	mg/L	99	85	115			
L35949-01ASD	ASD	03/16/17 13:29	II170220-2	2000.644	15100	17362	mg/L	113	85	115	2	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9852	mg/L	99	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.015	0.015			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.5015		.5092	mg/L	102	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.5015	.018	.5147	mg/L	99	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.5015	.018	.5107	mg/L	98	85	115	1	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419339													
WG419339ICV	ICV	03/13/17 22:25	MS170301-3	.05		.04873	mg/L	97	90	110			
WG419339ICB	ICB	03/13/17 22:29				U	mg/L		-0.0003	0.0003			
WG419339LFB	LFB	03/13/17 22:32	MS170220-2	.05		.04885	mg/L	98	85	115			
L35953-01AS	AS	03/13/17 23:23	MS170220-2	.25	.0199	.23905	mg/L	88	70	130			
L35953-01ASD	ASD	03/13/17 23:26	MS170220-2	.25	.0199	.22655	mg/L	83	70	130	5	20	

Vanadium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.9947	mg/L	100	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.015	0.015			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.4985		.5119	mg/L	103	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.4985	.292	.7782	mg/L	98	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.4985	.292	.7734	mg/L	97	85	115	1	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419466													
WG419466ICV	ICV	03/15/17 19:06	II170222-1	2		1.991	mg/L	100	95	105			
WG419466ICB	ICB	03/15/17 19:12				U	mg/L		-0.03	0.03			
WG419466LFB	LFB	03/15/17 19:25	II170220-2	.4942		.525	mg/L	106	85	115			
L35953-03AS	AS	03/15/17 20:23	II170220-2	.4942	.24	.754	mg/L	104	85	115			
L35953-03ASD	ASD	03/15/17 20:26	II170220-2	.4942	.24	.751	mg/L	103	85	115	0	20	

CAMECO Resources ACZ Project ID: ***L35954***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35954-01	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35954-02	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35954-03	WG419466	Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Silver, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.

CAMECO Resources ACZ Project ID: ***L35954***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35954-04	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419791	Selenium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	N1	See Case Narrative.
	WG419466	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Uranium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419466	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35954-05	WG419466	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419339	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419466	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 488-489 STEP 1
Locator:

ACZ Sample ID: ***L35954-01***
Date Sampled: *08/30/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:24		2800	13	0.52	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 488-489 STEP 2
Locator:

ACZ Sample ID: ***L35954-02***
Date Sampled: *08/30/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:25		280	2.3	0.15	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 488-489 STEP 3
Locator:

ACZ Sample ID: ***L35954-03***
Date Sampled: *08/30/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:27		920	9.1	0.69	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 488-489 STEP 4
Locator:

ACZ Sample ID: ***L35954-04***
Date Sampled: *08/30/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:28		220	3.9	0.48	pCi/L	*	tjr

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-4 1 OF 2 488-489 STEP 5
Locator:

ACZ Sample ID: ***L35954-05***
Date Sampled: *08/30/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/24/17 0:30		39	1.5	1.1	pCi/L	*	tjr

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35954***

Radium 226 M903.1 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
WG421702																
WG420753PBW	PBW	04/24/17						.07	0.07	0.38			0.76			
WG420753LCSW	LCSW	04/24/17	PCN52689	20				22	0.58	0.12	110	43	148			
L35729-02DUP	DUP-RER	04/24/17			0.96	0.13	0.05	.52	0.1	0.06				2.68	2	RM
L35729-03DUP	DUP-RER	04/24/17			0.34	0.09	0.04	.33	0.1	0.11				0.07	2	
L35729-04MS	MS	04/24/17	PCN52689	20	0.39	0.11	0.05	20	0.58	0.06	98	43	148			

ACZ Laboratories, Inc.
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RadChem Extended Qualifier Report

CAMECO Resources

ACZ Project ID: ***L35954***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35954-01	*N*G421702	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
L35954-02	*N*G421702	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
L35954-03	*N*G421702	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
L35954-04	*N*G421702	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
L35954-05	*N*G421702	Radium 226	M903.1	DF	Sample required dilution due to high sediment.
			M903.1	H3	Sample was received and analyzed past holding time.

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

Radiochemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Radium 226	M903.1
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Radium 226	M903.1

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35954
Date Received: 03/13/2017 09:42
Received By:
Date Printed: 3/13/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
UNKNOWN		NA		

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35954
Date Received: 03/13/2017 09:42
Received By:
Date Printed: 3/13/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 28, 2017

Report to:
Jim Clay
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

cc: Janet Schramke

Bill to:
Mary Anne Valentine
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

Project ID: 4500546123
ACZ Project ID: L35955

Jim Clay:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 13, 2017. This project has been assigned to ACZ's project number, L35955. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L35955. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 28, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

CAMECO Resources

April 28, 2017

Project ID: 4500546123
ACZ Project ID: L35955

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 miscellaneous samples from CAMECO Resources on March 13, 2017. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L35955. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. This project is a client requested sequential leaching process. The reagents and protocols utilized come from the 'Trace metal occurrence in a mineralised and a non-mineralised spodosol in Northern Sweden', Land and others. Published in the Journal of Geochemical Exploration 75 (2002) 71-91.

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 494-495 STEP 1

ACZ Sample ID: ***L35955-01***
Date Sampled: *08/23/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.0769		*	mg/L	0.0002	0.001	03/13/17 21:12	enb
Barium, dissolved	M200.7 ICP	20	0.08	B	*	mg/L	0.06	0.3	03/15/17 18:01	gss
Cadmium, dissolved	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	03/13/17 21:12	enb
Calcium, dissolved	M200.7 ICP	20	41		*	mg/L	2	10	03/15/17 18:01	gss
Chromium, dissolved	M200.8 ICP-MS	1	0.0019	B	*	mg/L	0.0005	0.002	03/13/17 21:12	enb
Copper, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	1	03/15/17 18:01	gss
Iron, dissolved	M200.7 ICP	20	1.6		*	mg/L	0.4	1	03/15/17 18:01	gss
Magnesium, dissolved	M200.7 ICP	20	10	B	*	mg/L	4	20	03/15/17 18:01	gss
Manganese, dissolved	M200.7 ICP	20		U	*	mg/L	0.1	0.5	03/15/17 18:01	gss
Molybdenum, dissolved	M200.7 ICP	20		U	*	mg/L	0.4	2	03/15/17 18:01	gss
Nickel, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	0.8	03/15/17 18:01	gss
Potassium, dissolved	M200.7 ICP	20	19	B	*	mg/L	4	20	03/15/17 18:01	gss
Selenium, dissolved	M200.8 ICP-MS	1	0.0312		*	mg/L	0.0001	0.0003	03/13/17 21:12	enb
Silver, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	0.5	03/15/17 18:01	gss
Sodium, dissolved	M200.7 ICP	20	14500		*	mg/L	4	20	03/15/17 18:01	gss
Strontium, dissolved	M200.7 ICP	20	0.4	B	*	mg/L	0.1	0.5	03/15/17 18:01	gss
Uranium, dissolved	M200.8 ICP-MS	1	0.362		*	mg/L	0.0001	0.0005	03/13/17 21:12	enb
Vanadium, dissolved	M200.7 ICP	20		U	*	mg/L	0.1	0.5	03/15/17 18:01	gss
Zinc, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	1	03/15/17 18:01	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 494-495 STEP 2

ACZ Sample ID: ***L35955-02***
Date Sampled: *08/23/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.527		*	mg/L	0.002	0.01	03/13/17 21:22	enb
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/15/17 11:42	gss
Cadmium, dissolved	M200.8 ICP-MS	10		U	*	mg/L	0.001	0.005	03/13/17 21:22	enb
Calcium, dissolved	M200.7 ICP	5	0.7	B	*	mg/L	0.5	3	03/15/17 11:42	gss
Chromium, dissolved	M200.8 ICP-MS	10	0.006	B	*	mg/L	0.005	0.02	03/13/17 21:22	enb
Copper, dissolved	M200.7 ICP	5	0.09	B	*	mg/L	0.05	0.3	03/15/17 11:42	gss
Iron, dissolved	M200.7 ICP	5	8.9		*	mg/L	0.1	0.3	03/15/17 11:42	gss
Magnesium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/15/17 11:42	gss
Manganese, dissolved	M200.7 ICP	5	0.05	B	*	mg/L	0.03	0.1	03/15/17 11:42	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 11:42	gss
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/15/17 11:42	gss
Potassium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/15/17 11:42	gss
Selenium, dissolved	M200.8 ICP-MS	10	0.023		*	mg/L	0.001	0.003	03/13/17 21:22	enb
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 18:04	gss
Sodium, dissolved	M200.7 ICP	10	7510		*	mg/L	2	10	03/15/17 18:04	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:42	gss
Uranium, dissolved	M200.8 ICP-MS	10	0.842		*	mg/L	0.001	0.005	03/13/17 21:22	enb
Vanadium, dissolved	M200.7 ICP	5	0.54		*	mg/L	0.03	0.1	03/15/17 11:42	gss
Zinc, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 11:42	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 494-495 STEP 3

ACZ Sample ID: ***L35955-03***
Date Sampled: *08/23/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.125		*	mg/L	0.0002	0.001	03/13/17 21:25	enb
Barium, dissolved	M200.7 ICP	5	0.05	B	*	mg/L	0.02	0.08	03/15/17 11:51	gss
Cadmium, dissolved	M200.8 ICP-MS	1	0.0007		*	mg/L	0.0001	0.0005	03/13/17 21:25	enb
Calcium, dissolved	M200.7 ICP	5	6.9		*	mg/L	0.5	3	03/15/17 11:51	gss
Chromium, dissolved	M200.8 ICP-MS	1	0.0255		*	mg/L	0.0005	0.002	03/13/17 21:25	enb
Copper, dissolved	M200.7 ICP	5	0.09	B	*	mg/L	0.05	0.3	03/15/17 11:51	gss
Iron, dissolved	M200.7 ICP	5	59.7		*	mg/L	0.1	0.3	03/15/17 11:51	gss
Magnesium, dissolved	M200.7 ICP	5	8		*	mg/L	1	5	03/15/17 11:51	gss
Manganese, dissolved	M200.7 ICP	5	0.31		*	mg/L	0.03	0.1	03/15/17 11:51	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 11:51	gss
Nickel, dissolved	M200.7 ICP	5	0.16	B	*	mg/L	0.04	0.2	03/15/17 11:51	gss
Potassium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/15/17 11:51	gss
Selenium, dissolved	M200.8 ICP-MS	1	0.0015		*	mg/L	0.0001	0.0003	03/13/17 21:25	enb
Silver, dissolved	M200.7 ICP	1	0.16		*	mg/L	0.01	0.03	03/15/17 18:08	gss
Sodium, dissolved	M200.7 ICP	5	98		*	mg/L	1	5	03/15/17 11:51	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:51	gss
Uranium, dissolved	M200.8 ICP-MS	1	0.265		*	mg/L	0.0001	0.0005	03/13/17 21:25	enb
Vanadium, dissolved	M200.7 ICP	5	1.91		*	mg/L	0.03	0.1	03/15/17 11:51	gss
Zinc, dissolved	M200.7 ICP	5	0.15	B	*	mg/L	0.05	0.3	03/15/17 11:51	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 494-495 STEP 4

ACZ Sample ID: ***L35955-04***
Date Sampled: *08/23/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	5	3.42		*	mg/L	0.001	0.005	03/13/17 21:28	enb
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/15/17 11:54	gss
Cadmium, dissolved	M200.8 ICP-MS	5	0.0014	B	*	mg/L	0.0005	0.003	03/13/17 21:28	enb
Calcium, dissolved	M200.7 ICP	5	0.7	B	*	mg/L	0.5	3	03/15/17 11:54	gss
Chromium, dissolved	M200.8 ICP-MS	5	0.050		*	mg/L	0.003	0.01	03/13/17 21:28	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 11:54	gss
Iron, dissolved	M200.7 ICP	5	172		*	mg/L	0.1	0.3	03/15/17 11:54	gss
Magnesium, dissolved	M200.7 ICP	5	5		*	mg/L	1	5	03/15/17 11:54	gss
Manganese, dissolved	M200.7 ICP	5	0.74		*	mg/L	0.03	0.1	03/15/17 11:54	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 11:54	gss
Nickel, dissolved	M200.7 ICP	5	0.11	B	*	mg/L	0.04	0.2	03/15/17 11:54	gss
Potassium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/15/17 11:54	gss
Selenium, dissolved	M200.8 ICP-MS	5	0.0053		*	mg/L	0.0005	0.001	03/13/17 21:28	enb
Silver, dissolved	M200.7 ICP	5	0.11		*	mg/L	0.05	0.1	03/15/17 18:17	gss
Sodium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/15/17 11:54	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:54	gss
Uranium, dissolved	M200.8 ICP-MS	5	0.0395		*	mg/L	0.0005	0.003	03/13/17 21:28	enb
Vanadium, dissolved	M200.7 ICP	5	0.87		*	mg/L	0.03	0.1	03/15/17 11:54	gss
Zinc, dissolved	M200.7 ICP	5	0.10	B	*	mg/L	0.05	0.3	03/15/17 11:54	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 494-495 STEP 5

ACZ Sample ID: ***L35955-05***
Date Sampled: *08/23/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.039		*	mg/L	0.002	0.01	03/21/17 15:15	enb
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/15/17 11:57	gss
Cadmium, dissolved	M200.8 ICP-MS	10		U	*	mg/L	0.001	0.005	03/13/17 21:37	enb
Calcium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	03/15/17 11:57	gss
Chromium, dissolved	M200.8 ICP-MS	10	0.021		*	mg/L	0.005	0.02	03/13/17 21:37	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 11:57	gss
Iron, dissolved	M200.7 ICP	5	30.2		*	mg/L	0.1	0.3	03/15/17 11:57	gss
Magnesium, dissolved	M200.7 ICP	5	1	B	*	mg/L	1	5	03/15/17 11:57	gss
Manganese, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:57	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 11:57	gss
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/15/17 11:57	gss
Potassium, dissolved	M200.7 ICP	5	5000		*	mg/L	1	5	03/15/17 18:20	gss
Selenium, dissolved	M200.8 ICP-MS	10	0.004		*	mg/L	0.001	0.003	03/13/17 21:37	enb
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/15/17 18:20	gss
Sodium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/15/17 11:57	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:57	gss
Uranium, dissolved	M200.8 ICP-MS	10	0.043		*	mg/L	0.001	0.005	03/13/17 21:37	enb
Vanadium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 11:57	gss
Zinc, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 11:57	gss

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35955***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.05066	mg/L	101	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0006	0.0006			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.0501		.05161	mg/L	103	85	115			
L35955-01AS	AS	03/13/17 21:15	MS170220-2	.0501	.0769	.1396	mg/L	125	70	130			
L35955-01ASD	ASD	03/13/17 21:18	MS170220-2	.0501	.0769	.133	mg/L	112	70	130	5	20	
WG419704													
WG419704ICV	ICV	03/21/17 14:34	MS170301-3	.05		.05022	mg/L	100	90	110			
WG419704ICB	ICB	03/21/17 14:36				.00021	mg/L		-0.0006	0.0006			
WG419704LFB	LFB	03/21/17 14:38	MS170220-2	.0501		.04633	mg/L	92	85	115			
L35956-04AS	AS	03/21/17 15:29	MS170220-2	.501	6.66	7.3806	mg/L	144	70	130			M3
L35956-04ASD	ASD	03/21/17 15:31	MS170220-2	.501	6.66	7.504	mg/L	168	70	130	2	20	M3

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.9642	mg/L	98	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.009	0.009			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5005		.4935	mg/L	99	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.5025	U	2.507	mg/L	100	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.5025	U	2.451	mg/L	98	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.9862	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.009	0.009			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5005		.5026	mg/L	100	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.5005	.058	.5344	mg/L	95	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.5005	.058	.5328	mg/L	95	85	115	0	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.04984	mg/L	100	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0003	0.0003			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05005		.05002	mg/L	100	85	115			
L35955-01AS	AS	03/13/17 21:15	MS170220-2	.05005	.0001	.04858	mg/L	97	70	130			
L35955-01ASD	ASD	03/13/17 21:18	MS170220-2	.05005	.0001	.04741	mg/L	95	70	130	2	20	

CAMECO Resources

ACZ Project ID: ***L35955***

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	100		98.99	mg/L	99	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.3	0.3			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	67.99026		72.65	mg/L	107	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	339.9513	.7	329.85	mg/L	97	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	339.9513	.7	323.25	mg/L	95	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	100		97.48	mg/L	97	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.3	0.3			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	67.99026		67.45	mg/L	99	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	67.99026	6.9	72.74	mg/L	97	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	67.99026	6.9	72.68	mg/L	97	85	115	0	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.05187	mg/L	104	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0015	0.0015			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05		.05127	mg/L	103	85	115			
L35955-01AS	AS	03/13/17 21:15	MS170220-2	.05	.0019	.04232	mg/L	81	70	130			
L35955-01ASD	ASD	03/13/17 21:18	MS170220-2	.05	.0019	.0382	mg/L	73	70	130	10	20	

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.982	mg/L	99	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.03	0.03			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5005		.482	mg/L	96	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.5025	.09	2.542	mg/L	98	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.5025	.09	2.485	mg/L	96	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.983	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.03	0.03			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5005		.494	mg/L	99	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.5005	.1	.565	mg/L	93	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.5005	.1	.566	mg/L	93	85	115	0	20	

CAMECO Resources

ACZ Project ID: ***L35955***

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.932	mg/L	97	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.06	0.06			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	1.0017		.981	mg/L	98	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	5.0085	8.9	16.64	mg/L	155	85	115			M3
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	5.0085	8.9	10.94	mg/L	41	85	115		20	M3
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.978	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.06	0.06			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	1.0017		1.024	mg/L	102	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	1.0017	59.5	57.4	mg/L	-170	85	115			M3
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	1.0017	59.5	57.4	mg/L	-170	85	115	0	20	M3

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	100		100.05	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.6	0.6			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	50.00074		49.18	mg/L	98	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	250.0037	U	221.5	mg/L	89	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	250.0037	U	216.1	mg/L	86	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	100		98.81	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.6	0.6			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	50.00074		45.7	mg/L	91	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	50.00074	9	53.53	mg/L	89	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	50.00074	9	53.39	mg/L	89	85	115	0	20	

Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.9155	mg/L	96	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.015	0.015			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5		.4859	mg/L	97	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.5	.05	2.483	mg/L	97	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.5	.05	2.398	mg/L	94	85	115	3	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.9532	mg/L	98	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.015	0.015			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5		.5088	mg/L	102	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.5	.332	.8068	mg/L	95	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.5	.332	.8055	mg/L	95	85	115	0	20	

CAMECO Resources

ACZ Project ID: ***L35955***

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2.018	mg/L	101	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.06	0.06			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.4995		.533	mg/L	107	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.4975	U	2.45	mg/L	98	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.4975	U	2.4	mg/L	96	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.048	mg/L	102	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.06	0.06			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.4995		.513	mg/L	103	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.4995	U	.491	mg/L	98	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.4995	U	.493	mg/L	99	85	115	0	20	

Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2.002		2.0243	mg/L	101	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.024	0.024			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.498		.4926	mg/L	99	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.49	U	2.429	mg/L	98	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.49	U	2.371	mg/L	95	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2.002		1.9978	mg/L	100	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.024	0.024			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.498		.4864	mg/L	98	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.498	.148	.6205	mg/L	95	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.498	.148	.6177	mg/L	94	85	115	0	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	20		19.8	mg/L	99	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.6	0.6			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	99.96532		105.2	mg/L	105	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	499.8266	2	492.4	mg/L	98	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	499.8266	2	485.6	mg/L	97	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	20		19.64	mg/L	98	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.6	0.6			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	99.96532		96.52	mg/L	97	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	99.96532	1.7	93.64	mg/L	92	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	99.96532	1.7	93.19	mg/L	92	85	115	0	20	

CAMECO Resources

ACZ Project ID: ***L35955***

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.05169	mg/L	103	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0003	0.0003			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05005		.04992	mg/L	100	85	115			
L35955-01AS	AS	03/13/17 21:15	MS170220-2	.05005	.0312	.116	mg/L	169	70	130			M1
L35955-01ASD	ASD	03/13/17 21:18	MS170220-2	.05005	.0312	.1138	mg/L	165	70	130	2	20	M1

Silver, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	1.002		1.026	mg/L	102	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.03	0.03			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.501		.502	mg/L	100	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.501	.16	.612	mg/L	90	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.501	.16	.604	mg/L	89	85	115	1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	100		101.37	mg/L	101	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.6	0.6			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	100.0322		107.4	mg/L	107	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	500.161	7560	8085	mg/L	105	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	500.161	7560	7890	mg/L	66	85	115	2	20	M3
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	100		99.57	mg/L	100	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.6	0.6			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	100.0322		98.63	mg/L	99	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	100.0322	83.6	175.6	mg/L	92	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	100.0322	83.6	173.5	mg/L	90	85	115	1	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2.0022	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.015	0.015			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5015		.5364	mg/L	107	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.5075	U	2.491	mg/L	99	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.5075	U	2.458	mg/L	98	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.007	mg/L	100	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.015	0.015			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5015		.5057	mg/L	101	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.5015	.031	.5114	mg/L	96	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.5015	.031	.5109	mg/L	96	85	115	0	20	

CAMECO Resources

ACZ Project ID: ***L35955***

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.04893	mg/L	98	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0003	0.0003			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05		.04863	mg/L	97	85	115			
L35955-01AS	AS	03/13/17 21:15	MS170220-2					31	70	130			M3
L35955-01ASD	ASD	03/13/17 21:18	MS170220-2	.05	.3617	.3738	mg/L	24	70	130	1	20	M3

Vanadium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2.0052	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.015	0.015			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.4985		.538	mg/L	108	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.4925	.54	3.036	mg/L	100	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.4925	.54	2.932	mg/L	96	85	115	3	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.0298	mg/L	101	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.015	0.015			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.4985		.5106	mg/L	102	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.4985	1.89	2.308	mg/L	84	85	115			M3
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.4985	1.89	2.303	mg/L	83	85	115	0	20	M3

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.03	0.03			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.4942		.546	mg/L	110	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.471	U	2.533	mg/L	103	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.471	U	2.483	mg/L	100	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.035	mg/L	102	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.03	0.03			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.4942		.524	mg/L	106	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.4942	.17	.671	mg/L	101	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.4942	.17	.673	mg/L	102	85	115	0	20	

CAMECO Resources ACZ Project ID: ***L35955***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35955-01	WG419468	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35955-02	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419376	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419376	Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

CAMECO Resources ACZ Project ID: ***L35955***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35955-03	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Sodium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35955-04	WG419338	Arsenic, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419376	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

Inorganic Extended Qualifier Report

CAMECO Resources ACZ Project ID: ***L35955***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35955-05	WG419704	Arsenic, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419376	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419376	Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 494-495 STEP 1
Locator:

ACZ Sample ID: ***L35955-01***
Date Sampled: *08/23/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:02		300	4.2	0.4	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 494-495 STEP 2
Locator:

ACZ Sample ID: ***L35955-02***
Date Sampled: *08/23/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:04		52	1.7	0.6	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 494-495 STEP 3
Locator:

ACZ Sample ID: ***L35955-03***
Date Sampled: *08/23/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:05		230	4.5	1.4	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 494-495 STEP 4
Locator:

ACZ Sample ID: ***L35955-04***
Date Sampled: *08/23/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:07		31	1.3	1.1	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 494-495 STEP 5
Locator:

ACZ Sample ID: ***L35955-05***
Date Sampled: *08/23/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:08		3.1	0.44	0.44	pCi/L	*	tjr

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35955***

Radium 226 M903.1 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
WG422018																
WG420964PBW	PBW	04/27/17						.1	0.07	0.23			0.46			
WG420964LCSW	LCSW	04/27/17	PCN52689	20				19	0.44	0.05	95	43	148			
L35955-02DUP	DUP-RER	04/27/17			52	1.7	0.6	34	1.4	0.57				8.17	2	RM
L35956-02DUP	DUP-RER	04/27/17			87	2	0.4	62	2.7	0.57				7.44	2	RM
L35958-02MS	MS	04/27/17	PCN52689	200	4.9	0.4	0.23	210	5.3	0.68	103	43	148			

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RadChem Extended Qualifier Report

CAMECO Resources

ACZ Project ID: ***L35955***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35955-01	WG422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35955-02	WG422018	Radium 226	M903.1	DF	Sample required dilution due to high sediment.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35955-03	WG422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35955-04	WG422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35955-05	WG422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

Radiochemistry

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Radium 226	M903.1

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35955
Date Received: 03/13/2017 09:47
Received By:
Date Printed: 3/13/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
UNKNOWN		NA		

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35955
Date Received: 03/13/2017 09:47
Received By:
Date Printed: 3/13/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 28, 2017

Report to:
Jim Clay
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

cc: Janet Schramke

Bill to:
Mary Anne Valentine
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

Project ID: 4500546123
ACZ Project ID: L35956

Jim Clay:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 13, 2017. This project has been assigned to ACZ's project number, L35956. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L35956. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 28, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

CAMECO Resources

April 28, 2017

Project ID: 4500546123
ACZ Project ID: L35956

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 miscellaneous samples from CAMECO Resources on March 13, 2017. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L35956. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. This project is a client requested sequential leaching process. The reagents and protocols utilized come from the 'Trace metal occurrence in a mineralised and a non-mineralised spodosol in Northern Sweden', Land and others. Published in the Journal of Geochemical Exploration 75 (2002) 71-91.

2. The Continuing Calibration Verification (CCV) for Arsenic following L35956 (produced from various leachate solutions) has failed above method limits multiple times. Samples have been diluted. Pass data with out-of-limits As CCV due to matrix effects.

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 499-500 STEP 1

ACZ Sample ID: ***L35956-01***
Date Sampled: *08/23/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	5	0.065		*	mg/L	0.001	0.005	03/21/17 15:21	enb
Barium, dissolved	M200.7 ICP	20	0.43		*	mg/L	0.06	0.3	03/15/17 18:30	gss
Cadmium, dissolved	M200.8 ICP-MS	5		U	*	mg/L	0.0005	0.003	03/13/17 21:41	enb
Calcium, dissolved	M200.7 ICP	20	55		*	mg/L	2	10	03/15/17 18:30	gss
Chromium, dissolved	M200.8 ICP-MS	5		U	*	mg/L	0.003	0.01	03/13/17 21:41	enb
Copper, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	1	03/15/17 18:30	gss
Iron, dissolved	M200.7 ICP	20	0.5	B	*	mg/L	0.4	1	03/15/17 18:30	gss
Magnesium, dissolved	M200.7 ICP	20	12	B	*	mg/L	4	20	03/15/17 18:30	gss
Manganese, dissolved	M200.7 ICP	20		U	*	mg/L	0.1	0.5	03/15/17 18:30	gss
Molybdenum, dissolved	M200.7 ICP	20		U	*	mg/L	0.4	2	03/15/17 18:30	gss
Nickel, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	0.8	03/15/17 18:30	gss
Potassium, dissolved	M200.7 ICP	20	11	B	*	mg/L	4	20	03/15/17 18:30	gss
Selenium, dissolved	M200.8 ICP-MS	5	0.0376		*	mg/L	0.0005	0.001	03/13/17 21:41	enb
Silver, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	0.5	03/15/17 18:30	gss
Sodium, dissolved	M200.7 ICP	20	14300		*	mg/L	4	20	03/15/17 18:30	gss
Strontium, dissolved	M200.7 ICP	20	0.5		*	mg/L	0.1	0.5	03/15/17 18:30	gss
Uranium, dissolved	M200.8 ICP-MS	5	0.504		*	mg/L	0.0005	0.003	03/13/17 21:41	enb
Vanadium, dissolved	M200.7 ICP	20		U	*	mg/L	0.1	0.5	03/15/17 18:30	gss
Zinc, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	1	03/15/17 18:30	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 499-500 STEP 2

ACZ Sample ID: ***L35956-02***
Date Sampled: *08/23/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.814		*	mg/L	0.002	0.01	03/21/17 15:23	enb
Barium, dissolved	M200.7 ICP	10	0.11	B	*	mg/L	0.03	0.2	03/15/17 12:09	gss
Cadmium, dissolved	M200.8 ICP-MS	10	0.001	B	*	mg/L	0.001	0.005	03/13/17 21:44	enb
Calcium, dissolved	M200.7 ICP	10	1	B	*	mg/L	1	5	03/15/17 12:09	gss
Chromium, dissolved	M200.8 ICP-MS	10	0.006	B	*	mg/L	0.005	0.02	03/13/17 21:44	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 12:09	gss
Iron, dissolved	M200.7 ICP	10	1.7		*	mg/L	0.2	0.5	03/15/17 12:09	gss
Magnesium, dissolved	M200.7 ICP	10		U	*	mg/L	2	10	03/15/17 12:09	gss
Manganese, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 12:09	gss
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 12:09	gss
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 12:09	gss
Potassium, dissolved	M200.7 ICP	10	2	B	*	mg/L	2	10	03/15/17 12:09	gss
Selenium, dissolved	M200.8 ICP-MS	10	0.065		*	mg/L	0.001	0.003	03/13/17 21:44	enb
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 18:33	gss
Sodium, dissolved	M200.7 ICP	10	8010		*	mg/L	2	10	03/15/17 12:09	gss
Strontium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 12:09	gss
Uranium, dissolved	M200.8 ICP-MS	10	1.52		*	mg/L	0.001	0.005	03/13/17 21:44	enb
Vanadium, dissolved	M200.7 ICP	10	0.57		*	mg/L	0.05	0.3	03/15/17 12:09	gss
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 12:09	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 499-500 STEP 3

ACZ Sample ID: ***L35956-03***
Date Sampled: *08/23/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.130		*	mg/L	0.0002	0.001	03/21/17 15:25	enb
Barium, dissolved	M200.7 ICP	5	1.31		*	mg/L	0.02	0.08	03/15/17 12:12	gss
Cadmium, dissolved	M200.8 ICP-MS	1	0.0038		*	mg/L	0.0001	0.0005	03/13/17 21:47	enb
Calcium, dissolved	M200.7 ICP	5	11.2		*	mg/L	0.5	3	03/15/17 12:12	gss
Chromium, dissolved	M200.8 ICP-MS	1	0.0372		*	mg/L	0.0005	0.002	03/13/17 21:47	enb
Copper, dissolved	M200.7 ICP	5	0.13	B	*	mg/L	0.05	0.3	03/15/17 12:12	gss
Iron, dissolved	M200.7 ICP	5	98.1		*	mg/L	0.1	0.3	03/15/17 12:12	gss
Magnesium, dissolved	M200.7 ICP	5	15		*	mg/L	1	5	03/15/17 12:12	gss
Manganese, dissolved	M200.7 ICP	5	0.91		*	mg/L	0.03	0.1	03/15/17 12:12	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 12:12	gss
Nickel, dissolved	M200.7 ICP	5	0.36		*	mg/L	0.04	0.2	03/15/17 12:12	gss
Potassium, dissolved	M200.7 ICP	5	3	B	*	mg/L	1	5	03/15/17 12:12	gss
Selenium, dissolved	M200.8 ICP-MS	1	0.0057		*	mg/L	0.0001	0.0003	03/13/17 21:47	enb
Silver, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.03	03/15/17 18:37	gss
Sodium, dissolved	M200.7 ICP	5	149		*	mg/L	1	5	03/15/17 12:12	gss
Strontium, dissolved	M200.7 ICP	5	0.10		*	mg/L	0.03	0.1	03/15/17 12:12	gss
Uranium, dissolved	M200.8 ICP-MS	1	1.02		*	mg/L	0.0001	0.0005	03/13/17 21:47	enb
Vanadium, dissolved	M200.7 ICP	5	5.61		*	mg/L	0.03	0.1	03/15/17 12:12	gss
Zinc, dissolved	M200.7 ICP	5	0.27	B	*	mg/L	0.05	0.3	03/15/17 12:12	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 499-500 STEP 4

ACZ Sample ID: ***L35956-04***
Date Sampled: *08/23/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	6.66		*	mg/L	0.002	0.01	03/21/17 15:27	enb
Barium, dissolved	M200.7 ICP	5	0.38		*	mg/L	0.02	0.08	03/15/17 12:15	gss
Cadmium, dissolved	M200.8 ICP-MS	5	0.0033		*	mg/L	0.0005	0.003	03/13/17 21:50	enb
Calcium, dissolved	M200.7 ICP	5	1.2	B	*	mg/L	0.5	3	03/15/17 12:15	gss
Chromium, dissolved	M200.8 ICP-MS	5	0.063		*	mg/L	0.003	0.01	03/13/17 21:50	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 12:15	gss
Iron, dissolved	M200.7 ICP	5	449		*	mg/L	0.1	0.3	03/15/17 12:15	gss
Magnesium, dissolved	M200.7 ICP	5	8		*	mg/L	1	5	03/15/17 12:15	gss
Manganese, dissolved	M200.7 ICP	5	1.65		*	mg/L	0.03	0.1	03/15/17 12:15	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 12:15	gss
Nickel, dissolved	M200.7 ICP	5	0.16	B	*	mg/L	0.04	0.2	03/15/17 12:15	gss
Potassium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/15/17 12:15	gss
Selenium, dissolved	M200.8 ICP-MS	5	0.0162		*	mg/L	0.0005	0.001	03/13/17 21:50	enb
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/15/17 18:40	gss
Sodium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/15/17 12:15	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 12:15	gss
Uranium, dissolved	M200.8 ICP-MS	5	0.245		*	mg/L	0.0005	0.003	03/13/17 21:50	enb
Vanadium, dissolved	M200.7 ICP	5	3.19		*	mg/L	0.03	0.1	03/15/17 12:15	gss
Zinc, dissolved	M200.7 ICP	5	0.27	B	*	mg/L	0.05	0.3	03/15/17 12:15	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 499-500 STEP 5

ACZ Sample ID: ***L35956-05***
Date Sampled: *08/23/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.681		*	mg/L	0.002	0.01	03/21/17 15:33	enb
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/15/17 12:18	gss
Cadmium, dissolved	M200.8 ICP-MS	10		U	*	mg/L	0.001	0.005	03/13/17 21:53	enb
Calcium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	03/15/17 12:18	gss
Chromium, dissolved	M200.8 ICP-MS	10	0.018	B	*	mg/L	0.005	0.02	03/13/17 21:53	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 12:18	gss
Iron, dissolved	M200.7 ICP	5	24.3		*	mg/L	0.1	0.3	03/15/17 12:18	gss
Magnesium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/15/17 12:18	gss
Manganese, dissolved	M200.7 ICP	5	0.08	B	*	mg/L	0.03	0.1	03/15/17 12:18	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 12:18	gss
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/15/17 12:18	gss
Potassium, dissolved	M200.7 ICP	5	4450		*	mg/L	1	5	03/15/17 12:18	gss
Selenium, dissolved	M200.8 ICP-MS	10	0.470		*	mg/L	0.001	0.003	03/13/17 21:53	enb
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/15/17 18:43	gss
Sodium, dissolved	M200.7 ICP	5	1	B	*	mg/L	1	5	03/15/17 12:18	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 12:18	gss
Uranium, dissolved	M200.8 ICP-MS	10	0.024		*	mg/L	0.001	0.005	03/13/17 21:53	enb
Vanadium, dissolved	M200.7 ICP	5	0.10		*	mg/L	0.03	0.1	03/15/17 12:18	gss
Zinc, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 12:18	gss

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35956***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419704													
WG419704ICV	ICV	03/21/17 14:34	MS170301-3	.05		.05022	mg/L	100	90	110			
WG419704ICB	ICB	03/21/17 14:36				.00021	mg/L		-0.0006	0.0006			
WG419704LFB	LFB	03/21/17 14:38	MS170220-2	.0501		.04633	mg/L	92	85	115			
L35956-04AS	AS	03/21/17 15:29	MS170220-2	.501	6.66	7.3806	mg/L	144	70	130			M3
L35956-04ASD	ASD	03/21/17 15:31	MS170220-2	.501	6.66	7.504	mg/L	168	70	130	2	20	M3

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.9642	mg/L	98	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.009	0.009			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5005		.4935	mg/L	99	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.5025	U	2.507	mg/L	100	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.5025	U	2.451	mg/L	98	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.9862	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.009	0.009			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5005		.5026	mg/L	100	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.5005	.058	.5344	mg/L	95	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.5005	.058	.5328	mg/L	95	85	115	0	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.04984	mg/L	100	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0003	0.0003			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05005		.05002	mg/L	100	85	115			
L35955-01AS	AS	03/13/17 21:15	MS170220-2	.05005	.0001	.04858	mg/L	97	70	130			
L35955-01ASD	ASD	03/13/17 21:18	MS170220-2	.05005	.0001	.04741	mg/L	95	70	130	2	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	100		98.99	mg/L	99	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.3	0.3			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	67.99026		72.65	mg/L	107	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	339.9513	.7	329.85	mg/L	97	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	339.9513	.7	323.25	mg/L	95	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	100		97.48	mg/L	97	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.3	0.3			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	67.99026		67.45	mg/L	99	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	67.99026	6.9	72.74	mg/L	97	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	67.99026	6.9	72.68	mg/L	97	85	115	0	20	

CAMECO Resources

ACZ Project ID: ***L35956***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.05187	mg/L	104	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0015	0.0015			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05		.05127	mg/L	103	85	115			
L35955-01AS	AS	03/13/17 21:15	MS170220-2	.05	.0019	.04232	mg/L	81	70	130			
L35955-01ASD	ASD	03/13/17 21:18	MS170220-2	.05	.0019	.0382	mg/L	73	70	130	10	20	

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.982	mg/L	99	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.03	0.03			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5005		.482	mg/L	96	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.5025	.09	2.542	mg/L	98	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.5025	.09	2.485	mg/L	96	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.983	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.03	0.03			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5005		.494	mg/L	99	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.5005	.1	.565	mg/L	93	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.5005	.1	.566	mg/L	93	85	115	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.932	mg/L	97	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.06	0.06			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	1.0017		.981	mg/L	98	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	5.0085	8.9	16.64	mg/L	155	85	115			M3
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	5.0085	8.9	10.94	mg/L	41	85	115		20	M3
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.978	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.06	0.06			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	1.0017		1.024	mg/L	102	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	1.0017	59.5	57.4	mg/L	-170	85	115			M3
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	1.0017	59.5	57.4	mg/L	-170	85	115	0	20	M3

CAMECO Resources

ACZ Project ID: ***L35956***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	100		100.05	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.6	0.6			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	50.00074		49.18	mg/L	98	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	250.0037	U	221.5	mg/L	89	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	250.0037	U	216.1	mg/L	86	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	100		98.81	mg/L	99	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.6	0.6			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	50.00074		45.7	mg/L	91	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	50.00074	9	53.53	mg/L	89	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	50.00074	9	53.39	mg/L	89	85	115	0	20	

Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		1.9155	mg/L	96	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.015	0.015			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5		.4859	mg/L	97	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.5	.05	2.483	mg/L	97	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.5	.05	2.398	mg/L	94	85	115	3	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		1.9532	mg/L	98	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.015	0.015			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5		.5088	mg/L	102	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.5	.332	.8068	mg/L	95	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.5	.332	.8055	mg/L	95	85	115	0	20	

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2.018	mg/L	101	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.06	0.06			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.4995		.533	mg/L	107	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.4975	U	2.45	mg/L	98	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.4975	U	2.4	mg/L	96	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.048	mg/L	102	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.06	0.06			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.4995		.513	mg/L	103	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.4995	U	.491	mg/L	98	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.4995	U	.493	mg/L	99	85	115	0	20	

CAMECO Resources

ACZ Project ID: ***L35956***

Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2.002		2.0243	mg/L	101	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.024	0.024			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.498		.4926	mg/L	99	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.49	U	2.429	mg/L	98	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.49	U	2.371	mg/L	95	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2.002		1.9978	mg/L	100	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.024	0.024			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.498		.4864	mg/L	98	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.498	.148	.6205	mg/L	95	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.498	.148	.6177	mg/L	94	85	115	0	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	20		19.8	mg/L	99	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.6	0.6			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	99.96532		105.2	mg/L	105	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	499.8266	2	492.4	mg/L	98	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	499.8266	2	485.6	mg/L	97	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	20		19.64	mg/L	98	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.6	0.6			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	99.96532		96.52	mg/L	97	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	99.96532	1.7	93.64	mg/L	92	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	99.96532	1.7	93.19	mg/L	92	85	115	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.05169	mg/L	103	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0003	0.0003			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05005		.04992	mg/L	100	85	115			
L35955-01AS	AS	03/13/17 21:15	MS170220-2	.05005	.0312	.116	mg/L	169	70	130			M1
L35955-01ASD	ASD	03/13/17 21:18	MS170220-2	.05005	.0312	.1138	mg/L	165	70	130	2	20	M1

Silver, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	1.002		1.026	mg/L	102	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.03	0.03			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.501		.502	mg/L	100	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.501	.16	.612	mg/L	90	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.501	.16	.604	mg/L	89	85	115	1	20	

CAMECO Resources

ACZ Project ID: ***L35956***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	100		101.37	mg/L	101	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.6	0.6			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	100.0322		107.4	mg/L	107	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	500.161	7560	8085	mg/L	105	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	500.161	7560	7890	mg/L	66	85	115	2	20	M3
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	100		99.57	mg/L	100	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.6	0.6			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	100.0322		98.63	mg/L	99	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	100.0322	83.6	175.6	mg/L	92	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	100.0322	83.6	173.5	mg/L	90	85	115	1	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2.0022	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.015	0.015			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.5015		.5364	mg/L	107	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.5075	U	2.491	mg/L	99	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.5075	U	2.458	mg/L	98	85	115	1	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.007	mg/L	100	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.015	0.015			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.5015		.5057	mg/L	101	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.5015	.031	.5114	mg/L	96	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.5015	.031	.5109	mg/L	96	85	115	0	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419338													
WG419338ICV	ICV	03/13/17 20:17	MS170301-3	.05		.04893	mg/L	98	90	110			
WG419338ICB	ICB	03/13/17 20:20				U	mg/L		-0.0003	0.0003			
WG419338LFB	LFB	03/13/17 20:24	MS170220-2	.05		.04863	mg/L	97	85	115			
L35955-01AS	AS	03/13/17 21:15	MS170220-2					31	70	130			M3
L35955-01ASD	ASD	03/13/17 21:18	MS170220-2	.05	.3617	.3738	mg/L	24	70	130	1	20	M3

CAMECO Resources

ACZ Project ID: ***L35956***

Vanadium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2.0052	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.015	0.015			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.4985		.538	mg/L	108	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.4925	.54	3.036	mg/L	100	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.4925	.54	2.932	mg/L	96	85	115	3	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.0298	mg/L	101	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.015	0.015			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.4985		.5106	mg/L	102	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.4985	1.89	2.308	mg/L	84	85	115			M3
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.4985	1.89	2.303	mg/L	83	85	115	0	20	M3

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419376													
WG419376ICV	ICV	03/15/17 10:34	II170201-1	2		2	mg/L	100	95	105			
WG419376ICB	ICB	03/15/17 10:40				U	mg/L		-0.03	0.03			
WG419376LFB	LFB	03/15/17 10:53	II170220-2	.4942		.546	mg/L	110	85	115			
L35955-02AS	AS	03/15/17 11:45	II170220-2	2.471	U	2.533	mg/L	103	85	115			
L35955-02ASD	ASD	03/15/17 11:48	II170220-2	2.471	U	2.483	mg/L	100	85	115	2	20	
WG419468													
WG419468ICV	ICV	03/15/17 16:54	II170201-1	2		2.035	mg/L	102	95	105			
WG419468ICB	ICB	03/15/17 17:00				U	mg/L		-0.03	0.03			
WG419468LFB	LFB	03/15/17 17:13	II170220-2	.4942		.524	mg/L	106	85	115			
L35955-03AS	AS	03/15/17 18:11	II170220-2	.4942	.17	.671	mg/L	101	85	115			
L35955-03ASD	ASD	03/15/17 18:14	II170220-2	.4942	.17	.673	mg/L	102	85	115	0	20	

CAMECO Resources ACZ Project ID: ***L35956***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35956-01	WG419704	Arsenic, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	N1	See Case Narrative.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Chromium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419468	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

CAMECO Resources ACZ Project ID: ***L35956***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35956-02	WG419704	Arsenic, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	N1	See Case Narrative.
	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419376	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419376	Sodium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35956-03	WG419704	Arsenic, dissolved	M200.8 ICP-MS	N1	See Case Narrative.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Sodium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

CAMECO Resources ACZ Project ID: ***L35956***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35956-04	WG419704	Arsenic, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.8 ICP-MS	N1	See Case Narrative.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419376	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419376	Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

CAMECO Resources ACZ Project ID: ***L35956***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35956-05	WG419704	Arsenic, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	N1	See Case Narrative.
	WG419376	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG419376	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Chromium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419376	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419468	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419376	Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG419338	Uranium, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG419376	Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 499-500 STEP 1
Locator:

ACZ Sample ID: ***L35956-01***
Date Sampled: *08/23/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:10		660	5.6	0.55	pCi/L	*	tjr

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 499-500 STEP 2
Locator:

ACZ Sample ID: ***L35956-02***
Date Sampled: *08/23/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:11		87	2	0.4	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 499-500 STEP 3
Locator:

ACZ Sample ID: ***L35956-03***
Date Sampled: *08/23/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:12		400	6.2	1.2	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 499-500 STEP 4
Locator:

ACZ Sample ID: ***L35956-04***
Date Sampled: *08/23/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:14		140	3.3	0.56	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: ST-5 1 OF 2 499-500 STEP 5
Locator:

ACZ Sample ID: ***L35956-05***
Date Sampled: *08/23/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:15		5.3	0.53	0.32	pCi/L	*	tjr

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

Radiochemistry QC Summary

CAMECO Resources

ACZ Project ID: ***L35956***

Radium 226 M903.1 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
WG422018																
WG420964PBW	PBW	04/27/17						.1	0.07	0.23			0.46			
WG420964LCSW	LCSW	04/27/17	PCN52689	20				19	0.44	0.05	95	43	148			
L35955-02DUP	DUP-RER	04/27/17			52	1.7	0.6	34	1.4	0.57				8.17	2	RM
L35956-02DUP	DUP-RER	04/27/17			87	2	0.4	62	2.7	0.57				7.44	2	RM
L35958-02MS	MS	04/27/17	PCN52689	200	4.9	0.4	0.23	210	5.3	0.68	103	43	148			

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RadChem Extended Qualifier Report

CAMECO Resources

ACZ Project ID: ***L35956***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35956-01	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35956-02	*N*G422018	Radium 226	M903.1	DF	Sample required dilution due to high sediment.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35956-03	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35956-04	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35956-05	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

Radiochemistry

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Radium 226	M903.1

ACZ Laboratories, Inc.
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Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35956
Date Received: 03/13/2017 09:50
Received By:
Date Printed: 3/13/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
UNKNOWN		NA		

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35956
Date Received: 03/13/2017 09:50
Received By:
Date Printed: 3/13/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 28, 2017

Report to:
Jim Clay
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

cc: Janet Schramke

Bill to:
Mary Anne Valentine
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

Project ID: 4500546123
ACZ Project ID: L35957

Jim Clay:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 13, 2017. This project has been assigned to ACZ's project number, L35957. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L35957. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 28, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

ACZ Laboratories, Inc.
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Case Narrative

CAMECO Resources

April 28, 2017

Project ID: 4500546123
ACZ Project ID: L35957

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 miscellaneous samples from CAMECO Resources on March 13, 2017. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L35957. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. This project is a client requested sequential leaching process. The reagents and protocols utilized come from the 'Trace metal occurrence in a mineralised and a non-mineralised spodosol in Northern Sweden', Land and others. Published in the Journal of Geochemical Exploration 75 (2002) 71-91.

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-2 487.5-488.5 STEP 1

ACZ Sample ID: ***L35957-01***
Date Sampled: *09/12/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.007	B	*	mg/L	0.002	0.01	03/20/17 15:47	mfm
Barium, dissolved	M200.7 ICP	20		U	*	mg/L	0.06	0.3	03/15/17 16:33	gss
Cadmium, dissolved	M200.8 ICP-MS	5		U	*	mg/L	0.0005	0.003	03/17/17 17:43	mfm
Calcium, dissolved	M200.7 ICP	20	37		*	mg/L	2	10	03/15/17 16:33	gss
Chromium, dissolved	M200.8 ICP-MS	5		U	*	mg/L	0.003	0.01	03/17/17 17:43	mfm
Copper, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	1	03/15/17 16:33	gss
Iron, dissolved	M200.7 ICP	20		U	*	mg/L	0.4	1	03/15/17 16:33	gss
Magnesium, dissolved	M200.7 ICP	20	8	B	*	mg/L	4	20	03/15/17 16:33	gss
Manganese, dissolved	M200.7 ICP	20		U	*	mg/L	0.1	0.5	03/15/17 16:33	gss
Molybdenum, dissolved	M200.7 ICP	20		U	*	mg/L	0.4	2	03/15/17 16:33	gss
Nickel, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	0.8	03/15/17 16:33	gss
Potassium, dissolved	M200.7 ICP	20	7	B	*	mg/L	4	20	03/15/17 16:33	gss
Selenium, dissolved	M200.8 ICP-MS	10	0.004		*	mg/L	0.001	0.003	03/20/17 15:47	mfm
Silver, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	0.5	03/15/17 16:33	gss
Sodium, dissolved	M200.7 ICP	20	13700		*	mg/L	4	20	03/15/17 16:33	gss
Strontium, dissolved	M200.7 ICP	20	0.3	B	*	mg/L	0.1	0.5	03/15/17 16:33	gss
Uranium, dissolved	M200.8 ICP-MS	5	2.06		*	mg/L	0.0005	0.003	03/17/17 17:43	mfm
Vanadium, dissolved	M200.7 ICP	20		U	*	mg/L	0.1	0.5	03/15/17 16:33	gss
Zinc, dissolved	M200.7 ICP	20		U	*	mg/L	0.2	1	03/15/17 16:33	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-2 487.5-488.5 STEP 2

ACZ Sample ID: ***L35957-02***
Date Sampled: *09/12/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.012		*	mg/L	0.002	0.01	03/20/17 15:50	mfm
Barium, dissolved	M200.7 ICP	10		U	*	mg/L	0.03	0.2	03/15/17 16:36	gss
Cadmium, dissolved	M200.8 ICP-MS	20		U	*	mg/L	0.002	0.01	03/17/17 17:47	mfm
Calcium, dissolved	M200.7 ICP	10		U	*	mg/L	1	5	03/15/17 16:36	gss
Chromium, dissolved	M200.8 ICP-MS	20		U	*	mg/L	0.01	0.04	03/17/17 17:47	mfm
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 16:36	gss
Iron, dissolved	M200.7 ICP	10	1.3		*	mg/L	0.2	0.5	03/15/17 16:36	gss
Magnesium, dissolved	M200.7 ICP	10		U	*	mg/L	2	10	03/15/17 16:36	gss
Manganese, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 16:36	gss
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/15/17 16:36	gss
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/15/17 16:36	gss
Potassium, dissolved	M200.7 ICP	10		U	*	mg/L	2	10	03/15/17 16:36	gss
Selenium, dissolved	M200.8 ICP-MS	10	0.001	B	*	mg/L	0.001	0.003	03/20/17 15:50	mfm
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/15/17 16:36	gss
Sodium, dissolved	M200.7 ICP	10	7720		*	mg/L	2	10	03/15/17 16:36	gss
Strontium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 16:36	gss
Uranium, dissolved	M200.8 ICP-MS	20	3.38		*	mg/L	0.002	0.01	03/17/17 17:47	mfm
Vanadium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/15/17 16:36	gss
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/15/17 16:36	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-2 487.5-488.5 STEP 3

ACZ Sample ID: ***L35957-03***
Date Sampled: *09/12/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.055		*	mg/L	0.002	0.01	03/20/17 15:53	mfm
Barium, dissolved	M200.7 ICP	1	0.040		*	mg/L	0.003	0.02	03/15/17 16:39	gss
Cadmium, dissolved	M200.8 ICP-MS	1	0.0059		*	mg/L	0.0001	0.0005	03/16/17 20:00	mfm
Calcium, dissolved	M200.7 ICP	1	7.6		*	mg/L	0.1	0.5	03/15/17 16:39	gss
Chromium, dissolved	M200.8 ICP-MS	1	0.0518		*	mg/L	0.0005	0.002	03/16/17 20:00	mfm
Copper, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.01	0.05	03/15/17 16:39	gss
Iron, dissolved	M200.7 ICP	1	88.3		*	mg/L	0.02	0.05	03/15/17 16:39	gss
Magnesium, dissolved	M200.7 ICP	1	16.4		*	mg/L	0.2	1	03/15/17 16:39	gss
Manganese, dissolved	M200.7 ICP	1	0.403		*	mg/L	0.005	0.03	03/15/17 16:39	gss
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	03/15/17 16:39	gss
Nickel, dissolved	M200.7 ICP	1	0.104		*	mg/L	0.008	0.04	03/15/17 16:39	gss
Potassium, dissolved	M200.7 ICP	1	1.6		*	mg/L	0.2	1	03/15/17 16:39	gss
Selenium, dissolved	M200.8 ICP-MS	20		U	*	mg/L	0.002	0.005	03/17/17 17:50	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	03/15/17 16:39	gss
Sodium, dissolved	M200.7 ICP	1	72.8		*	mg/L	0.2	1	03/15/17 16:39	gss
Strontium, dissolved	M200.7 ICP	1	0.019	B	*	mg/L	0.005	0.03	03/15/17 16:39	gss
Uranium, dissolved	M200.8 ICP-MS	20	2.94		*	mg/L	0.002	0.01	03/17/17 17:50	mfm
Vanadium, dissolved	M200.7 ICP	1	0.063		*	mg/L	0.005	0.03	03/15/17 16:39	gss
Zinc, dissolved	M200.7 ICP	1	0.43		*	mg/L	0.01	0.05	03/15/17 16:39	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-2 487.5-488.5 STEP 4

ACZ Sample ID: ***L35957-04***
Date Sampled: *09/12/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.021		*	mg/L	0.002	0.01	03/20/17 15:56	mfm
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/15/17 16:42	gss
Cadmium, dissolved	M200.8 ICP-MS	5	0.0019	B	*	mg/L	0.0005	0.003	03/17/17 17:53	mfm
Calcium, dissolved	M200.7 ICP	5	0.8	B	*	mg/L	0.5	3	03/15/17 16:42	gss
Chromium, dissolved	M200.8 ICP-MS	1	0.0599		*	mg/L	0.0005	0.002	03/16/17 20:03	mfm
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/15/17 16:42	gss
Iron, dissolved	M200.7 ICP	5	15.3		*	mg/L	0.1	0.3	03/15/17 16:42	gss
Magnesium, dissolved	M200.7 ICP	5	6		*	mg/L	1	5	03/15/17 16:42	gss
Manganese, dissolved	M200.7 ICP	5	0.10		*	mg/L	0.03	0.1	03/15/17 16:42	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 16:42	gss
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/15/17 16:42	gss
Potassium, dissolved	M200.7 ICP	5	1	B	*	mg/L	1	5	03/15/17 16:42	gss
Selenium, dissolved	M200.8 ICP-MS	10	0.003		*	mg/L	0.001	0.003	03/20/17 15:56	mfm
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/15/17 16:42	gss
Sodium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/15/17 16:42	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 16:42	gss
Uranium, dissolved	M200.8 ICP-MS	1	0.336		*	mg/L	0.0001	0.0005	03/16/17 20:03	mfm
Vanadium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 16:42	gss
Zinc, dissolved	M200.7 ICP	5	0.08	B	*	mg/L	0.05	0.3	03/15/17 16:42	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-2 487.5-488.5 STEP 5

ACZ Sample ID: ***L35957-05***
Date Sampled: *09/12/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	20	7.00		*	mg/L	0.004	0.02	04/17/17 19:21	enb
Barium, dissolved	M200.7 ICP	5	0.09		*	mg/L	0.02	0.08	03/15/17 16:45	gss
Cadmium, dissolved	M200.8 ICP-MS	10	0.002	B	*	mg/L	0.001	0.005	03/16/17 20:06	mfm
Calcium, dissolved	M200.7 ICP	5	0.5	B	*	mg/L	0.5	3	03/15/17 16:45	gss
Chromium, dissolved	M200.8 ICP-MS	10	0.037		*	mg/L	0.005	0.02	03/16/17 20:06	mfm
Copper, dissolved	M200.7 ICP	5	0.06	B	*	mg/L	0.05	0.3	03/15/17 16:45	gss
Iron, dissolved	M200.7 ICP	5	225		*	mg/L	0.1	0.3	03/15/17 16:45	gss
Magnesium, dissolved	M200.7 ICP	5	5		*	mg/L	1	5	03/15/17 16:45	gss
Manganese, dissolved	M200.7 ICP	5	0.80		*	mg/L	0.03	0.1	03/15/17 16:45	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/15/17 16:45	gss
Nickel, dissolved	M200.7 ICP	5	0.06	B	*	mg/L	0.04	0.2	03/15/17 16:45	gss
Potassium, dissolved	M200.7 ICP	5	4320		*	mg/L	1	5	03/15/17 16:45	gss
Selenium, dissolved	M200.8 ICP-MS	10	8.02		*	mg/L	0.001	0.003	03/20/17 15:59	mfm
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/15/17 16:45	gss
Sodium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/15/17 16:45	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/15/17 16:45	gss
Uranium, dissolved	M200.8 ICP-MS	10	0.059		*	mg/L	0.001	0.005	03/16/17 20:06	mfm
Vanadium, dissolved	M200.7 ICP	5	1.49		*	mg/L	0.03	0.1	03/15/17 16:45	gss
Zinc, dissolved	M200.7 ICP	5	0.14	B	*	mg/L	0.05	0.3	03/15/17 16:45	gss

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35957***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419687													
WG419687ICV	ICV	03/20/17 14:26	MS170301-3	.05		.04953	mg/L	99	90	110			
WG419687ICB	ICB	03/20/17 14:29				U	mg/L		-0.0006	0.0006			
WG419687LFB	LFB	03/20/17 14:32	MS170220-2	.0501		.04961	mg/L	99	85	115			
L35945-01AS	AS	03/20/17 15:06	MS170220-2	.0501	.0003	.05286	mg/L	105	70	130			
L35945-01ASD	ASD	03/20/17 15:09	MS170220-2	.0501	.0003	.0537	mg/L	107	70	130	2	20	
WG421273													
WG421273ICV	ICV	04/17/17 17:33	MS170404-2	.05		.0501	mg/L	100	90	110			
WG421273ICB	ICB	04/17/17 17:37				U	mg/L		-0.0006	0.0006			
WG421273LFB	LFB	04/17/17 17:40	MS170321-3	.0501		.05024	mg/L	100	85	115			
L36435-03AS	AS	04/17/17 18:16	MS170321-3	.1002	.001	.1008	mg/L	100	70	130			
L36435-04ASD	ASD	04/17/17 18:25	MS170321-3	.1002	.0007	.10008	mg/L	99	70	130	4	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	2		1.9318	mg/L	97	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.009	0.009			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	.5005		.4691	mg/L	94	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	.5005	U	.4662	mg/L	93	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	.5005	U	.4619	mg/L	92	85	115	1	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419550													
WG419550ICV	ICV	03/16/17 18:34	MS170301-3	.05		.05035	mg/L	101	90	110			
WG419550ICB	ICB	03/16/17 18:37				U	mg/L		-0.0003	0.0003			
WG419550LFB	LFB	03/16/17 18:40	MS170220-2	.05005		.05049	mg/L	101	85	115			
L35873-04AS	AS	03/16/17 19:39	MS170220-2	.05005	.0004	.04932	mg/L	98	70	130			
L35873-04ASD	ASD	03/16/17 19:42	MS170220-2	.05005	.0004	.04961	mg/L	98	70	130	1	20	
WG419609													
WG419609ICV	ICV	03/17/17 16:23	MS170301-3	.05		.04875	mg/L	98	90	110			
WG419609ICB	ICB	03/17/17 16:26				U	mg/L		-0.0003	0.0003			
WG419609LFB	LFB	03/17/17 16:29	MS170220-2	.05005		.04906	mg/L	98	85	115			
L35880-08AS	AS	03/17/17 17:31	MS170220-2	.05005	U	.04812	mg/L	96	70	130			
L35880-08ASD	ASD	03/17/17 17:34	MS170220-2	.05005	U	.04478	mg/L	89	70	130	7	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	100		96.67	mg/L	97	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.3	0.3			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	67.99026		64.43	mg/L	95	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	67.99026	126	184.1	mg/L	85	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	67.99026	126	182.8	mg/L	84	85	115	1	20	MA

CAMECO Resources

ACZ Project ID: ***L35957***

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419550													
WG419550ICV	ICV	03/16/17 18:34	MS170301-3	.05		.04959	mg/L	99	90	110			
WG419550ICB	ICB	03/16/17 18:37				U	mg/L		-0.0015	0.0015			
WG419550LFB	LFB	03/16/17 18:40	MS170220-2	.05		.04881	mg/L	98	85	115			
L35873-04AS	AS	03/16/17 19:39	MS170220-2	.05	.0006	.04931	mg/L	97	70	130			
L35873-04ASD	ASD	03/16/17 19:42	MS170220-2	.05	.0006	.04864	mg/L	96	70	130	1	20	
WG419609													
WG419609ICV	ICV	03/17/17 16:23	MS170301-3	.05		.0488	mg/L	98	90	110			
WG419609ICB	ICB	03/17/17 16:26				U	mg/L		-0.0015	0.0015			
WG419609LFB	LFB	03/17/17 16:29	MS170220-2	.05		.04883	mg/L	98	85	115			
L35880-08AS	AS	03/17/17 17:31	MS170220-2	.05	.0019	.04948	mg/L	95	70	130			
L35880-08ASD	ASD	03/17/17 17:34	MS170220-2	.05	.0019	.04599	mg/L	88	70	130	7	20	

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	2		1.951	mg/L	98	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.03	0.03			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	.5005		.462	mg/L	92	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	.5005	U	.465	mg/L	93	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	.5005	U	.464	mg/L	93	85	115	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	2		1.93	mg/L	97	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.06	0.06			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	1.0017		.951	mg/L	95	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	1.0017	.84	1.747	mg/L	91	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	1.0017	.84	1.735	mg/L	89	85	115	1	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	100		97.49	mg/L	97	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.6	0.6			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	50.00074		43.19	mg/L	86	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	50.00074	23	65.65	mg/L	85	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	50.00074	23	64.9	mg/L	84	85	115	1	20	MA

Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	2		1.8992	mg/L	95	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.015	0.015			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	.5		.4708	mg/L	94	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	.5	.664	1.09	mg/L	85	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	.5	.664	1.083	mg/L	84	85	115	1	20	MA

CAMECO Resources

ACZ Project ID: ***L35957***

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	2		1.997	mg/L	100	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.06	0.06			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	.4995		.48	mg/L	96	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	.4995	U	.474	mg/L	95	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	.4995	U	.475	mg/L	95	85	115	0	20	

Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	2.002		1.9782	mg/L	99	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.024	0.024			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	.498		.4706	mg/L	94	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	.498	U	.4575	mg/L	92	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	.498	U	.4606	mg/L	92	85	115	1	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	20		19.39	mg/L	97	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.6	0.6			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	99.96532		92.68	mg/L	93	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	99.96532	1.7	97.45	mg/L	96	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	99.96532	1.7	96.55	mg/L	95	85	115	1	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419609													
WG419609ICV	ICV	03/17/17 16:23	MS170301-3	.05		.04961	mg/L	99	90	110			
WG419609ICB	ICB	03/17/17 16:26				U	mg/L		-0.0003	0.0003			
WG419609LFB	LFB	03/17/17 16:29	MS170220-2	.05005		.04972	mg/L	99	85	115			
L35880-08AS	AS	03/17/17 17:31	MS170220-2	.05005	.0009	.05507	mg/L	108	70	130			
L35880-08ASD	ASD	03/17/17 17:34	MS170220-2	.05005	.0009	.05137	mg/L	101	70	130	7	20	
WG419687													
WG419687ICV	ICV	03/20/17 14:26	MS170301-3	.05		.05188	mg/L	104	90	110			
WG419687ICB	ICB	03/20/17 14:29				.0001	mg/L		-0.0003	0.0003			
WG419687LFB	LFB	03/20/17 14:32	MS170220-2	.05005		.04931	mg/L	99	85	115			
L35945-01AS	AS	03/20/17 15:06	MS170220-2	.05005	.0007	.0517	mg/L	102	70	130			
L35945-01ASD	ASD	03/20/17 15:09	MS170220-2	.05005	.0007	.05313	mg/L	105	70	130	3	20	

Silver, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	1.002		1.004	mg/L	100	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.03	0.03			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	.501		.481	mg/L	96	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	.501	U	.394	mg/L	79	85	115			M2 ZA
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	.501	U	.382	mg/L	76	85	115	3	20	M2 ZA

CAMECO Resources

ACZ Project ID: ***L35957***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	100		98.98	mg/L	99	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.6	0.6			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	100.0322		94.03	mg/L	94	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	100.0322	17.6	113.3	mg/L	96	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	100.0322	17.6	112.3	mg/L	95	85	115	1	20	

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	2		1.9648	mg/L	98	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.015	0.015			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	.5015		.4743	mg/L	95	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	.5015	.893	1.326	mg/L	86	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	.5015	.893	1.318	mg/L	85	85	115	1	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419550													
WG419550ICV	ICV	03/16/17 18:34	MS170301-3	.05		.0513	mg/L	103	90	110			
WG419550ICB	ICB	03/16/17 18:37				U	mg/L		-0.0003	0.0003			
WG419550LFB	LFB	03/16/17 18:40	MS170220-2	.05		.05193	mg/L	104	85	115			
L35873-04AS	AS	03/16/17 19:39	MS170220-2	.05	.0002	.05403	mg/L	108	70	130			
L35873-04ASD	ASD	03/16/17 19:42	MS170220-2	.05	.0002	.0538	mg/L	107	70	130	0	20	
WG419609													
WG419609ICV	ICV	03/17/17 16:23	MS170301-3	.05		.04978	mg/L	100	90	110			
WG419609ICB	ICB	03/17/17 16:26				U	mg/L		-0.0003	0.0003			
WG419609LFB	LFB	03/17/17 16:29	MS170220-2	.05		.0507	mg/L	101	85	115			
L35880-08AS	AS	03/17/17 17:31	MS170220-2	.05	.0007	.05614	mg/L	111	70	130			
L35880-08ASD	ASD	03/17/17 17:34	MS170220-2	.05	.0007	.05255	mg/L	104	70	130	7	20	

Vanadium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	2		1.976	mg/L	99	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.015	0.015			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	.4985		.4778	mg/L	96	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	.4985	U	.4841	mg/L	97	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	.4985	U	.479	mg/L	96	85	115	1	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG419473													
WG419473ICV	ICV	03/15/17 15:22	II170201-1	2		1.992	mg/L	100	95	105			
WG419473ICB	ICB	03/15/17 15:28				U	mg/L		-0.03	0.03			
WG419473LFB	LFB	03/15/17 15:41	II170220-2	.4942		.493	mg/L	100	85	115			
L35970-02AS	AS	03/15/17 17:00	II170220-2	.4942	U	.494	mg/L	100	85	115			
L35970-02ASD	ASD	03/15/17 17:03	II170220-2	.4942	U	.492	mg/L	100	85	115	0	20	

CAMECO Resources ACZ Project ID: ***L35957***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35957-01	WG419687	Arsenic, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
	WG419609	Cadmium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG419473	Calcium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG419609	Chromium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
	WG419473	Magnesium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
L35957-02	WG419687	Arsenic, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
	WG419473	Calcium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Magnesium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG419687	Selenium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
	WG419473	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
L35957-03	WG419687	Arsenic, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
	WG419473	Calcium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Magnesium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG419609	Selenium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG419473	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.

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Inorganic Extended Qualifier Report

CAMECO Resources ACZ Project ID: ***L35957***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35957-04	WG419687	Arsenic, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
	WG419609	Cadmium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
	WG419473	Calcium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Magnesium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
L35957-05	WG419550	Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG419473	Calcium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Magnesium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-2 487.5-488.5 STEP 1
Locator:

ACZ Sample ID: ***L35957-01***
Date Sampled: *09/12/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:17		520	5	0.37	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-2 487.5-488.5 STEP 2
Locator:

ACZ Sample ID: ***L35957-02***
Date Sampled: *09/12/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:18		140	2	0.2	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-2 487.5-488.5 STEP 3
Locator:

ACZ Sample ID: ***L35957-03***
Date Sampled: *09/12/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:20		560	7.5	1.8	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-2 487.5-488.5 STEP 4
Locator:

ACZ Sample ID: ***L35957-04***
Date Sampled: *09/12/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:21		34	1.5	0.87	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-2 487.5-488.5 STEP 5
Locator:

ACZ Sample ID: ***L35957-05***
Date Sampled: *09/12/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:23		29	1.3	0.43	pCi/L	*	tjr

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

Radiochemistry QC Summary

CAMECO Resources

ACZ Project ID: ***L35957***

Radium 226 M903.1 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
WG422018																
WG420964PBW	PBW	04/27/17						.1	0.07	0.23			0.46			
WG420964LCSW	LCSW	04/27/17	PCN52689	20				19	0.44	0.05	95	43	148			
L35955-02DUP	DUP-RER	04/27/17			52	1.7	0.6	34	1.4	0.57				8.17	2	RM
L35956-02DUP	DUP-RER	04/27/17			87	2	0.4	62	2.7	0.57				7.44	2	RM
L35958-02MS	MS	04/27/17	PCN52689	200	4.9	0.4	0.23	210	5.3	0.68	103	43	148			

CAMECO Resources ACZ Project ID: ***L35957***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35957-01	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35957-02	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35957-03	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35957-04	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35957-05	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	H3	Sample was received and analyzed past holding time.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

Radiochemistry

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Radium 226	M903.1

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35957
Date Received: 03/13/2017 09:53
Received By:
Date Printed: 3/13/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
UNKNOWN		NA		

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35957
Date Received: 03/13/2017 09:53
Received By:
Date Printed: 3/13/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 28, 2017

Report to:
Jim Clay
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

cc: Janet Schramke

Bill to:
Mary Anne Valentine
CAMECO Resources
PO Box 1210
Glenrock, WY 82637

Project ID: 4500546123
ACZ Project ID: L35958

Jim Clay:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 13, 2017. This project has been assigned to ACZ's project number, L35958. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L35958. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 28, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

CAMECO Resources

April 28, 2017

Project ID: 4500546123
ACZ Project ID: L35958

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 miscellaneous samples from CAMECO Resources on March 13, 2017. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L35958. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. This project is a client requested sequential leaching process. The reagents and protocols utilized come from the 'Trace metal occurrence in a mineralised and a non-mineralised spodosol in Northern Sweden', Land and others. Published in the Journal of Geochemical Exploration 75 (2002) 71-91.

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-4 516-517 STEP 1

ACZ Sample ID: ***L35958-01***
Date Sampled: *10/18/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.003	B	*	mg/L	0.002	0.01	03/31/17 20:19	enb
Barium, dissolved	M200.7 ICP	10	0.05	B	*	mg/L	0.03	0.2	03/27/17 19:39	gss
Cadmium, dissolved	M200.8 ICP-MS	10		U	*	mg/L	0.001	0.005	03/31/17 20:19	enb
Calcium, dissolved	M200.7 ICP	10	35		*	mg/L	1	5	03/27/17 19:39	gss
Chromium, dissolved	M200.8 ICP-MS	10		U	*	mg/L	0.005	0.02	03/31/17 20:19	enb
Copper, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/27/17 19:39	gss
Iron, dissolved	M200.7 ICP	10	0.2	B	*	mg/L	0.2	0.5	03/27/17 19:39	gss
Magnesium, dissolved	M200.7 ICP	10	6	B	*	mg/L	2	10	03/27/17 19:39	gss
Manganese, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/27/17 19:39	gss
Molybdenum, dissolved	M200.7 ICP	10		U	*	mg/L	0.2	1	03/27/17 19:39	gss
Nickel, dissolved	M200.7 ICP	10		U	*	mg/L	0.08	0.4	03/27/17 19:39	gss
Potassium, dissolved	M200.7 ICP	10	6	B	*	mg/L	2	10	03/27/17 19:39	gss
Selenium, dissolved	M200.8 ICP-MS	10	0.002	B	*	mg/L	0.001	0.003	03/31/17 20:19	enb
Silver, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.3	03/27/17 19:39	gss
Sodium, dissolved	M200.7 ICP	20	13900		*	mg/L	4	20	03/28/17 12:33	aeb
Strontium, dissolved	M200.7 ICP	10	0.32		*	mg/L	0.05	0.3	03/27/17 19:39	gss
Uranium, dissolved	M200.8 ICP-MS	10	0.029		*	mg/L	0.001	0.005	03/31/17 20:19	enb
Vanadium, dissolved	M200.7 ICP	10		U	*	mg/L	0.05	0.3	03/27/17 19:39	gss
Zinc, dissolved	M200.7 ICP	10		U	*	mg/L	0.1	0.5	03/27/17 19:39	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-4 516-517 STEP 2

ACZ Sample ID: ***L35958-02***
Date Sampled: *10/18/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.007	B	*	mg/L	0.002	0.01	03/31/17 20:23	enb
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/27/17 19:43	gss
Cadmium, dissolved	M200.8 ICP-MS	10		U	*	mg/L	0.001	0.005	03/31/17 20:23	enb
Calcium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	03/27/17 19:43	gss
Chromium, dissolved	M200.8 ICP-MS	10	0.006	B	*	mg/L	0.005	0.02	03/31/17 20:23	enb
Copper, dissolved	M200.7 ICP	5	0.06	B	*	mg/L	0.05	0.3	03/27/17 19:43	gss
Iron, dissolved	M200.7 ICP	5	1.4		*	mg/L	0.1	0.3	03/27/17 19:43	gss
Magnesium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/27/17 19:43	gss
Manganese, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/27/17 19:43	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/27/17 19:43	gss
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/27/17 19:43	gss
Potassium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/27/17 19:43	gss
Selenium, dissolved	M200.8 ICP-MS	10		U	*	mg/L	0.001	0.003	03/31/17 20:23	enb
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/27/17 19:43	gss
Sodium, dissolved	M200.7 ICP	10	7870		*	mg/L	2	10	03/28/17 12:37	aeb
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/27/17 19:43	gss
Uranium, dissolved	M200.8 ICP-MS	10	0.021		*	mg/L	0.001	0.005	03/31/17 20:23	enb
Vanadium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/27/17 19:43	gss
Zinc, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/27/17 19:43	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-4 516-517 STEP 3

ACZ Sample ID: ***L35958-03***
Date Sampled: *10/18/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	10	0.014		*	mg/L	0.002	0.01	03/31/17 20:26	enb
Barium, dissolved	M200.7 ICP	1	0.034		*	mg/L	0.003	0.02	03/27/17 19:46	gss
Cadmium, dissolved	M200.8 ICP-MS	10	0.003	B	*	mg/L	0.001	0.005	03/31/17 20:26	enb
Calcium, dissolved	M200.7 ICP	1	7.7		*	mg/L	0.1	0.5	03/27/17 19:46	gss
Chromium, dissolved	M200.8 ICP-MS	10	0.082		*	mg/L	0.005	0.02	03/31/17 20:26	enb
Copper, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	03/27/17 19:46	gss
Iron, dissolved	M200.7 ICP	1	75.7		*	mg/L	0.02	0.05	03/27/17 19:46	gss
Magnesium, dissolved	M200.7 ICP	1	17.3		*	mg/L	0.2	1	03/27/17 19:46	gss
Manganese, dissolved	M200.7 ICP	1	0.272		*	mg/L	0.005	0.03	03/27/17 19:46	gss
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	03/27/17 19:46	gss
Nickel, dissolved	M200.7 ICP	1	0.083		*	mg/L	0.008	0.04	03/27/17 19:46	gss
Potassium, dissolved	M200.7 ICP	1	1.3		*	mg/L	0.2	1	03/27/17 19:46	gss
Selenium, dissolved	M200.8 ICP-MS	10		U	*	mg/L	0.001	0.003	03/31/17 20:26	enb
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	03/27/17 19:46	gss
Sodium, dissolved	M200.7 ICP	1	64.7		*	mg/L	0.2	1	03/27/17 19:46	gss
Strontium, dissolved	M200.7 ICP	1	0.019	B	*	mg/L	0.005	0.03	03/27/17 19:46	gss
Uranium, dissolved	M200.8 ICP-MS	10	0.067		*	mg/L	0.001	0.005	03/31/17 20:26	enb
Vanadium, dissolved	M200.7 ICP	1	0.071		*	mg/L	0.005	0.03	03/27/17 19:46	gss
Zinc, dissolved	M200.7 ICP	1	0.20		*	mg/L	0.01	0.05	03/27/17 19:46	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-4 516-517 STEP 4

ACZ Sample ID: ***L35958-04***
Date Sampled: *10/18/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	20		U	*	mg/L	0.004	0.02	03/31/17 20:29	enb
Barium, dissolved	M200.7 ICP	5		U	*	mg/L	0.02	0.08	03/27/17 19:49	gss
Cadmium, dissolved	M200.8 ICP-MS	20		U	*	mg/L	0.002	0.01	03/31/17 20:29	enb
Calcium, dissolved	M200.7 ICP	5	1.1	B	*	mg/L	0.5	3	03/27/17 19:49	gss
Chromium, dissolved	M200.8 ICP-MS	20	0.05		*	mg/L	0.01	0.04	03/31/17 20:29	enb
Copper, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/27/17 19:49	gss
Iron, dissolved	M200.7 ICP	5	15.0		*	mg/L	0.1	0.3	03/27/17 19:49	gss
Magnesium, dissolved	M200.7 ICP	5	5		*	mg/L	1	5	03/27/17 19:49	gss
Manganese, dissolved	M200.7 ICP	5	0.10		*	mg/L	0.03	0.1	03/27/17 19:49	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/27/17 19:49	gss
Nickel, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	03/27/17 19:49	gss
Potassium, dissolved	M200.7 ICP	5		U	*	mg/L	1	5	03/27/17 19:49	gss
Selenium, dissolved	M200.8 ICP-MS	20		U	*	mg/L	0.002	0.005	03/31/17 20:29	enb
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/27/17 19:49	gss
Sodium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/27/17 19:49	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/27/17 19:49	gss
Uranium, dissolved	M200.8 ICP-MS	20	0.025		*	mg/L	0.002	0.01	03/31/17 20:29	enb
Vanadium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/27/17 19:49	gss
Zinc, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	03/27/17 19:49	gss

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-4 516-517 STEP 5

ACZ Sample ID: ***L35958-05***
Date Sampled: *10/18/16 00:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	50	0.19		*	mg/L	0.01	0.05	03/31/17 20:32	enb
Barium, dissolved	M200.7 ICP	5	0.02	B	*	mg/L	0.02	0.08	03/27/17 19:52	gss
Cadmium, dissolved	M200.8 ICP-MS	50		U	*	mg/L	0.005	0.03	03/31/17 20:32	enb
Calcium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	03/27/17 19:52	gss
Chromium, dissolved	M200.8 ICP-MS	50		U	*	mg/L	0.03	0.1	03/31/17 20:32	enb
Copper, dissolved	M200.7 ICP	5	0.07	B	*	mg/L	0.05	0.3	03/27/17 19:52	gss
Iron, dissolved	M200.7 ICP	5	78.0		*	mg/L	0.1	0.3	03/27/17 19:52	gss
Magnesium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/27/17 19:52	gss
Manganese, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/27/17 19:52	gss
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	03/27/17 19:52	gss
Nickel, dissolved	M200.7 ICP	5	0.06	B	*	mg/L	0.04	0.2	03/27/17 19:52	gss
Potassium, dissolved	M200.7 ICP	5	4470		*	mg/L	1	5	03/27/17 19:52	gss
Selenium, dissolved	M200.8 ICP-MS	50	0.008	B	*	mg/L	0.005	0.01	03/31/17 20:32	enb
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	03/27/17 19:52	gss
Sodium, dissolved	M200.7 ICP	5	2	B	*	mg/L	1	5	03/27/17 19:52	gss
Strontium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/27/17 19:52	gss
Uranium, dissolved	M200.8 ICP-MS	50	0.099		*	mg/L	0.005	0.03	03/31/17 20:32	enb
Vanadium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	03/27/17 19:52	gss
Zinc, dissolved	M200.7 ICP	5	0.27	B	*	mg/L	0.05	0.3	03/27/17 19:52	gss

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

CAMECO Resources

ACZ Project ID: ***L35958***

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420435													
WG420435ICV	ICV	03/31/17 18:48	MS170301-3	.05		.05224	mg/L	104	90	110			
WG420435ICB	ICB	03/31/17 18:51				U	mg/L		-0.0006	0.0006			
WG420435LFB	LFB	03/31/17 18:54	MS170321-3	.0501		.0482	mg/L	96	85	115			
L36132-01AS	AS	03/31/17 19:20	MS170321-3	.0501	.0052	.0555	mg/L	100	70	130			
L36132-01ASD	ASD	03/31/17 19:30	MS170321-3	.0501	.0052	.05412	mg/L	98	70	130	3	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	2		1.9558	mg/L	98	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.009	0.009			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	.5005		.4962	mg/L	99	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	.5005	.046	.5465	mg/L	100	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	.5005	.046	.5482	mg/L	100	85	115	0	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420435													
WG420435ICV	ICV	03/31/17 18:48	MS170301-3	.05		.05164	mg/L	103	90	110			
WG420435ICB	ICB	03/31/17 18:51				U	mg/L		-0.0003	0.0003			
WG420435LFB	LFB	03/31/17 18:54	MS170321-3	.05005		.04707	mg/L	94	85	115			
L36132-01AS	AS	03/31/17 19:20	MS170321-3	.05005	U	.0508	mg/L	101	70	130			
L36132-01ASD	ASD	03/31/17 19:30	MS170321-3	.05005	U	.05007	mg/L	100	70	130	1	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	100		98.52	mg/L	99	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.3	0.3			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	67.99026		67.8	mg/L	100	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	67.99026	78.1	143.2	mg/L	96	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	67.99026	78.1	143.1	mg/L	96	85	115	0	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420435													
WG420435ICV	ICV	03/31/17 18:48	MS170301-3	.05		.05203	mg/L	104	90	110			
WG420435ICB	ICB	03/31/17 18:51				U	mg/L		-0.0015	0.0015			
WG420435LFB	LFB	03/31/17 18:54	MS170321-3	.05		.04815	mg/L	96	85	115			
L36132-01AS	AS	03/31/17 19:20	MS170321-3	.05	U	.04792	mg/L	96	70	130			
L36132-01ASD	ASD	03/31/17 19:30	MS170321-3	.05	U	.04747	mg/L	95	70	130	1	20	

CAMECO Resources

ACZ Project ID: ***L35958***

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	2		1.96	mg/L	98	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.03	0.03			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	.5005		.487	mg/L	97	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	.5005	U	.495	mg/L	99	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	.5005	U	.496	mg/L	99	85	115	0	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	2		1.958	mg/L	98	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.06	0.06			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	1.0017		1.008	mg/L	101	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	1.0017	.06	1.052	mg/L	100	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	1.0017	.06	1.055	mg/L	100	85	115	0	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	100		99.69	mg/L	100	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.6	0.6			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	50.00074		46.04	mg/L	92	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	50.00074	20	65.75	mg/L	91	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	50.00074	20	65.56	mg/L	91	85	115	0	20	

Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	2		1.935	mg/L	97	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.015	0.015			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	.5		.4998	mg/L	100	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	.5	.008	.5095	mg/L	100	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	.5	.008	.509	mg/L	100	85	115	0	20	

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	2		2.028	mg/L	101	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.06	0.06			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	.4995		.499	mg/L	100	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	.4995	U	.509	mg/L	102	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	.4995	U	.502	mg/L	101	85	115	1	20	

CAMECO Resources

ACZ Project ID: ***L35958***

Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	2.002		1.9855	mg/L	99	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.024	0.024			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	.498		.4868	mg/L	98	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	.498	U	.4863	mg/L	98	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	.498	U	.49	mg/L	98	85	115	1	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	20		19.7	mg/L	99	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.6	0.6			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	99.96532		96.43	mg/L	96	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	99.96532	3.8	102.4	mg/L	99	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	99.96532	3.8	102.1	mg/L	98	85	115	0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420435													
WG420435ICV	ICV	03/31/17 18:48	MS170301-3	.05		.05314	mg/L	106	90	110			
WG420435ICB	ICB	03/31/17 18:51				U	mg/L		-0.0003	0.0003			
WG420435LFB	LFB	03/31/17 18:54	MS170321-3	.05005		.04602	mg/L	92	85	115			
L36132-01AS	AS	03/31/17 19:20	MS170321-3	.05005	.0019	.04939	mg/L	95	70	130			
L36132-01ASD	ASD	03/31/17 19:30	MS170321-3	.05005	.0019	.0477	mg/L	92	70	130	3	20	

Silver, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	1.002		1.016	mg/L	101	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.03	0.03			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	.5		.481	mg/L	96	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	.5	U	.28	mg/L	56	85	115			M2 ZA
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	.5	U	.262	mg/L	52	85	115	7	20	M2 ZA

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	100		99.88	mg/L	100	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.6	0.6			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	100.0322		98.47	mg/L	98	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	100.0322	6.8	107	mg/L	100	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	100.0322	6.8	106.9	mg/L	100	85	115	0	20	
WG420167													
WG420167ICV	ICV	03/28/17 12:11	II170316-1	100		101.63	mg/L	102	95	105			
WG420167ICB	ICB	03/28/17 12:18				U	mg/L		-0.6	0.6			
WG420167LFB	LFB	03/28/17 12:30	II170317-5	100.0322		100.5	mg/L	100	85	115			
L36124-01AS	AS	03/28/17 12:49	II170317-5	100.0322	17.8	115.1	mg/L	97	85	115			
L36124-01ASD	ASD	03/28/17 12:53	II170317-5	100.0322	17.8	116.1	mg/L	98	85	115	1	20	

CAMECO Resources

ACZ Project ID: ***L35958***

Strontium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	2		1.99	mg/L	100	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.015	0.015			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	.5015		.4981	mg/L	99	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	.5015	.264	.757	mg/L	98	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	.5015	.264	.7566	mg/L	98	85	115	0	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420435													
WG420435ICV	ICV	03/31/17 18:48	MS170301-3	.05		.05157	mg/L	103	90	110			
WG420435ICB	ICB	03/31/17 18:51				U	mg/L		-0.0003	0.0003			
WG420435LFB	LFB	03/31/17 18:54	MS170321-3	.05		.04744	mg/L	95	85	115			
L36132-01AS	AS	03/31/17 19:20	MS170321-3	.05	.0059	.05782	mg/L	104	70	130			
L36132-01ASD	ASD	03/31/17 19:30	MS170321-3	.05	.0059	.05778	mg/L	104	70	130	0	20	

Vanadium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	2		2.0305	mg/L	102	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.015	0.015			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	.4985		.5042	mg/L	101	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	.4985	U	.5065	mg/L	102	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	.4985	U	.5062	mg/L	102	85	115	0	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG420090													
WG420090ICV	ICV	03/27/17 19:18	II170316-1	2		1.976	mg/L	99	95	105			
WG420090ICB	ICB	03/27/17 19:24				U	mg/L		-0.03	0.03			
WG420090LFB	LFB	03/27/17 19:36	II170317-5	.4942		.517	mg/L	105	85	115			
L36113-02AS	AS	03/27/17 20:02	II170317-5	.4942	.01	.529	mg/L	105	85	115			
L36113-02ASD	ASD	03/27/17 20:05	II170317-5	.4942	.01	.52	mg/L	103	85	115	2	20	

ACZ Laboratories, Inc.
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Inorganic Extended Qualifier Report

CAMECO Resources ACZ Project ID: ***L35958***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35958-01	WG420435	Arsenic, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG420090	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG420435	Cadmium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Chromium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG420090	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Iron, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG420435	Selenium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG420090	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
L35958-02	WG420435	Arsenic, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG420090	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG420435	Cadmium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG420090	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG420435	Chromium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG420090	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG420435	Selenium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG420090	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

CAMECO Resources ACZ Project ID: ***L35958***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35958-03	WG420435	Cadmium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Selenium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG420090	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
L35958-04	WG420435	Arsenic, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG420090	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG420435	Chromium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG420090	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Potassium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG420435	Selenium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG420090	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

Inorganic Extended Qualifier Report

CAMECO Resources ACZ Project ID: ***L35958***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35958-05	WG420090	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG420435	Cadmium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG420090	Calcium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG420435	Chromium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG420090	Copper, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Manganese, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG420435	Selenium, dissolved	M200.8 ICP-MS	D1	Sample required dilution due to matrix.
			M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG420090	Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Zinc, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-4 516-517 STEP 1
Locator:

ACZ Sample ID: ***L35958-01***
Date Sampled: *10/18/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:24		58	1.8	0.67	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-4 516-517 STEP 2
Locator:

ACZ Sample ID: ***L35958-02***
Date Sampled: *10/18/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:25		4.9	0.4	0.23	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-4 516-517 STEP 3
Locator:

ACZ Sample ID: ***L35958-03***
Date Sampled: *10/18/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:27		29	1.6	0.4	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-4 516-517 STEP 4
Locator:

ACZ Sample ID: ***L35958-04***
Date Sampled: *10/18/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:28		7.2	0.76	0.46	pCi/L	*	tjr

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RadioChemistry Analytical Results

CAMECO Resources
Project ID: 4500546123
Sample ID: DG-4 516-517 STEP 5
Locator:

ACZ Sample ID: ***L35958-05***
Date Sampled: *10/18/16 0:00*
Date Received: *03/13/17*
Sample Matrix: *Leachate*

Radium 226 Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226	04/27/17 0:30		6.6	0.71	0.63	pCi/L	*	tjr

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

Radiochemistry QC Summary

CAMECO Resources

ACZ Project ID: ***L35958***

Radium 226 M903.1 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
WG422018																
WG420964PBW	PBW	04/27/17						.1	0.07	0.23			0.46			
WG420964LCSW	LCSW	04/27/17	PCN52689	20				19	0.44	0.05	95	43	148			
L35955-02DUP	DUP-RER	04/27/17			52	1.7	0.6	34	1.4	0.57				8.17	2	RM
L35956-02DUP	DUP-RER	04/27/17			87	2	0.4	62	2.7	0.57				7.44	2	RM
L35958-02MS	MS	04/27/17	PCN52689	200	4.9	0.4	0.23	210	5.3	0.68	103	43	148			

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RadChem Extended Qualifier Report

CAMECO Resources ACZ Project ID: ***L35958***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L35958-01	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35958-02	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35958-03	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35958-04	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
L35958-05	*N*G422018	Radium 226	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.8 ICP-MS
Copper, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Uranium, dissolved	M200.8 ICP-MS
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

Radiochemistry

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Radium 226	M903.1

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Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35958
Date Received: 03/13/2017 09:57
Received By:
Date Printed: 3/13/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
UNKNOWN		NA		

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
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Sample Receipt

CAMECO Resources
4500546123

ACZ Project ID: L35958
Date Received: 03/13/2017 09:57
Received By:
Date Printed: 3/13/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).