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

Revised Analytical Report

September 09, 2020

Report to:
Kent Applegate
Rio Algom Mining Company
P.O. Box 218
Grants, NM 87020

Bill to:
Accounts Payable
Rio Algom Mining Company
P.O. Box 218
Grants, NM 87020

cc: Clark Short, Angela Persico, Michaella Gorospe

Project ID: 4508122295
ACZ Project ID: L60695

Kent Applegate:

Enclosed are revised analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 06, 2020 and originally reported on September 09, 2020. Refer to the case narrative for an explanation of the changes. This project was assigned to ACZ's project number, L60695. 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 L60695. 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 October 09, 2020. 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.

Rio Algom Mining Company

September 09, 2020

Project ID: 4508122295
ACZ Project ID: L60695

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 groundwater samples from Rio Algom Mining Company on August 6, 2020. 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 L60695. 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 has been revised to report a re-analysis of dissolved Beryllium on L60695-02.

Rio Algom Mining Company
Project ID: 4508122295
Sample ID: 36-02 TRB

ACZ Sample ID: ***L60695-01***
Date Sampled: *08/03/20 11:13*
Date Received: *08/06/20*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	5	339		*	mg/L	0.5	3	08/12/20 13:07	jlw
Iron, dissolved	M200.7 ICP	5	16.0			mg/L	0.3	0.8	08/12/20 13:07	jlw
Magnesium, dissolved	M200.7 ICP	5	1140			mg/L	1	5	08/12/20 13:07	jlw
Molybdenum, dissolved	M200.8 ICP-MS	5		U		mg/L	0.001	0.003	08/20/20 16:39	bsu
Nickel, dissolved	M200.8 ICP-MS	5	0.005			mg/L	0.002	0.005	08/20/20 16:39	bsu
Potassium, dissolved	M200.7 ICP	5	16			mg/L	1	5	08/12/20 13:07	jlw
Selenium, dissolved	SM 3114 B, AA-Hydride	1		U		mg/L	0.002	0.005	08/13/20 14:43	slm
Sodium, dissolved	M200.7 ICP	5	671			mg/L	1	5	08/12/20 13:07	jlw
Uranium, dissolved	M200.8 ICP-MS	5	0.0036			mg/L	0.0005	0.003	08/20/20 16:39	bsu

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	1390			mg/L	2	20	08/10/20 0:00	emk
Carbonate as CaCO3		1		U		mg/L	2	20	08/10/20 0:00	emk
Hydroxide as CaCO3		1		U		mg/L	2	20	08/10/20 0:00	emk
Total Alkalinity		1	1390		*	mg/L	2	20	08/10/20 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-1.1			%			09/02/20 0:00	calc
Sum of Anions			144			meq/L			09/02/20 0:00	calc
Sum of Cations			141			meq/L			09/02/20 0:00	calc
Chloride	SM4500Cl-E	75	2020			mg/L	40	200	08/14/20 10:48	rbt
Conductivity @25C	SM2510B	1	10200		*	umhos/cm	1	10	08/10/20 19:59	emk
Cyanide, Total	D7511-09	1		U	*	mg/L	0.003	0.01	08/10/20 11:05	rbt
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	08/22/20 0:50	pjb
Residue, Filterable (TDS) @180C	SM2540C	5	7990			mg/L	100	200	08/06/20 21:47	jck
Sulfate	D516-02/-07/-11 - Turbidimetric	120	2820		*	mg/L	120	600	08/13/20 14:56	rbt
TDS (calculated)	Calculation		7870			mg/L			09/02/20 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.02						09/02/20 0:00	calc

Rio Algom Mining Company
Project ID: 4508122295
Sample ID: 36-06 KD

ACZ Sample ID: ***L60695-02***
Date Sampled: *08/03/20 14:44*
Date Received: *08/06/20*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Antimony, dissolved	M200.8 ICP-MS	5		U		mg/L	0.002	0.01	08/20/20 16:40	bsu
Arsenic, dissolved	M200.8 ICP-MS	5	0.004	B		mg/L	0.001	0.005	08/20/20 16:40	bsu
Barium, dissolved	M200.7 ICP	5		U		mg/L	0.04	0.2	08/12/20 13:16	jlw
Beryllium, dissolved	M200.8 ICP-MS	5	0.011			mg/L	0.0004	0.001	09/08/20 15:27	bsu
Cadmium, dissolved	M200.8 ICP-MS	5	0.0092			mg/L	0.0003	0.001	08/20/20 16:40	bsu
Calcium, dissolved	M200.7 ICP	5	496		*	mg/L	0.5	3	08/12/20 13:16	jlw
Iron, dissolved	M200.7 ICP	5	122			mg/L	0.3	0.8	08/12/20 13:16	jlw
Lead, dissolved	M200.8 ICP-MS	5	0.0005	B		mg/L	0.0005	0.003	08/20/20 16:40	bsu
Magnesium, dissolved	M200.7 ICP	5	361			mg/L	1	5	08/12/20 13:16	jlw
Molybdenum, dissolved	M200.8 ICP-MS	5		U		mg/L	0.001	0.003	08/20/20 16:40	bsu
Nickel, dissolved	M200.8 ICP-MS	5	0.221			mg/L	0.002	0.005	08/20/20 16:40	bsu
Potassium, dissolved	M200.7 ICP	5	12			mg/L	1	5	08/12/20 13:16	jlw
Selenium, dissolved	SM 3114 B, AA-Hydride	1	0.0025	B		mg/L	0.002	0.005	08/13/20 14:45	slm
Sodium, dissolved	M200.7 ICP	5	578			mg/L	1	5	08/12/20 13:16	jlw

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U		mg/L	2	20	08/10/20 0:00	emk
Carbonate as CaCO3		1		U		mg/L	2	20	08/10/20 0:00	emk
Hydroxide as CaCO3		1		U		mg/L	2	20	08/10/20 0:00	emk
Total Alkalinity		1		U	*	mg/L	2	20	08/10/20 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-9.4			%			09/09/20 0:00	calc
Sum of Anions			105			meq/L			09/09/20 0:00	calc
Sum of Cations			87			meq/L			09/09/20 0:00	calc
Chloride	SM4500Cl-E	75	1060		*	mg/L	40	200	08/14/20 10:48	rbt
Conductivity @25C	SM2510B	1	7730		*	umhos/cm	1	10	08/10/20 20:05	emk
Cyanide, Total	D7511-09	1		U		mg/L	0.003	0.01	08/10/20 11:07	rbt
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	08/22/20 0:51	pjb
Residue, Filterable (TDS) @180C	SM2540C	5	6970			mg/L	100	200	08/06/20 21:49	jck
Sulfate	D516-02/-07/-11 - Turbidimetric	120	3570		*	mg/L	120	600	08/13/20 14:56	rbt
TDS (calculated)	Calculation		6200			mg/L			09/09/20 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.12						09/09/20 0:00	calc

Rio Algom Mining Company
Project ID: 4508122295
Sample ID: 5-08 ALL-R

ACZ Sample ID: ***L60695-03***
Date Sampled: *08/04/20 17:06*
Date Received: *08/06/20*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	2	526		*	mg/L	0.2	1	08/12/20 13:19	jlw
Iron, dissolved	M200.7 ICP	2		U		mg/L	0.1	0.3	08/12/20 13:19	jlw
Magnesium, dissolved	M200.7 ICP	2	179			mg/L	0.4	2	08/12/20 13:19	jlw
Molybdenum, dissolved	M200.8 ICP-MS	2	0.0045			mg/L	0.0004	0.001	08/20/20 16:42	bsu
Nickel, dissolved	M200.8 ICP-MS	2	0.0013	B		mg/L	0.0008	0.002	08/20/20 16:42	bsu
Potassium, dissolved	M200.7 ICP	2	3.8			mg/L	0.4	2	08/12/20 13:19	jlw
Selenium, dissolved	SM 3114 B, AA-Hydride	1	0.0119			mg/L	0.002	0.005	08/13/20 14:52	slm
Sodium, dissolved	M200.7 ICP	2	309			mg/L	0.4	2	08/12/20 13:19	jlw
Uranium, dissolved	M200.8 ICP-MS	2	0.0241			mg/L	0.0002	0.001	08/20/20 16:42	bsu

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	242			mg/L	2	20	08/10/20 0:00	emk
Carbonate as CaCO3		1		U		mg/L	2	20	08/10/20 0:00	emk
Hydroxide as CaCO3		1		U		mg/L	2	20	08/10/20 0:00	emk
Total Alkalinity		1	242			mg/L	2	20	08/10/20 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			3.8			%			09/02/20 0:00	calc
Sum of Anions			51			meq/L			09/02/20 0:00	calc
Sum of Cations			55			meq/L			09/02/20 0:00	calc
Chloride	SM4500Cl-E	10	104		*	mg/L	5	20	08/14/20 10:46	rbt
Conductivity @25C	SM2510B	1	3990			umhos/cm	1	10	08/10/20 20:15	emk
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	15	26.0		*	mg/L	0.3	2	08/22/20 1:13	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	3890			mg/L	20	40	08/06/20 21:52	jck
Sulfate	D516-02/-07/-11 - Turbidimetric	120	2040		*	mg/L	120	600	08/17/20 10:54	rbt
TDS (calculated)	Calculation		3310			mg/L			09/02/20 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.18						09/02/20 0:00	calc

Rio Algom Mining Company
Project ID: 4508122295
Sample ID: 5-03 ALL-R

ACZ Sample ID: ***L60695-04***
Date Sampled: *08/05/20 09:08*
Date Received: *08/06/20*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	5	551		*	mg/L	0.5	3	08/12/20 13:23	jlw
Iron, dissolved	M200.7 ICP	5		U		mg/L	0.3	0.8	08/12/20 13:23	jlw
Magnesium, dissolved	M200.7 ICP	5	284			mg/L	1	5	08/12/20 13:23	jlw
Molybdenum, dissolved	M200.8 ICP-MS	5		U		mg/L	0.001	0.003	08/20/20 16:44	bsu
Nickel, dissolved	M200.8 ICP-MS	5	0.002	B		mg/L	0.002	0.005	08/20/20 16:44	bsu
Potassium, dissolved	M200.7 ICP	5	4	B		mg/L	1	5	08/12/20 13:23	jlw
Selenium, dissolved	SM 3114 B, AA-Hydride	1		U		mg/L	0.002	0.005	08/13/20 14:54	slm
Sodium, dissolved	M200.7 ICP	5	440			mg/L	1	5	08/12/20 13:23	jlw
Uranium, dissolved	M200.8 ICP-MS	5	0.105			mg/L	0.0005	0.003	08/20/20 16:44	bsu

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	330			mg/L	2	20	08/10/20 0:00	emk
Carbonate as CaCO3		1		U		mg/L	2	20	08/10/20 0:00	emk
Hydroxide as CaCO3		1		U		mg/L	2	20	08/10/20 0:00	emk
Total Alkalinity		1	330			mg/L	2	20	08/10/20 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-0.7			%			09/02/20 0:00	calc
Sum of Anions			71			meq/L			09/02/20 0:00	calc
Sum of Cations			70			meq/L			09/02/20 0:00	calc
Chloride	SM4500Cl-E	10	637		*	mg/L	5	20	08/14/20 11:07	rbt
Conductivity @25C	SM2510B	1	5380			umhos/cm	1	10	08/10/20 21:06	emk
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.58			mg/L	0.02	0.1	08/22/20 1:14	pjb
Residue, Filterable (TDS) @180C	SM2540C	5	4650			mg/L	100	200	08/06/20 21:54	jck
Sulfate	D516-02/-07/-11 - Turbidimetric	120	2220		*	mg/L	120	600	08/17/20 10:54	rbt
TDS (calculated)	Calculation		4340			mg/L			09/02/20 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.07						09/02/20 0:00	calc

Rio Algom Mining Company
Project ID: 4508122295
Sample ID: 31-61 ALL

ACZ Sample ID: ***L60695-05***
Date Sampled: *08/05/20 10:48*
Date Received: *08/06/20*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	10	557		*	mg/L	1	5	08/12/20 13:26	jlw
Iron, dissolved	M200.7 ICP	10		U		mg/L	0.6	2	08/12/20 13:26	jlw
Magnesium, dissolved	M200.7 ICP	10	1310			mg/L	2	10	08/12/20 13:26	jlw
Molybdenum, dissolved	M200.8 ICP-MS	10		U		mg/L	0.002	0.005	08/20/20 16:46	bsu
Nickel, dissolved	M200.8 ICP-MS	10	0.054			mg/L	0.004	0.01	08/20/20 16:46	bsu
Potassium, dissolved	M200.7 ICP	10	29			mg/L	2	10	08/12/20 13:26	jlw
Selenium, dissolved	SM 3114 B, AA-Hydride	1	0.0053			mg/L	0.002	0.005	08/13/20 14:56	slm
Sodium, dissolved	M200.7 ICP	10	1730			mg/L	2	10	08/12/20 13:26	jlw
Uranium, dissolved	M200.8 ICP-MS	10	0.703			mg/L	0.001	0.005	08/20/20 16:46	bsu

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	1930			mg/L	2	20	08/10/20 0:00	emk
Carbonate as CaCO3		1		U		mg/L	2	20	08/10/20 0:00	emk
Hydroxide as CaCO3		1		U		mg/L	2	20	08/10/20 0:00	emk
Total Alkalinity		1	1930			mg/L	2	20	08/10/20 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-3.6			%			09/02/20 0:00	calc
Sum of Anions			228			meq/L			09/02/20 0:00	calc
Sum of Cations			212			meq/L			09/02/20 0:00	calc
Chloride	SM4500Cl-E	75	2270		*	mg/L	40	200	08/14/20 11:10	rbt
Conductivity @25C	SM2510B	1	15600			umhos/cm	1	10	08/10/20 21:31	emk
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	5	11.0			mg/L	0.1	0.5	08/22/20 1:17	pjb
Residue, Filterable (TDS) @180C	SM2540C	5	13700			mg/L	100	200	08/06/20 21:57	jck
Sulfate	D516-02/-07/-11 - Turbidimetric	500	6000		*	mg/L	500	2500	08/17/20 11:04	rbt
TDS (calculated)	Calculation		13100			mg/L			09/02/20 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.05						09/02/20 0:00	calc

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:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

REP001.03.15.02

Rio Algom Mining Company ACZ Project ID: ***L60695***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503093													
WG503093PBW1	PBW	08/10/20 17:17				7.1	mg/L		-20	20			
WG503093LCSW3	LCSW	08/10/20 17:37	WC200723-2	820.0001		846	mg/L	103	90	110			
L60695-03DUP	DUP	08/10/20 20:25			242	245	mg/L				1	20	
WG503093LCSW6	LCSW	08/10/20 20:46	WC200723-2	820.0001		869	mg/L	106	90	110			
WG503093PBW2	PBW	08/10/20 20:55				U	mg/L		-20	20			
L60729-02DUP	DUP	08/10/20 22:54			176	177	mg/L				1	20	
WG503093LCSW9	LCSW	08/11/20 1:28	WC200723-2	820.0001		853	mg/L	104	90	110			
WG503093PBW3	PBW	08/11/20 1:37				U	mg/L		-20	20			
WG503093LCSW12	LCSW	08/11/20 5:06	WC200723-2	820.0001		859	mg/L	105	90	110			
WG503093PBW4	PBW	08/11/20 5:16				2.1	mg/L		-20	20			
WG503093LCSW15	LCSW	08/11/20 6:28	WC200723-2	820.0001		861	mg/L	105	90	110			

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503692													
WG503692ICV	ICV	08/20/20 16:11	MS200812-2	.02004		.01945	mg/L	97	90	110			
WG503692ICB	ICB	08/20/20 16:13				U	mg/L		-0.00088	0.00088			
WG503692LFB	LFB	08/20/20 16:15	MS200803-2	.01		.00919	mg/L	92	85	115			
L60658-02AS	AS	08/20/20 16:22	MS200803-2	.2	U	.2111	mg/L	106	70	130			
L60658-02ASD	ASD	08/20/20 16:24	MS200803-2	.2	U	.2147	mg/L	107	70	130	2	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503692													
WG503692ICV	ICV	08/20/20 16:11	MS200812-2	.05		.04876	mg/L	98	90	110			
WG503692ICB	ICB	08/20/20 16:13				U	mg/L		-0.00044	0.00044			
WG503692LFB	LFB	08/20/20 16:15	MS200803-2	.05005		.05023	mg/L	100	85	115			
L60658-02AS	AS	08/20/20 16:22	MS200803-2	1.001	.025	1.0389	mg/L	101	70	130			
L60658-02ASD	ASD	08/20/20 16:24	MS200803-2	1.001	.025	1.0506	mg/L	102	70	130	1	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503198													
WG503198ICV	ICV	08/12/20 12:19	II200810-1	2		1.9902	mg/L	100	95	105			
WG503198ICB	ICB	08/12/20 12:25				.0099	mg/L		-0.021	0.021			
WG503198LFB	LFB	08/12/20 12:38	II200805-3	.5005		.4934	mg/L	99	85	115			
L60602-01AS	AS	08/12/20 12:44	II200805-3	.5005	.04	.5253	mg/L	97	85	115			
L60602-01ASD	ASD	08/12/20 12:47	II200805-3	.5005	.04	.5259	mg/L	97	85	115	0	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG504718													
WG504718ICV	ICV	09/08/20 15:21	MS200812-2	.05		.047353	mg/L	95	90	110			
WG504718ICB	ICB	09/08/20 15:23				U	mg/L		-0.000176	0.000176			
WG504718LFB	LFB	09/08/20 15:25	MS200803-2	.05005		.050188	mg/L	100	85	115			
L61111-03AS	AS	09/08/20 15:34	MS200803-2	.05005	U	.053646	mg/L	107	70	130			
L61111-03ASD	ASD	09/08/20 15:36	MS200803-2	.05005	U	.056049	mg/L	112	70	130	4	20	

Rio Algom Mining Company ACZ Project ID: ***L60695***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503692													
WG503692ICV	ICV	08/20/20 16:11	MS200812-2	.05		.048617	mg/L	97	90	110			
WG503692ICB	ICB	08/20/20 16:13				U	mg/L		-0.00011	0.00011			
WG503692LFB	LFB	08/20/20 16:15	MS200803-2	.05005		.049034	mg/L	98	85	115			
L60658-02AS	AS	08/20/20 16:22	MS200803-2	1.001	.166	1.1562	mg/L	99	70	130			
L60658-02ASD	ASD	08/20/20 16:24	MS200803-2	1.001	.166	1.1448	mg/L	98	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
WG503198													
WG503198ICV	ICV	08/12/20 12:19	II200810-1	100		98.69	mg/L	99	95	105			
WG503198ICB	ICB	08/12/20 12:25				.37	mg/L		-0.3	0.3			BB
WG503198LFB	LFB	08/12/20 12:38	II200805-3	67.9908		67.93	mg/L	100	85	115			
L60602-01AS	AS	08/12/20 12:44	II200805-3	67.9908	61	127	mg/L	97	85	115			
L60602-01ASD	ASD	08/12/20 12:47	II200805-3	67.9908	61	125.5	mg/L	95	85	115	1	20	
L60748-06AS	AS	08/12/20 13:42	II200805-3	67.9908	.1	69.41	mg/L	102	85	115			
L60748-06ASD	ASD	08/12/20 13:45	II200805-3	67.9908	.1	67.92	mg/L	100	85	115	2	20	

Chloride SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503355													
WG503355ICB	ICB	08/14/20 9:01				U	mg/L		-1.5	1.5			
WG503355ICV	ICV	08/14/20 9:01	WI200506-2	55.055		57.61	mg/L	105	90	110			
WG503355LFB1	LFB	08/14/20 10:14	WI200327-3	30.03		30.92	mg/L	103	90	110			
L60693-03AS	AS	08/14/20 10:36	WI200327-3	30.03	16.4	48.29	mg/L	106	90	110			
L60693-04DUP	DUP	08/14/20 10:36			36.7	36.66	mg/L				0	20	
WG503355LFB2	LFB	08/14/20 10:37	WI200327-3	30.03		31.69	mg/L	106	90	110			
L60706-02AS	AS	08/14/20 10:59	WI200327-3	30.03	62.8	88.65	mg/L	86	90	110			M2
L60707-01DUP	DUP	08/14/20 10:59			60.1	59.82	mg/L				0	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503093													
WG503093LCSW2	LCSW	08/10/20 17:24	PCN61372	1410		1430	umhos/cm	101	90	110			
L60695-03DUP	DUP	08/10/20 20:25			3990	3990	umhos/cm				0	20	
WG503093LCSW5	LCSW	08/10/20 20:32	PCN61372	1410		1420	umhos/cm	101	90	110			
L60729-02DUP	DUP	08/10/20 22:54			2400	2410	umhos/cm				0	20	
WG503093LCSW8	LCSW	08/11/20 1:14	PCN61372	1410		1420	umhos/cm	101	90	110			
WG503093LCSW11	LCSW	08/11/20 4:53	PCN61372	1410		1420	umhos/cm	101	90	110			
WG503093LCSW14	LCSW	08/11/20 6:15	PCN61372	1410		1410	umhos/cm	100	90	110			

Cyanide, Total D7511-09

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503040													
WG503040ICV	ICV	08/10/20 10:49	WI200804-5	.3003		.2831	mg/L	94	90	110			
WG503040ICB	ICB	08/10/20 10:51				U	mg/L		-0.003	0.003			
L60691-01AS	AS	08/10/20 11:01	WI200804-6	.1	U	.095	mg/L	95	84	116			
L60691-01ASD	ASD	08/10/20 11:03	WI200804-6	.1	U	.0965	mg/L	97	84	116	2	20	
WG503040LFB	LFB	08/10/20 11:21	WI200804-6	.1		.092	mg/L	92	84	116			

Rio Algom Mining Company

ACZ Project ID: ***L60695***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503198													
WG503198ICV	ICV	08/12/20 12:19	II200810-1	2		1.952	mg/L	98	95	105			
WG503198ICB	ICB	08/12/20 12:25				U	mg/L		-0.18	0.18			
WG503198LFB	LFB	08/12/20 12:38	II200805-3	1.0018		1.015	mg/L	101	85	115			
L60602-01AS	AS	08/12/20 12:44	II200805-3	1.0018	.6	1.581	mg/L	98	85	115			
L60602-01ASD	ASD	08/12/20 12:47	II200805-3	1.0018	.6	1.567	mg/L	97	85	115	1	20	
L60748-06AS	AS	08/12/20 13:42	II200805-3	1.0018	U	1.008	mg/L	101	85	115			
L60748-06ASD	ASD	08/12/20 13:45	II200805-3	1.0018	U	1	mg/L	100	85	115	1	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503692													
WG503692ICV	ICV	08/20/20 16:11	MS200812-2	.05		.05151	mg/L	103	90	110			
WG503692ICB	ICB	08/20/20 16:13				U	mg/L		-0.00022	0.00022			
WG503692LFB	LFB	08/20/20 16:15	MS200803-2	.05005		.05045	mg/L	101	85	115			
L60658-02AS	AS	08/20/20 16:22	MS200803-2	1.001	U	1.042	mg/L	104	70	130			
L60658-02ASD	ASD	08/20/20 16:24	MS200803-2	1.001	U	1.0303	mg/L	103	70	130	1	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503198													
WG503198ICV	ICV	08/12/20 12:19	II200810-1	100		97.56	mg/L	98	95	105			
WG503198ICB	ICB	08/12/20 12:25				.31	mg/L		-0.6	0.6			
WG503198LFB	LFB	08/12/20 12:38	II200805-3	49.9996		48.25	mg/L	97	85	115			
L60602-01AS	AS	08/12/20 12:44	II200805-3	49.9996	10.2	58.93	mg/L	97	85	115			
L60602-01ASD	ASD	08/12/20 12:47	II200805-3	49.9996	10.2	57.9	mg/L	95	85	115	2	20	
L60748-06AS	AS	08/12/20 13:42	II200805-3	49.9996	U	49.38	mg/L	99	85	115			
L60748-06ASD	ASD	08/12/20 13:45	II200805-3	49.9996	U	48.32	mg/L	97	85	115	2	20	

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503692													
WG503692ICV	ICV	08/20/20 16:11	MS200812-2	.0199		.02027	mg/L	102	90	110			
WG503692ICB	ICB	08/20/20 16:13				U	mg/L		-0.00044	0.00044			
WG503692LFB	LFB	08/20/20 16:15	MS200803-2	.0501		.05	mg/L	100	85	115			
L60658-02AS	AS	08/20/20 16:22	MS200803-2	1.002	U	.9838	mg/L	98	70	130			
L60658-02ASD	ASD	08/20/20 16:24	MS200803-2	1.002	U	.9483	mg/L	95	70	130	4	20	
L60821-02AS	AS	08/20/20 16:59	MS200803-2	.0501	.0041	.05284	mg/L	97	70	130			
L60821-02ASD	ASD	08/20/20 17:01	MS200803-2	.0501	.0041	.05422	mg/L	100	70	130	3	20	

Rio Algom Mining Company

ACZ Project ID: ***L60695***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503692													
WG503692ICV	ICV	08/20/20 16:11	MS200812-2	.05		.05094	mg/L	102	90	110			
WG503692ICB	ICB	08/20/20 16:13				U	mg/L		-0.00088	0.00088			
WG503692LFB	LFB	08/20/20 16:15	MS200803-2	.05		.05157	mg/L	103	85	115			
L60658-02AS	AS	08/20/20 16:22	MS200803-2	1	2.01	2.9604	mg/L	95	70	130			
L60658-02ASD	ASD	08/20/20 16:24	MS200803-2	1	2.01	3.0136	mg/L	100	70	130	2	20	
L60821-02AS	AS	08/20/20 16:59	MS200803-2	.05	.0027	.04973	mg/L	94	70	130			
L60821-02ASD	ASD	08/20/20 17:01	MS200803-2	.05	.0027	.05084	mg/L	96	70	130	2	20	

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503822													
WG503822ICV	ICV	08/21/20 22:56	WI200815-1	2.416		2.305	mg/L	95	90	110			
WG503822ICB	ICB	08/21/20 22:57				U	mg/L		-0.02	0.02			
WG503823													
WG503823LFB	LFB	08/22/20 0:24	WI200331-15	2		2.053	mg/L	103	90	110			
L60658-01AS	AS	08/22/20 0:26	WI200331-15	2	U	1.948	mg/L	97	90	110			
L60658-02DUP	DUP	08/22/20 0:29			U	U	mg/L				0	20	RA
L60695-04AS	AS	08/22/20 1:16	WI200331-15	2	.58	2.611	mg/L	102	90	110			
L60695-05DUP	DUP	08/22/20 1:18			11	11.07	mg/L				1	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503198													
WG503198ICV	ICV	08/12/20 12:19	II200810-1	20		20	mg/L	100	95	105			
WG503198ICB	ICB	08/12/20 12:25				U	mg/L		-0.6	0.6			
WG503198LFB	LFB	08/12/20 12:38	II200805-3	99.96847		99.2	mg/L	99	85	115			
L60602-01AS	AS	08/12/20 12:44	II200805-3	99.96847	2.1	103.4	mg/L	101	85	115			
L60602-01ASD	ASD	08/12/20 12:47	II200805-3	99.96847	2.1	101.2	mg/L	99	85	115	2	20	
L60748-06AS	AS	08/12/20 13:42	II200805-3	99.96847	U	100.9	mg/L	101	85	115			
L60748-06ASD	ASD	08/12/20 13:45	II200805-3	99.96847	U	99.15	mg/L	99	85	115	2	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG502935													
WG502935PBW	PBW	08/06/20 21:00				U	mg/L		-20	20			
WG502935LCSW	LCSW	08/06/20 21:02	PCN61595	1000		994	mg/L	99	80	120			
L60695-05DUP	DUP	08/06/20 22:00			13700	13700	mg/L				0	10	

Rio Algom Mining Company

ACZ Project ID: ***L60695***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Selenium, dissolved SM 3114 B, AA-Hydride

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503277													
WG503277ICV	ICV	08/13/20 12:43	SE200702-2	.025		.026	mg/L	104	90	110			
WG503277ICB	ICB	08/13/20 12:45				U	mg/L		-0.006	0.006			
WG503279													
WG503279LRB	LRB	08/13/20 14:26				U	mg/L		-0.006	0.006			
WG503279LFB	LFB	08/13/20 14:28	SE200529-14	.0225		.0242	mg/L	108	85	115			
L60597-01LFM	LFM	08/13/20 14:34	SE200529-14	.0225	U	.0214	mg/L	95	85	115			
L60597-01LFMD	LFMD	08/13/20 14:37	SE200529-14	.0225	U	.0218	mg/L	97	85	115	2	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503198													
WG503198ICV	ICV	08/12/20 12:19	II200810-1	100		100.01	mg/L	100	95	105			
WG503198ICB	ICB	08/12/20 12:25				.38	mg/L		-0.6	0.6			
WG503198LFB	LFB	08/12/20 12:38	II200805-3	100.0157		98.45	mg/L	98	85	115			
L60602-01AS	AS	08/12/20 12:44	II200805-3	100.0157	9	109.2	mg/L	100	85	115			
L60602-01ASD	ASD	08/12/20 12:47	II200805-3	100.0157	9	107.5	mg/L	98	85	115	2	20	
L60748-06AS	AS	08/12/20 13:42	II200805-3	100.0157	U	100.3	mg/L	100	85	115			
L60748-06ASD	ASD	08/12/20 13:45	II200805-3	100.0157	U	98.35	mg/L	98	85	115	2	20	

Sulfate D516-02/-07/-11 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503311													
WG503311ICB	ICB	08/13/20 10:41				U	mg/L		-3	3			
WG503311ICV	ICV	08/13/20 10:41	WI200812-2	20		19.9	mg/L	100	90	110			
WG503311LFB	LFB	08/13/20 12:53	WI200803-1	10.01		9.8	mg/L	98	90	110			
L60549-03AS	AS	08/13/20 14:32	WI200803-1	10.01	U	12	mg/L	120	90	110			M1
L60694-01DUP	DUP	08/13/20 14:54			3950	3950	mg/L				0	20	
WG503449													
WG503449ICB	ICB	08/17/20 9:27				U	mg/L		-3	3			
WG503449ICV	ICV	08/17/20 9:27	WI200812-2	20		20	mg/L	100	90	110			
WG503449LFB	LFB	08/17/20 10:28	WI200803-1	10.01		11	mg/L	110	90	110			
L58118-16AS	AS	08/17/20 10:28	WI200803-1	10.01	U	10.1	mg/L	101	90	110			
L58122-20DUP	DUP	08/17/20 10:35			35.9	37.7	mg/L				5	20	RA

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503692													
WG503692ICV	ICV	08/20/20 16:11	MS200812-2	.05		.05209	mg/L	104	90	110			
WG503692ICB	ICB	08/20/20 16:13				U	mg/L		-0.00022	0.00022			
WG503692LFB	LFB	08/20/20 16:15	MS200803-2	.05		.04975	mg/L	100	85	115			
L60658-02AS	AS	08/20/20 16:22	MS200803-2	1	3.74	4.8628	mg/L	112	70	130			
L60658-02ASD	ASD	08/20/20 16:24	MS200803-2	1	3.74	4.9327	mg/L	119	70	130	1	20	
L60821-02AS	AS	08/20/20 16:59	MS200803-2	.05	.0031	.05706	mg/L	108	70	130			
L60821-02ASD	ASD	08/20/20 17:01	MS200803-2	.05	.0031	.05765	mg/L	109	70	130	1	20	

Rio Algom Mining Company ACZ Project ID: ***L60695***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L60695-01	WG503198	Calcium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG503093	Conductivity @25C	SM2510B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG503040	Cyanide, Total	D7511-09	Q3	Sample received with improper or inadequate chemical preservation.
	WG503823	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG503311	Sulfate	D516-02/-07/-11 - Turbidimetric	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG503093	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
L60695-02	WG503198	Calcium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG503355	Chloride	SM4500Cl-E	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG503093	Conductivity @25C	SM2510B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG503823	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG503311	Sulfate	D516-02/-07/-11 - Turbidimetric	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG503093	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
L60695-03	WG503198	Calcium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG503355	Chloride	SM4500Cl-E	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG503823	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG503449	Sulfate	D516-02/-07/-11 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L60695-04	WG503198	Calcium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG503355	Chloride	SM4500Cl-E	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG503449	Sulfate	D516-02/-07/-11 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L60695-05	WG503198	Calcium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG503355	Chloride	SM4500Cl-E	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG503449	Sulfate	D516-02/-07/-11 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Rio Algom Mining Company
Project ID: 4508122295
Sample ID: 36-02 TRB
Locator:

ACZ Sample ID: ***L60695-01***
Date Sampled: *08/03/20 11:13*
Date Received: *08/06/20*
Sample Matrix: *Groundwater*

Gross Alpha - Corrected
Calculation
Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha - Corrected	09/02/20 12:47		-27			pCi/L		calc

Gross Alpha, dissolved
M9310
Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/20/20 0:00		-25	14	110	pCi/L	*	fdw

Lead 210, dissolved
EICHROM, OTW01
Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Lead 210, dissolved	08/25/20 14:30		-5	2.5	5.8	pCi/L	*	isn

Polonium 210, dissolved
HASL Po-01-RC
Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Polonium 210, dissolved	08/24/20 8:28		-0.496	2.1	4.4	pCi/L	*	isn

Radium 226, dissolved
M903.1
Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, dissolved	09/01/20 0:10		0.61	0.14	0.08	pCi/L	*	amk

Radium 228, dissolved
M9320
Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, dissolved	08/25/20 12:21		0.89	0.81	2.1	pCi/L	*	isn

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

RadioChemistry Analytical Results

Rio Algom Mining Company
Project ID: 4508122295
Sample ID: 36-02 TRB
Locator:

ACZ Sample ID: ***L60695-01***
Date Sampled: *08/03/20 11:13*
Date Received: *08/06/20*
Sample Matrix: *Groundwater*

Thorium 230, dissolved
ESM 4506

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Thorium 230, dissolved	08/19/20 16:19		0.289	0.28	0.45	pCi/L	*	djc

Rio Algom Mining Company
Project ID: 4508122295
Sample ID: 36-06 KD
Locator:

ACZ Sample ID: ***L60695-02***
Date Sampled: *08/03/20 14:44*
Date Received: *08/06/20*
Sample Matrix: *Groundwater*

Gross Alpha - Corrected
Calculation

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha - Corrected	09/02/20 12:47		500			pCi/L		calc

Gross Alpha, dissolved
M9310

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/20/20 0:00		500	81	130	pCi/L	*	fdw

Lead 210, dissolved
EICHROM, OTW01

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Lead 210, dissolved	08/25/20 14:30		1.7	3.5	7.3	pCi/L	*	isn

Thorium 230, dissolved
ESM 4506

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Thorium 230, dissolved	08/19/20 16:19		16.6	2.6	0.33	pCi/L	*	djc

Rio Algom Mining Company
Project ID: 4508122295
Sample ID: 5-08 ALL-R
Locator:

ACZ Sample ID: ***L60695-03***
Date Sampled: *08/04/20 17:06*
Date Received: *08/06/20*
Sample Matrix: *Groundwater*

Gross Alpha, dissolved — Prep Method:
M9310

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/20/20 0:00		8	12	29	pCi/L		fdw

Lead 210, dissolved — Prep Method:
EICHROM, OTW01

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Lead 210, dissolved	08/25/20 14:30		-4	2.7	6	pCi/L	*	isn

Polonium 210, dissolved — Prep Method:
HASL Po-01-RC

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Polonium 210, dissolved	08/24/20 8:28		-1.12	1.2	3.2	pCi/L	*	isn

Radium 226, dissolved — Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, dissolved	09/01/20 0:11		0.19	0.12	0.13	pCi/L		amk

Radium 228, dissolved — Prep Method:
M9320

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, dissolved	08/25/20 12:21		0.77	0.82	1.9	pCi/L	*	isn

Thorium 230, dissolved — Prep Method:
ESM 4506

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Thorium 230, dissolved	08/19/20 16:19		0.0525	0.21	0.41	pCi/L	*	djc

Rio Algom Mining Company
Project ID: 4508122295
Sample ID: 5-03 ALL-R
Locator:

ACZ Sample ID: ***L60695-04***
Date Sampled: *08/05/20 9:08*
Date Received: *08/06/20*
Sample Matrix: *Groundwater*

Gross Alpha, dissolved — Prep Method:
M9310

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/20/20 0:00		43	21	50	pCi/L		fdw

Lead 210, dissolved — Prep Method:
EICHROM, OTW01

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Lead 210, dissolved	08/25/20 16:17		0.73	2.3	4.8	pCi/L	*	isn

Polonium 210, dissolved — Prep Method:
HASL Po-01-RC

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Polonium 210, dissolved	08/24/20 8:28		4.1	4	6.3	pCi/L	*	isn

Radium 226, dissolved — Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, dissolved	09/01/20 0:12		0.2	0.09	0.1	pCi/L		amk

Radium 228, dissolved — Prep Method:
M9320

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, dissolved	08/25/20 12:21		0.91	0.83	1.9	pCi/L	*	isn

Thorium 230, dissolved — Prep Method:
ESM 4506

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Thorium 230, dissolved	08/19/20 16:19		0.353	0.24	0.28	pCi/L	*	djc

Rio Algom Mining Company
Project ID: 4508122295
Sample ID: 31-61 ALL
Locator:

ACZ Sample ID: ***L60695-05***
Date Sampled: *08/05/20 10:48*
Date Received: *08/06/20*
Sample Matrix: *Groundwater*

Gross Alpha, dissolved
Prep Method:
M9310

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/20/20 0:00		300	96	170	pCi/L		fdw

Lead 210, dissolved
Prep Method:
EICHROM, OTW01

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Lead 210, dissolved	08/25/20 16:17		-0.87	3.1	6.6	pCi/L	*	isn

Polonium 210, dissolved
Prep Method:
HASL Po-01-RC

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Polonium 210, dissolved	08/24/20 8:28		-1.93	2.8	6.2	pCi/L	*	isn

Radium 226, dissolved
Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, dissolved	09/01/20 0:14		0.45	0.13	0.16	pCi/L	*	amk

Radium 228, dissolved
Prep Method:
M9320

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, dissolved	08/25/20 12:21		2.4	0.96	2.1	pCi/L	*	isn

Thorium 230, dissolved
Prep Method:
ESM 4506

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Thorium 230, dissolved	08/19/20 16:19		0.279	0.22	0.28	pCi/L	*	djc

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:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

Rio Algom Mining Company

ACZ Project ID: ***L60695***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Gross Alpha, dissolved M9310 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG503231																
L60595-01DUP	DUP-RPD	08/20/20			35	6.8	7.9	52	8.4	7.3				39	20	RG
L60595-02MSA	MS	08/20/20	PCN60283	100	2.8	2.9	14	77	10	6.8	74	67	144			
L60733-01DUP	DUP-RPD	08/20/20			2.3	4.2	15	2.5	3.9	14				8	20	
WG503231LCSWA	LCSW	08/20/20	PCN60283	100				110	8.9	12	110	67	144			
WG503231PBW	PBW	08/20/20						-1.1	0.52	11			22			
L60595-01DUP	DUP-RER	08/20/20			35	6.8	7.9	52	8.4	7.3				1.57	2	

Lead 210, dissolved EICHROM, OTW01 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG503216																
WG503216PBW	PBW	08/25/20						-.22	1.6	3.4			6.8			
WG503216LCSW	LCSW	08/25/20	PCN59634	96.85				93	3.6	2.7	96	55	121			
L60730-01MS	MS	08/25/20	PCN59634	161.41	4.4	2.4	4.8	140	6.1	5.9	84	55	121			
L60695-03DUP	DUP-RER	08/25/20			-4	2.7	6	.86	2.8	5.8				1.25	2	
L60695-03DUP	DUP-RPD	08/25/20			-4	2.7	6	.86	2.8	5.8				310	20	RG
L60729-01DUP	DUP-RPD	08/25/20			-0.49	2.7	5.9	-1.2	2.8	6				84	20	RG
L60729-01DUP	DUP-RER	08/25/20			-0.49	2.7	5.9	-1.2	2.8	6				0.18	2	

Rio Algom Mining Company

ACZ Project ID: ***L60695***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Polonium 210, dissolved HASL Po-01-RC **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG503776																
L60695-01DUP	DUP-RPD	08/24/20			-0.496	2.1	4.4	-3.01	2.8	6.1				143	20	RG
L60695-01DUP	DUP-RER	08/24/20			-0.496	2.1	4.4	-3.01	2.8	6.1				0.72	2	
WG503776PBW	PBW	08/24/20						.485	2.2	4.1			8.2			
WG503776LCSW	LCSW	08/24/20	PCN59634	500				437	79	4.4	87	51	128			
L60870-05MS	MS	08/24/20	PCN59634	500	-0.621	1.2	2.9	404	68	4.5	81	51	128			
L60870-02DUP	DUP-RPD	08/24/20			-0.186	1.8	3.7	.283	1.5	2.9				967	20	RG
L60870-02DUP	DUP-RER	08/24/20			-0.186	1.8	3.7	.283	1.5	2.9				0.2	2	

Radium 226, dissolved 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
WG503900																
WG503900PBW	PBW	09/01/20						.13	0.12	0.25			0.5			
WG503900LCSW	LCSW	09/01/20	PCN61539	20				19	0.54	0.11	95	43	148			
L60693-01DUP	DUP-RPD	09/01/20			1.8	0.21	0.17	1.8	0.27	0.29				0	20	
L60710-01MS	MS	09/01/20	PCN61539	20	0.69	0.15	0.1	20	0.63	0.11	97	43	148			
L60730-01DUP	DUP-RPD	09/01/20			2.6	0.23	0.13	4.2	0.34	0.15				47	20	RM

Radium 228, dissolved M9320 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG503624																
WG503624PBW	PBW	08/25/20						.24	0.43	0.44			0.88			
WG503624LCSW	LCSW	08/25/20	PCN61541	9.76				10	1.1	0.75	102	47	123			
L60693-01DUP	DUP-RPD	08/25/20			3.2	0.88	1.8	2.7	0.86	1.7				17	20	
L60693-02MS	MS	08/25/20	PCN61541	9.76	0.38	0.79	1.8	11	1.4	2.2	109	47	123			
L60705-01DUP	DUP-RER	08/25/20			0.05	0.92	2.3	.9	1.1	2.5				0.59	2	
L60705-01DUP	DUP-RPD	08/25/20			0.05	0.92	2.3	.9	1.1	2.5				179	20	RG

Rio Algom Mining Company

ACZ Project ID: ***L60695***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Thorium 230, dissolved ESM 4506 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG503732																
WG503732PBW	PBW	08/19/20						.158	0.22	0.38			0.76			
WG503732LCSW	LCSW	08/19/20	PCN58726	200				206	28	0.4	103	91	126			
L60729-01DUP	DUP-RPD	08/19/20			0.0272	0.22	0.43	.224	0.34	0.59				157	20	RG
L60729-01DUP	DUP-RER	08/19/20			0.0272	0.22	0.43	.224	0.34	0.59				0.49	2	
L60730-01DUP	DUP-RPD	08/20/20			0.466	0.41	0.64	.574	0.5	0.73				21	20	RG
L60730-01DUP	DUP-RER	08/20/20			0.466	0.41	0.64	.574	0.5	0.73				0.17	2	
L60729-03MS	MS	08/20/20	PCN58726	200	-0.0581	0.29	0.58	178	24	0.36	89	91	126			M2

Rio Algom Mining Company ACZ Project ID: ***L60695***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L60695-01	WG503231	Gross Alpha, dissolved	M9310	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503216	Lead 210, dissolved	EICHROM, OTW01	D1	Sample required dilution due to matrix.
			EICHROM, OTW01	Q5	Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory.
			EICHROM, OTW01	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503776	Polonium 210, dissolved	HASL Po-01-RC	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503900	Radium 226, dissolved	M903.1	QB	Method-specified preservation criteria cannot be met due to sample matrix.
	WG503624	Radium 228, dissolved	M9320	Q5	Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory.
			M9320	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503732	Thorium 230, dissolved	ESM 4506	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			ESM 4506	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L60695-02	WG503231	Gross Alpha, dissolved	M9310	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503216	Lead 210, dissolved	EICHROM, OTW01	D1	Sample required dilution due to matrix.
			EICHROM, OTW01	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503732	Thorium 230, dissolved	ESM 4506	DJ	Sample dilution required due to insufficient sample.
			ESM 4506	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			ESM 4506	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L60695-03	WG503216	Lead 210, dissolved	EICHROM, OTW01	D1	Sample required dilution due to matrix.
			EICHROM, OTW01	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503776	Polonium 210, dissolved	HASL Po-01-RC	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503624	Radium 228, dissolved	M9320	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503732	Thorium 230, dissolved	ESM 4506	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			ESM 4506	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.

Rio Algom Mining Company ACZ Project ID: ***L60695***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L60695-04	WG503216	Lead 210, dissolved	EICHROM, OTW01	D1	Sample required dilution due to matrix.
			EICHROM, OTW01	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503776	Polonium 210, dissolved	HASL Po-01-RC	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503624	Radium 228, dissolved	M9320	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503732	Thorium 230, dissolved	ESM 4506	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			ESM 4506	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L60695-05	WG503216	Lead 210, dissolved	EICHROM, OTW01	D1	Sample required dilution due to matrix.
			EICHROM, OTW01	Q5	Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory.
			EICHROM, OTW01	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503776	Polonium 210, dissolved	HASL Po-01-RC	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503900	Radium 226, dissolved	M903.1	Q5	Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory.
	WG503624	Radium 228, dissolved	M9320	Q5	Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory.
			M9320	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503732	Thorium 230, dissolved	ESM 4506	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			ESM 4506	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.

Radiochemistry

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

Lead 210, dissolved	EICHROM, OTW01
Polonium 210, dissolved	HASL Po-01-RC
Thorium 230, dissolved	ESM 4506

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

Sample Receipt

Rio Algom Mining Company
4508122295

ACZ Project ID: L60695
Date Received: 08/06/2020 10:45
Received By:
Date Printed: 8/7/2020

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	

L60695-01 Container B2307362 (GREEN RAD): Added 10 mls nitric acid to the sub-sample to adjust the pH to the appropriate range.

L60695-05 Container B2307400 (GREEN CUBE): Added 10 mls nitric acid to the sub-sample. The pH is 2.

L60695-05 Container B2307400 (GREEN CUBE): Added 10 mls nitric acid to the sub-sample to adjust the pH to the appropriate range.

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		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

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

Rio Algom Mining Company
4508122295

ACZ Project ID: L60695
Date Received: 08/06/2020 10:45
Received By:
Date Printed: 8/7/2020

6325	4.6	<=6.0	16	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was 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.

[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. L60695

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Kent Applegate	Address: PO Box 218
Company: Rio Algom Mining LLC	Grants, NM 87020
E-mail: Kent.KC.Applegate@bhpbilliton.com	Telephone: 1-505-287-8851

Copy of Report to:

Name: See Remarks	E-mail: See Remarks
Company: INTERA, INC.	Telephone: 505-246-1600 x1207

Invoice to:

Name: Kent Applegate	Address: PO Box 218
Company: Rio Algom Mining LLC	Grants, NM 87020
E-mail: Kent.KC.Applegate@bhpbilliton.com	Telephone: 1-505-287-8851

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Drew Coleman Sampler's Site Information State NM Zip code 87020 Time Zone MST

*Sampler's Signature: [signature]

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State law.

PROJECT INFORMATION — ANALYSES REQUESTED

Quote #: N/A

PO#: 4502696259

Reporting state for compliance testing: NM

Check box if samples include NRC licensed material? [ ]

SAMPLE IDENTIFICATION	DATE/TIME	Matrix	# of Containers	NRC-TRB	NRC-KD	NRC-ALL					
36-02 TRB	8/3/20 1113	GW	7	X							
36-06 KD	8/3/20 1444	GW	6*		X						
T-08 ALL-R	8/4/20 1706	GW	6			X					
T-07 ALL-R	8/5/20 0908	GW	6			X					
31-61 ALL	8/5/20 1046	GW	6			X					

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

RAML COC#: 20-37. Note different COC's may have different PO's. Shipment of 4 Coolers.

Please CC report to: cshort@intera.com, apersico@intera.com, Michaella.Gorospe@bhpbilliton.com, jcarroll@intera.com

* 36-06 KD was shipped w/o nitric 4L cube to avoid exceeding hold times. The 4L nitric cube will present when site conditions allow for further collection

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
[signature]	8/5/20 1900	[signature]	8/6/20 1046

FRMAD050.06.14.14 White - Return with sample. Yellow - Retain for your records.

L60695 Chain of Custody