

August 19, 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, Michaela Gorospe

Project ID: 4508122295
ACZ Project ID: L60459

Kent Applegate:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 27, 2020. This project has been assigned to ACZ's project number, L60459. 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 L60459. 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 September 18, 2020. 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.



Scott Habermehl has reviewed
and approved this report.



Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 31-01 TRA-R

ACZ Sample ID: **L60459-01**

Date Sampled: 07/23/20 09:34

Date Received: 07/27/20

Sample Matrix: Groundwater

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	1	195			mg/L	0.1	0.5	08/03/20 12:16	jlw
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.06	0.2	08/03/20 12:16	jlw
Magnesium, dissolved	M200.7 ICP	1	82.2			mg/L	0.2	1	08/03/20 12:16	jlw
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0055			mg/L	0.0002	0.0005	08/06/20 16:33	mfm
Nickel, dissolved	M200.8 ICP-MS	1	0.0049			mg/L	0.0004	0.001	08/06/20 16:33	mfm
Potassium, dissolved	M200.7 ICP	1	6.3			mg/L	0.2	1	08/03/20 12:16	jlw
Selenium, dissolved	SM 3114 B, AA-Hydride	1		U		mg/L	0.002	0.005	08/05/20 13:36	slm
Sodium, dissolved	M200.7 ICP	1	142			mg/L	0.2	1	08/03/20 12:16	jlw
Uranium, dissolved	M200.8 ICP-MS	1	0.0004	B		mg/L	0.0001	0.0005	08/10/20 13:03	mfm

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	145		*	mg/L	2	20	07/30/20 0:00	eep
Carbonate as CaCO3		1		U	*	mg/L	2	20	07/30/20 0:00	eep
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/30/20 0:00	eep
Total Alkalinity		1	145		*	mg/L	2	20	07/30/20 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-2.1			%			08/19/20 0:00	calc
Sum of Anions			24			meq/L			08/19/20 0:00	calc
Sum of Cations			23			meq/L			08/19/20 0:00	calc
Chloride	SM4500Cl-E	1	16.2		*	mg/L	0.5	2	08/11/20 8:58	wtc
Conductivity @25C	SM2510B	1	1930		*	umhos/cm	1	10	07/30/20 5:53	eep
Cyanide, Total	D7511-09	1		U	*	mg/L	0.003	0.01	08/04/20 13:42	rbt
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.02	B	*	mg/L	0.02	0.1	08/11/20 23:47	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	1670		*	mg/L	20	40	07/28/20 14:47	jck
Sulfate	D516-02/-07/-11 - Turbidimetric	25	963		*	mg/L	25	125	08/12/20 10:15	rbt
TDS (calculated)	Calculation		1490			mg/L			08/19/20 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.12						08/19/20 0:00	calc

Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 31-02 TRB-R

ACZ Sample ID: **L60459-02**

Date Sampled: 07/23/20 10:39

Date Received: 07/27/20

Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Uranium, dissolved	M200.8 ICP-MS	5	0.0039			mg/L	0.0005	0.003	08/10/20 17:31	bsu

Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 36-06 KD

ACZ Sample ID: **L60459-03**

Date Sampled: 07/23/20 11:36

Date Received: 07/27/20

Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Uranium, dissolved	M200.8 ICP-MS	5	0.490			mg/L	0.0005	0.003	08/10/20 17:33	bsu

Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 32-45 KD-R

ACZ Sample ID: **L60459-04**

Date Sampled: 07/23/20 12:53

Date Received: 07/27/20

Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Molybdenum, dissolved	M200.8 ICP-MS	1	0.191			mg/L	0.0002	0.0005	08/06/20 16:38	mfm
Uranium, dissolved	M200.8 ICP-MS	1	0.0497			mg/L	0.0001	0.0005	08/10/20 13:08	mfm

Report Header Explanations

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

QC Sample Types

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

Rio Algom Mining Company

ACZ Project ID: **L60459**

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
WG502463													
WG502463PBW1	PBW	07/29/20 16:40				3.8	mg/L		-20	20			
WG502463LCSW3	LCSW	07/29/20 17:00	WC200723-2	820.0001		848	mg/L	103	90	110			
WG502463LCSW6	LCSW	07/29/20 20:27	WC200723-2	820.0001		851	mg/L	104	90	110			
WG502463PBW2	PBW	07/29/20 20:36				2	mg/L		-20	20			
WG502463LCSW9	LCSW	07/29/20 23:45	WC200723-2	820.0001		850	mg/L	104	90	110			
WG502463PBW3	PBW	07/29/20 23:55				2.3	mg/L		-20	20			
WG502463LCSW12	LCSW	07/30/20 3:49	WC200723-2	820.0001		853	mg/L	104	90	110			
WG502463PBW4	PBW	07/30/20 3:59				2.1	mg/L		-20	20			
L60492-01DUP	DUP	07/30/20 7:37			29.3	28.8	mg/L				2	20	
WG502463LCSW15	LCSW	07/30/20 7:57	WC200723-2	820.0001		859	mg/L	105	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG502638													
WG502638ICV	ICV	08/03/20 11:38	II200723-1	100		98.64	mg/L	99	95	105			
WG502638ICB	ICB	08/03/20 11:44				U	mg/L		-0.3	0.3			
WG502638LFB	LFB	08/03/20 11:57	II200715-2	67.9908		67.91	mg/L	100	85	115			
L60491-01AS	AS	08/03/20 12:38	II200715-2	67.9908	42.9	108.5	mg/L	96	85	115			
L60491-01ASD	ASD	08/03/20 12:42	II200715-2	67.9908	42.9	110.2	mg/L	99	85	115	2	20	

Chloride SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503115													
WG503115ICB	ICB	08/11/20 7:55				U	mg/L		-1.5	1.5			
WG503115ICV	ICV	08/11/20 7:55	WI200506-2	55.055		57.49	mg/L	104	90	110			
WG503115LFB1	LFB	08/11/20 8:58	WI200327-3	30.03		32.03	mg/L	107	90	110			
L60459-01DUP	DUP	08/11/20 8:58			16.2	16.25	mg/L				0	20	
L60468-01AS	AS	08/11/20 8:58	WI200327-3	30.03	50.3	75.43	mg/L	84	90	110			M2
WG503115LFB2	LFB	08/11/20 9:02	WI200327-3	30.03		32.3	mg/L	108	90	110			

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG502463													
WG502463LCSW2	LCSW	07/29/20 16:46	PCN61372	1410		1440	umhos/cm	102	90	110			
WG502463LCSW5	LCSW	07/29/20 20:14	PCN61372	1410		1430	umhos/cm	101	90	110			
WG502463LCSW8	LCSW	07/29/20 23:32	PCN61372	1410		1430	umhos/cm	101	90	110			
WG502463LCSW11	LCSW	07/30/20 3:36	PCN61372	1410		1420	umhos/cm	101	90	110			
L60492-01DUP	DUP	07/30/20 7:37			173	169	umhos/cm				2	20	
WG502463LCSW14	LCSW	07/30/20 7:43	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
WG502693													
WG502693ICV	ICV	08/04/20 13:32	WI200721-7	.3003		.2751	mg/L	92	90	110			
WG502693ICB	ICB	08/04/20 13:34				U	mg/L		-0.003	0.003			
WG502693LFB	LFB	08/04/20 13:40	WI200721-8	.1		.1029	mg/L	103	84	116			
L60459-01AS	AS	08/04/20 13:44	WI200721-8	.1	U	.1051	mg/L	105	84	116			
L60459-01ASD	ASD	08/04/20 13:46	WI200721-8	.1	U	.1055	mg/L	106	84	116	0	20	

Rio Algom Mining Company

ACZ Project ID: **L60459**

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
WG502638													
WG502638ICV	ICV	08/03/20 11:38	II200723-1	2		1.957	mg/L	98	95	105			
WG502638ICB	ICB	08/03/20 11:44				U	mg/L		-0.18	0.18			
WG502638LFB	LFB	08/03/20 11:57	II200715-2	1.0018		1.025	mg/L	102	85	115			
L60491-01AS	AS	08/03/20 12:38	II200715-2	1.0018	U	.994	mg/L	99	85	115			
L60491-01ASD	ASD	08/03/20 12:42	II200715-2	1.0018	U	1.025	mg/L	102	85	115	3	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG502638													
WG502638ICV	ICV	08/03/20 11:38	II200723-1	100		97.51	mg/L	98	95	105			
WG502638ICB	ICB	08/03/20 11:44				U	mg/L		-0.6	0.6			
WG502638LFB	LFB	08/03/20 11:57	II200715-2	49.9996		48.36	mg/L	97	85	115			
L60491-01AS	AS	08/03/20 12:38	II200715-2	49.9996	11.9	59.92	mg/L	96	85	115			
L60491-01ASD	ASD	08/03/20 12:42	II200715-2	49.9996	11.9	60.66	mg/L	98	85	115	1	20	

Molybdenum, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG502924													
WG502924ICV	ICV	08/06/20 16:08	MS200701-2	.0199		.0214	mg/L	108	90	110			
WG502924ICB	ICB	08/06/20 16:10				U	mg/L		-0.00044	0.00044			
WG502924LFB	LFB	08/06/20 16:12	MS200803-2	.0501		.04467	mg/L	89	85	115			
L60448-01AS	AS	08/06/20 16:26	MS200803-2	.0501	.0038	.05301	mg/L	98	70	130			
L60448-01ASD	ASD	08/06/20 16:28	MS200803-2	.0501	.0038	.05255	mg/L	97	70	130	1	20	
L60568-02AS	AS	08/06/20 16:58	MS200803-2	.2505	U	.2467	mg/L	98	70	130			
L60568-02ASD	ASD	08/06/20 17:00	MS200803-2	.2505	U	.2249	mg/L	90	70	130	9	20	

Nickel, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG502924													
WG502924ICV	ICV	08/06/20 16:08	MS200701-2	.05		.05461	mg/L	109	90	110			
WG502924ICB	ICB	08/06/20 16:10				U	mg/L		-0.00088	0.00088			
WG502924LFB	LFB	08/06/20 16:12	MS200803-2	.05		.04564	mg/L	91	85	115			
L60448-01AS	AS	08/06/20 16:26	MS200803-2	.05	.0021	.04547	mg/L	87	70	130			
L60448-01ASD	ASD	08/06/20 16:28	MS200803-2	.05	.0021	.04457	mg/L	85	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
WG503170													
WG503170ICV	ICV	08/11/20 21:47	WI200514-1	2.416		2.448	mg/L	101	90	110			
WG503170ICB	ICB	08/11/20 21:49				U	mg/L		-0.02	0.02			
WG503173													
WG503173LFB	LFB	08/11/20 23:29	WI200331-15	2		2.017	mg/L	101	90	110			
L41360-142AS	AS	08/11/20 23:31	WI200331-15	2	U	2.147	mg/L	107	90	110			
L52842-58DUP	DUP	08/11/20 23:34			U	U	mg/L				0	20	RA

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Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG502638													
WG502638ICV	ICV	08/03/20 11:38	II200723-1	20		19.84	mg/L	99	95	105			
WG502638ICB	ICB	08/03/20 11:44				U	mg/L		-0.6	0.6			
WG502638LFB	LFB	08/03/20 11:57	II200715-2	99.96847		99.39	mg/L	99	85	115			
L60491-01AS	AS	08/03/20 12:38	II200715-2	99.96847	2.2	103.8	mg/L	102	85	115			
L60491-01ASD	ASD	08/03/20 12:42	II200715-2	99.96847	2.2	104.5	mg/L	102	85	115	1	20	

Residue, Filterable (TDS) @180C

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG502350													
WG502350PBW	PBW	07/28/20 13:50				U	mg/L		-20	20			
WG502350LCSW	LCSW	07/28/20 13:52	PCN61600	1000		1010	mg/L	101	80	120			
L60459-01DUP	DUP	07/28/20 14:50			1670	1670	mg/L				0	10	

Selenium, dissolved

SM 3114 B, AA-Hydride

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG502743													
WG502743ICV	ICV	08/05/20 13:28	SE200702-2	.025		.0252	mg/L	101	90	110			
WG502743ICB	ICB	08/05/20 13:30				U	mg/L		-0.006	0.006			
WG502743LRB	LRB	08/05/20 13:32				U	mg/L		-0.006	0.006			
WG502743LFB	LFB	08/05/20 13:34	SE200529-14	.0225		.023	mg/L	102	85	115			
L60459-01LFM	LFM	08/05/20 13:39	SE200529-14	.0225	U	.0192	mg/L	85	85	115			
L60459-01LFMD	LFMD	08/05/20 13:41	SE200529-14	.0225	U	.0203	mg/L	90	85	115	6	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG502638													
WG502638ICV	ICV	08/03/20 11:38	II200723-1	100		99.53	mg/L	100	95	105			
WG502638ICB	ICB	08/03/20 11:44				U	mg/L		-0.6	0.6			
WG502638LFB	LFB	08/03/20 11:57	II200715-2	100.0157		98.65	mg/L	99	85	115			
L60491-01AS	AS	08/03/20 12:38	II200715-2	100.0157	19.1	119.3	mg/L	100	85	115			
L60491-01ASD	ASD	08/03/20 12:42	II200715-2	100.0157	19.1	120.7	mg/L	102	85	115	1	20	

Sulfate

D516-02/-07/-11 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503199													
WG503199ICB	ICB	08/12/20 9:37				U	mg/L		-3	3			
WG503199ICV	ICV	08/12/20 9:37	WI200812-2	20		20	mg/L	100	90	110			
WG503199LFB	LFB	08/12/20 10:04	WI200803-1	10.01		9.6	mg/L	96	90	110			
L60459-01AS	AS	08/12/20 10:15	SO4TURB25X	10	963	974	mg/L	110	90	110			
L60468-01DUP	DUP	08/12/20 10:24			1420	1430	mg/L				1	20	

Rio Algom Mining Company

ACZ Project ID: **L60459**

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.

Uranium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503064													
WG503064ICV	ICV	08/10/20 12:32	MS200701-2	.05		.04943	mg/L	99	90	110			
WG503064ICB	ICB	08/10/20 12:34				U	mg/L		-0.00022	0.00022			
WG503064LFB	LFB	08/10/20 12:36	MS200803-2	.05		.04803	mg/L	96	85	115			
L60448-01AS	AS	08/10/20 12:56	MS200803-2	.05	.0027	.05302	mg/L	101	70	130			
L60448-01ASD	ASD	08/10/20 12:57	MS200803-2	.05	.0027	.05545	mg/L	106	70	130	4	20	
L60546-02AS	AS	08/10/20 13:15	MS200803-2	.05	.0002	.0523	mg/L	104	70	130			
L60546-02ASD	ASD	08/10/20 13:17	MS200803-2	.05	.0002	.05373	mg/L	107	70	130	3	20	
WG503089													
WG503089ICV	ICV	08/10/20 17:10	MS200701-2	.05		.05052	mg/L	101	90	110			
WG503089ICB	ICB	08/10/20 17:11				U	mg/L		-0.00022	0.00022			
WG503089LFB	LFB	08/10/20 17:13	MS200803-2	.05		.04808	mg/L	96	85	115			
L55951-38AS	AS	08/10/20 17:19	MS200803-2	.05	.0002	.04938	mg/L	98	70	130			
L55951-38ASD	ASD	08/10/20 17:20	MS200803-2	.05	.0002	.05368	mg/L	107	70	130	8	20	

Rio Algom Mining Company

ACZ Project ID: **L60459**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L60459-01	WG502463	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG503115	Chloride	SM4500CI-E	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500CI-E	Q6	Sample was received above recommended temperature.
	WG502463	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG502693	Cyanide, Total	D7511-09	Q6	Sample was received above recommended temperature.
	WG502463	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG503173	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			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).
	WG502350	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG503199	Sulfate	D516-02/-07/-11 - Turbidimetric	Q6	Sample was received above recommended temperature.
	WG502463	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 31-01 TRA-R

Locator:

ACZ Sample ID: **L60459-01**

Date Sampled: 07/23/20 9:34

Date Received: 07/27/20

Sample Matrix: Groundwater

Gross Alpha - Corrected

Prep Method:

Calculation

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha - Corrected	08/19/20 13:14		0.13			pCi/L		calc

Gross Alpha, dissolved

Prep Method:

M9310

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/11/20 0:07		0.4	3.6	52	pCi/L		fdw

Lead 210, dissolved

Prep Method:

EICHROM, OTW01

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Lead 210, dissolved	08/18/20 14:26		-3.1	3.5	7.5	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	08/14/20 7:27		-2.12	2.7	5.6	pCi/L	*	isn

Radium 226, dissolved

Prep Method:

M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, dissolved	08/18/20 0:11		0.34	0.13	0.12	pCi/L	*	amk

Radium 228, dissolved

Prep Method:

M9320

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, dissolved	08/14/20 14:23		0.91	0.78	1.8	pCi/L	*	amk

Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 31-01 TRA-R

Locator:

ACZ Sample ID: **L60459-01**

Date Sampled: 07/23/20 9:34

Date Received: 07/27/20

Sample Matrix: *Groundwater*

Thorium 230, dissolved

Prep Method:

ESM 4506

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Thorium 230, dissolved	08/18/20 9:29		0.158	0.15	0.24	pCi/L	*	djc

Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 31-02 TRB-R

Locator:

ACZ Sample ID: **L60459-02**

Date Sampled: 07/23/20 10:39

Date Received: 07/27/20

Sample Matrix: *Groundwater*

Gross Alpha - Corrected

Prep Method:

Calculation

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha - Corrected	08/19/20 13:14		-3.3			pCi/L		calc

Gross Alpha, dissolved

Prep Method:

M900.0

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/11/20 0:08		-0.67	18	66	pCi/L		fdw

Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 36-06 KD

Locator:

ACZ Sample ID: **L60459-03**

Date Sampled: 07/23/20 11:36

Date Received: 07/27/20

Sample Matrix: *Groundwater*

Gross Alpha - Corrected

Prep Method:

Calculation

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha - Corrected	08/19/20 13:14		-8.2			pCi/L		calc

Gross Alpha, dissolved

Prep Method:

M900.0

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/11/20 0:10		320	57	64	pCi/L		fdw

Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 32-45 KD-R

Locator:

ACZ Sample ID: **L60459-04**

Date Sampled: 07/23/20 12:53

Date Received: 07/27/20

Sample Matrix: *Groundwater*

Gross Alpha - Corrected

Prep Method:

Calculation

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha - Corrected	08/19/20 13:14		77			pCi/L		calc

Gross Alpha, dissolved

Prep Method:

M900.0

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/11/20 0:11		110	20	54	pCi/L		fdw

Report Header Explanations

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

QC Sample Types

<i>DUP</i>	Sample Duplicate	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBS</i>	Prep Blank - Soil
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBW</i>	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.
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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: **L60459**

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

M900.0

Units: pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG502626																
WG502626PBW	PBW	08/11/20						-5	0.48	0.95			1.9			
WG502626LCSWA	LCSW	08/11/20	PCN60283	100				120	9.5	1.3	120	67	144			
L60383-04DUP	DUP-RPD	08/11/20			19	5	7.6	18	4.7	6.5				5	20	
L60491-01MSA	MS	08/11/20	PCN60283	100	1.8	2	16	120	11	18	118	67	144			
L60505-01DUP	DUP-RPD	08/11/20			-0.24	0.54	0.97	-21	0.54	0.97				13	20	

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
WG502828																
WG502828LCSW	LCSW	08/18/20	PCN59634	96.91				95	4.2	4.1	98	55	121			
WG502828PBW	PBW	08/18/20						-3.7	1.9	4.2			8.4			
L60426-10DUP	DUP-RPD	08/18/20			-3.1	1.5	3.3	-2.8	1.8	3.9				10	20	
L60426-11DUP	DUP-RER	08/18/20			-0.22	1.8	3.8	-4.5	1.9	4.3				1.64	2	
L60426-11DUP	DUP-RPD	08/18/20			-0.22	1.8	3.8	-4.5	1.9	4.3				181	20	RG
L60426-17MS	MS	08/18/20	PCN59634	96.9	-0.83	1.5	3.2	84	3.9	4.1	88	55	121			

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
WG503010																
L60458-03DUP	DUP-RER	08/14/20			-0.867	1.9	4.1	-214	2	4.2				0.24	2	
L60458-03DUP	DUP-RPD	08/14/20			-0.867	1.9	4.1	-214	2	4.2				121	20	RG
WG503010PBW	PBW	08/14/20						-415	2.3	4.7			9.4			
WG503010LCSW	LCSW	08/14/20	PCN59634	500				507	88	3.6	101	51	128			
L60575-01MS	MS	08/14/20	PCN59634	500	-0.278	1.9	3.8	508	84	2.7	102	51	128			

Rio Algom Mining Company

ACZ Project ID: **L60459**

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.

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
WG503166																
WG503166PBW	PBW	08/18/20						.06	0.07	0.11			0.22			
WG503166LCSW	LCSW	08/18/20	PCN61539	20				18	0.57	0.12	90	43	148			
L60419-02DUP	DUP-RER	08/18/20			0.27	0.13	0.12	.49	0.2	0.2				0.92	2	
L60419-02DUP	DUP-RPD	08/18/20			0.27	0.13	0.12	.49	0.2	0.2				58	20	RG
L60491-04MS	MS	08/18/20	PCN61539	20	1.2	0.17	0.11	23	0.69	0.13	109	43	148			
L60491-06DUP	DUP-RPD	08/18/20			5.7	0.31	0.2	5.5	0.31	0.23				4	20	

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
WG502914																
L60379-01DUP	DUP-RER	08/14/20			0.72	0.77	1.9	-.26	1.1	2.5				0.73	2	
L60379-02MS	MS	08/14/20	PCN61541	9.79	0.47	0.86	2.1	10	1.1	1.8	97	47	123			
WG502914LCSW	LCSW	08/14/20	PCN61541	9.79				11	1.1	1.8	112	47	123			
WG502914PBW	PBW	08/14/20						.48	0.53	1.4			2.8			
L60379-01DUP	DUP-RPD	08/14/20			0.72	0.77	1.9	-.26	1.1	2.5				426	20	RG
L60459-01DUP	DUP-RER	08/14/20			0.91	0.78	1.8	3.1	1.6	3.8				1.23	2	
L60459-01DUP	DUP-RPD	08/14/20			0.91	0.78	1.8	3.1	1.6	3.8				109	20	RG

Rio Algom Mining Company

ACZ Project ID: **L60459**

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
WG503036																
WG503036PBW	PBW	08/17/20						.105	0.18	0.31			0.62			
WG503036LCSW	LCSW	08/17/20	PCN58726	200				197	24	0.32	99	91	126			
L60426-14DUP	DUP-RER	08/18/20			0.155	0.17	0.28	.233	0.15	0.19				0.34	2	
L60426-14DUP	DUP-RPD	08/18/20			0.155	0.17	0.28	.233	0.15	0.19				40	20	RG
L60426-16DUP	DUP-RER	08/18/20			-0.0806	0.16	0.33	.214	0.25	0.41				0.99	2	
L60426-16DUP	DUP-RPD	08/18/20			-0.0806	0.16	0.33	.214	0.25	0.41				442	20	RG
L60426-15MS	MS	08/18/20	PCN58726	200	0.0448	0.21	0.38	193	24	0.21	96	91	126			

Rio Algom Mining Company

ACZ Project ID: **L60459**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L60459-01	WG502828	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.
	WG503010	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.
	WG503166	Radium 226, dissolved	M903.1	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.
	WG502914	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.
	WG503036	Thorium 230, dissolved	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: **L60459**

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

Rio Algom Mining Company
 4508122295

ACZ Project ID: L60459
 Date Received: 07/27/2020 11:14
 Received By:
 Date Printed: 7/28/2020

Receipt Verification

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

Samples/Containers

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

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?
3526	22.4	NA	15	Yes
5190	20.2	<=6.0	15	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

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

Rio Algom Mining Company
4508122295

ACZ Project ID: L60459
Date Received: 07/27/2020 11:14
Received By:
Date Printed: 7/28/2020

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).



Laboratories, Inc. L 60459

CHAIN of CUSTODY

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

Report to:

Name: Kent Applegate
Company: Rio Algom Mining LLC
E-mail: Kent.KC.Applegate@bhpbilliton.com

Address: PO Box 218
Grants, NM 87020
Telephone: 1-505-287-8851

Copy of Report to:

Name: See Remarks
Company: INTERA, INC.

E-mail: See Remarks
Telephone: 505-246-1600 x1207

Invoice to:

Name: Kent Applegate
Company: Rio Algom Mining LLC
E-mail: Kent.KC.Applegate@bhpbilliton.com

Address: PO Box 218
Grants, NM 87020
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 []

*"NO" means 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 date will be qualified.

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

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

Sampler's Name: B. Williams Sampler's Site Information State NM Zip code 87020 Time Zone MST

*Sampler's Signature: [Signature] *In attest to the authenticity and validity of this sample, I understand that intentionally mislabeling the time/date/location or tampering with the sample in any way, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Table with columns: Quote #, PO#, Reporting state, Check box for NRC licensed material, SAMPLE IDENTIFICATION, DATE/TIME, Matrix, # of Containers, and analysis results for various containers (NRL TRA, 71-02 TRB-R, 36-06 KD, 32-45 KD-R).

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

REMARKS

RAML COC#: 20-24. Note different COC's may have different PO's. Shipment of Coolers.

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

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

Table with columns: RELINQUISHED BY, DATE/TIME, RECEIVED BY, DATE/TIME. Includes signatures and dates.

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

60459 Chain of Custody