

Rio Algom Mining LLC

January 26, 2012

Certified Mail (7010 1870 0000 3702 9399)

Mr. Jerry Schoeppner
Groundwater Quality Section
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

Re: **Discharge Plan - 71**
Analytical Results – 4th Quarter 2011

Dear Mr. Schoeppner,

Please find attached the 4th quarter groundwater monitoring report for the Section 4 lined evaporation ponds at the Ambrosia Lake mill facility. This report includes the quarterly reporting required for discharge permit DP-71.

Also enclosed (NMED copy only) is a CD Copy of the Excel Summary Spreadsheet for the 4th quarter groundwater monitoring report, Section 4 lined evaporation ponds. This CD Copy meets the requirements of Condition 15B of Discharge Plan DP-71.

If you have any questions or need additional information, please call me at 505-287-8851, ext 15.; or email me at chuck.wentz@bhpbilliton.com.

Sincerely,


Chuck Wentz
Environmental Department Supervisor
Radiation Safety Officer

Attachments: As stated

cc: NRC (Mr. Tom McLaughlin)
NRC (document control)
Doug Murray

FSME20

**RIO ALGOM MINING LLC
AMBROSIA LAKE
FACILITY**

**Discharge Permit
DP-71**

4th Quarter 2011

January 26, 2012

Discharge Permit DP-71

Summary of Activities

This report presents the results of the monitoring and sampling requirements associated with discharge permit DP-71 for the period encompassing the 4th quarter of 2011. DP-71 permit renewal was approved on December 1, 2003 and monitoring requirements were expanded from previous monitoring commitments listed in the permit. This has resulted in acquiring data that was not obtained in past monitoring programs.

There were no surface sediment or soil removal activities associated with the Section 4 lined evaporation pond area during the reporting period.

All wells associated with the permit were dry or contained insufficient water for sample collection except for one well. This well was MW-32. Water levels were indicated for Monitor Wells MW-22 and MW-23, but samples were un-attainable. A table summarizing the data is attached along with a copy of the laboratory report.

Hydrographs and time versus concentration plots are attached for MW-22, MW-26, and MW-32.

Due to the lack of any water in the alluvium in the Section 4 Pond area, development of a potentiometric map for the alluvium was not undertaken.

Laboratory Reports

DP-71

Analytical Data

DP-71

RIO ALGOM MINING LLC DISCHARGE PERMIT - DP-71 MONITORING RESULTS - FOURTH QUARTER 2011

Date	Location	Depth to Water (ft)	Total Depth (ft)	WELL STATUS	pH (s.u.)	Temp. (C)	Spec. Cond. (uS)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Arsenic (mg/L)	Selenium (mg/L)	Uranium (mg/L)
10/31/11	MW-12		12.92	NS										
10/31/11	MW-13		29.27	NS										
10/31/11	MW-22	36.37	36.98	NS										
10/31/11	MW-23	41.71	41.79	NS										
10/31/11	MW-24		50.14	NS										
10/31/11	MW-25		29.61	NS										
10/31/11	MW-26		35.23	NS										
10/31/11	MW-27		27.90	NS										
10/31/11	MW-28		32.50	NS										
10/31/11	MW-29		29.31	NS										
10/31/11	MW-30		41.03	NS										
10/31/11	MW-31		50.52	NS										
10/31/11	MW-32	68.31	71.61		7.06	13.5	4590	130	2900	4610	56	<0.003	0.3562	0.0627
10/31/11	MW-33		59.31	NS										

Notes

- 1 - Well status listed as "NS" indicates the well was either dry or contained insufficient water for sample collection.
- 2 - NA = No Analysis Performed

Analytical Data (Continued)

RIO ALGOM MINING LLC DISCHARGE PERMIT - DP-71 MONITORING RESULTS - 4TH QUARTER 2011 - SEMI-ANNUAL REPORT

Date	Location	WELL STATUS	HCO ₃ (mg/L)	CO ₃ (mg/L)	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	F (mg/L)	Al (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)
10/31/2011	MW-12	NS											
10/31/2011	MW-13	NS											
10/31/2011	MW-22	NS											
10/31/2011	MW-23	NS											
10/31/2011	MW-24	NS											
10/31/2011	MW-25	NS											
10/31/2011	MW-26	NS											
10/31/2011	MW-27	NS											
10/31/2011	MW-28	NS											
10/31/2011	MW-29	NS											
10/31/2011	MW-30	NS											
10/31/2011	MW-31	NS											
10/31/2011	MW-32		271	<2	558	403	445	6	1.0	<0.2	<0.005	<0.01	<0.01
10/31/2011	MW-33	NS											

MONITORING RESULTS - 4TH QUARTER 2011 - SEMI-ANNUAL REPORT (Continued)

Date	Location	Cu (mg/L)	Fe (mg/L)	Pb (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	TKN (mg/L)	Ag (mg/L)	Zn (mg/L)	Ra-226 (pCi/L)	Ra-228 (pCi/L)
10/31/2011	MW-12											
10/31/2011	MW-13											
10/31/2011	MW-22											
10/31/2011	MW-23											
10/31/2011	MW-24											
10/31/2011	MW-25											
10/31/2011	MW-26											
10/31/2011	MW-27											
10/31/2011	MW-28											
10/31/2011	MW-29											
10/31/2011	MW-30											
10/31/2011	MW-31											
10/31/2011	MW-32	<0.02	<0.02	0.0006	0.047	<0.01	<0.05	0.1	<0.01	<0.01	4.2	<0.15
10/31/2011	MW-33											

Notes

- 1 - Well status listed as "NS" indicates the well was either dry or contained insufficient water for sample collection.
- 2 - NA = No Analysis Performed

Rio Algom Mining LLC DP-71 Section 4 Evaporation Ponds
MW-22 Analytical Data

Monitor Well	Date	Well Status	Depth to Water (ft)	Total Depth (ft)	Water In Well (ft)	Specific Cond.	Temp (C)	pH	Ca (mg/L)	Cl (mg/L)	F (mg/L)	NO3(N) (mg/L)	SO4 (mg/L)	TDS (mg/L)	HCO3 (mg/L)	CO3 (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)
MW-22	18-Nov-06		34	38.99	2.99	6110	11.5	7.73	480	130	0.4	108	2890	5200	208	< 2	257	656	8
MW-22	07-Mar-08		33.94	37	3.06	5650	13.1	7.13		148		23.5	2700	7090					
MW-22	06-Jun-08		34.22	36.76	2.53	5910	18.9	7.01	558	161		1.2	2730	8140	847	<2	274	673	9
MW-22	29-Aug-08		34.50	38.80	2.3	5640	14.7	6.53		124		18	2760	5240					
MW-22	27-Nov-08		34.81	36.75	2.14	5650	10.6	6.32	439	110	0.5	0.49	2590	9780	718	<2	218	558	8
MW-22	28-Jan-07		34.71	38.79	2.08	5600	10.9	6.53	540	108	0.5	26.4	2860	4740	485		284	680	9.1
MW-22	01-May-07		34.79	36.76	1.97	5750	15.5	6.98	553	110	0.8	6.8	2880	5300	671	< 2	275	670	8
MW-22	10-Sep-07		35.10	38.80	1.7	5480	14.1	7.42		95		0.09	2800	5070					
MW-22	26-Nov-07		34.46	38.83	2.37	5480	10.1	7.9	488	99		0.78	2810	5080	581	< 2	258	655	7
MW-22	16-Feb-08		34.19	36.78	2.59	5960	11.1	7.36	475	109	0.6	27.5	2800	8090	370	23	268	670	6.1
MW-22	17-Jun-08		34.3	36.8	2.5	5620	15.2	7.36	468	110	0.8	87	2800	4490	242	< 2	249	705	10
MW-22	18-Aug-08		34.88	36.78	2.13	5870	15.2	7.14	531	110	0.8	52.2	2800	4570	248	< 2	294	681	8
MW-22	10-Nov-08		34.86	36.72	2.08	5530	12.7	7.2	484	110	0.8	34.5	2600	4230	236	< 2	255	655	8
MW-22	09-Feb-09		34.74	36.80	2.06	5400	12.7	7.16		120		50.7	2800	4490					
MW-22	18-May-09		35.04	36.8	1.76	5110	17.2	7.35	485	120	0.6	45.5	2800	4490	230	8	259	677	5
MW-22	06-Aug-09		35.35	36.82	1.47	5720	14.9	7.35		130		31.8	2700	5310					
MW-22	16-Nov-09		35.40	36.84	1.44	5250	11.5	7.16	554	130	0.8	17.1	2800	4500	281		381	475	7
MW-22	12-Jan-10		35.39	36.85	1.46	5130	12.4	7.23		140		14.4	2700	5120					
MW-22	12-Apr-10		35.42	36.87	1.45	5190	15.5	7.27	473	140	0.7	19	2700	4380	231	<2	257	667	5
MW-22	06-Jul-10		35.59	36.89	1.21	5550	14.4	7.55		130		21.9	2900	5390					
MW-22	26-Oct-10	NS		36.85	36.89	1.04													
MW-22	08-Feb-11	NS		36.96	36.89	0.91													
MW-22	02-May-11	NS		36.95	36.98	0.93													
MW-22	09-Aug-11	NS		36.21	36.98	0.77													
MW-22	31-Oct-11	NS		36.37	36.98	0.61													

MW-22 Analytical Data Continued

Monitor Well	Date	Al (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)	Cu (mg/L)	As (mg/L)	Se (mg/L)	U (mg/L)	Fe (mg/L)	Pb (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	TKN (mg/L)	Ag (mg/L)	Zn (mg/L)	Ra-226 (pCi/L)	Ra-228 (pCi/L)
MW-22	18-Nov-06	0.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.003	0.483	0.0392	< 0.1	< 0.003	0.04	< 0.05	< 0.05	< 0.2	< 0.05	< 0.05	1.32	
MW-22	07-Mar-08						<0.0011	0.718	0.0211										
MW-22	06-Jun-08	2.4	<0.03	<0.05	0.06	<0.05	0.003	0.133	0.0617	24	<0.0002	138	<0.05	<0.05	7.4	<0.05	0.08	13.5	
MW-22	29-Aug-08						0.011	0.135	0.0276										
MW-22	27-Nov-08	<0.2	<0.03	<0.05	0.06	<0.05	0.0091	0.0055	0.0141	17.5	0.0003	31.4	<0.05	<0.05	4.5	<0.05	<0.05	9.9	
MW-22	29-Jan-07	<0.03	<0.008	<0.01	0.02	<0.01	0.0075	0.104	0.0302	3.85	<0.0001	17.1	<0.01	<0.01	9.4	<0.01	<0.01		
MW-22	01-May-07	<0.3	<0.03	<0.05	<0.05	<0.05	0.01	0.0304	0.0327	5.6	<0.0005	17.3	<0.05	<0.05	5.5	<0.05	<0.05	1.7	3.5
MW-22	10-Sep-07						0.0206	0.0247	0.0413										
MW-22	26-Nov-07	< 2	< 0.03	< 0.05	< 0.05	< 0.05	0.0058	0.0427	0.0454	0.5	0.0001	5.52	< 0.05	< 0.05	2.8	0.15	< 0.05	1.1	2.4
MW-22	16-Feb-08	0.04	< 0.0005	0.04	< 0.01	< 0.01	0.009	0.129	0.037	0.05	< 0.0005	1.54	< 0.01	< 0.05	1	< 0.01	0.02		
MW-22	17-Jun-08	0.4	<0.03	<0.05	<0.05	<0.05	0.011	0.309	0.0283	0.1	<0.0005	0.42	<0.05	<0.05	0.3	<0.05	<0.05	1.75	
MW-22	18-Aug-08	< 0.2	< 0.03	< 0.05	< 0.05	0.45	0.017	0.251	0.0405	< 0.1	< 0.0005	0.04	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05		
MW-22	10-Nov-08	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05	0.005	0.212	0.0275	< 0.1	< 0.0005	< 0.03	0.05	< 0.05	0.2	0.05	< 0.05	0.14	0.05
MW-22	09-Feb-09						0.0107	0.258	0.0321										
MW-22	16-May-09	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05	0.009	0.254	0.0255	< 0.1	0.0011	0.39	< 0.05	0.13	0.3	< 0.05	< 0.05	0.21	1.4
MW-22	06-Aug-09						0.005	0.175	0.0571										
MW-22	16-Nov-09	<0.2	<0.03	<0.05	<0.05	<0.05	0.004	0.119	0.0328	<0.1	<0.0005	0.49	<0.05	<0.05	1.9	<0.05	0.10	0.42	0.47
MW-22	12-Jan-10						0.004	0.105	0.0357										
MW-22	12-Apr-10	<0.2	<0.03	<0.05	0.05	<0.05	0.005	0.1300	0.0355	0.3	<0.0005	0.54	<0.05	<0.05	1.2	<0.05	<0.05	0.42	0.3
MW-22	06-Jul-10						0.005	0.1350	0.0309										
MW-22	26-Oct-10																		
MW-22	08-Feb-11																		
MW-22	02-May-11																		
MW-22	09-Aug-11																		
MW-22	31-Oct-11																		

Note: Well status listed as "NS" indicates the well was either dry or contained insufficient water for sample collection.

Comprehensive Analytical Data - Historical
DP-71
(Wells with Sufficient Water to Sample)

Rio Algom Mining LLC DP-71 Section 4 Evaporation Ponds

MW-26 Analytical Data

Monitor Well	Date	Well Status	Depth to Water (ft)	Total Depth (ft)	Water in Well (ft)	Specific Cond.	Temp (C)	Ca (mg/L)	Cl (mg/L)	F (mg/L)	NO3(N) (mg/L)	SO4 (mg/L)	TDS (mg/L)	HCO3 (mg/L)	CO3 (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	
MW-26	09-Sep-05			58.98	0														
MW-26	20-Dec-05	NS	35.28	35.43	0.15														
MW-26	07-Mar-06	NS	35.38	35.57	0.19														
MW-26	13-Jun-06	NS		35.21	0														
MW-26	29-Aug-06		33.95	35.25	1.3														
MW-26	27-Nov-06	NS		34.81	35.25	0.44													
MW-26	26-Jan-07	NS		34.79	35.65	0.86													
MW-26	01-May-07	NS		34.81	35.27	0.46													
MW-26	10-Sep-07	NS		33.96	35.26	1.3													
MW-26	26-Nov-07	NS		33.93	35.21	1.28													
MW-26	18-Feb-08		33.94	35.24	1.3	5980	11.6	7.72	63.9	6	0.5	1.61	45	320	229	7	11.3	38.5	7.2
MW-26	17-Jun-08		35.11	35.26	0.15														
MW-26	18-Aug-08	NS		35.24	0														
MW-26	10-Nov-08	NS		35.14	0														
MW-26	06-Feb-09	NS		35.23	0														
MW-26	18-May-09	NS		35.23	0														
MW-26	08-Aug-09	NS		35.23	0														
MW-26	17-Nov-09	NS		35.25	0														
MW-26	12-Jan-10	NS		35.25	0														
MW-26	12-Apr-10	NS		35.5	0														
MW-26	05-Jul-10	NS		35.25	0														
MW-26	26-Oct-10	NS		35.26	0														
MW-26	08-Feb-11	NS		35.26	0														
MW-26	02-May-11	NS		35.23	0														
MW-26	09-Aug-11	NS		35.21	0														
MW-26	31-Oct-11	NS		35.23	0														

MW-26 Analytical Data Continued

Monitor Well	Date	Al (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)	Cu (mg/L)	As (mg/L)	Se (mg/L)	U (mg/L)	Fe (mg/L)	Pb (mg/L)	Mn (mg/L)	to (mg/L)	Ni (mg/L)	TKN (mg/L)	Ag (mg/L)	Zn (mg/L)	Re-226 & Re-228 (pCi/L)
MW-26	09-Sep-05																	
MW-26	20-Dec-05																	
MW-26	07-Mar-06																	
MW-26	13-Jun-06																	
MW-26	29-Aug-06																	
MW-26	27-Nov-06																	
MW-26	26-Jan-07																	
MW-26	01-May-07																	
MW-26	10-Sep-07																	
MW-26	26-Nov-07																	
MW-26	18-Feb-08	< 0.03	< 0.005	< 0.01	< 0.01	< 0.01	0.003	0	0.083	1.07	0.002	0.888	0.06	< 0.01	2	0.01	< 0.01	
MW-26	17-Jun-08																	
MW-26	18-Aug-08																	
MW-26	10-Nov-08																	
MW-26	06-Feb-09																	
MW-26	18-May-09																	
MW-26	08-Aug-09																	
MW-26	17-Nov-09																	
MW-26	12-Jan-10																	
MW-26	12-Apr-10																	
MW-26	05-Jul-10																	
MW-26	26-Oct-10																	
MW-26	08-Feb-11																	
MW-26	02-May-11																	
MW-26	09-Aug-11																	
MW-26	31-Oct-11																	

Note: Well status listed as "NS" indicates the well was either dry or contained insufficient water for sample collection.

Rio Algom Mining LLC DP-71 Section 4 Evaporation Ponds
MW-32 Analytical Data

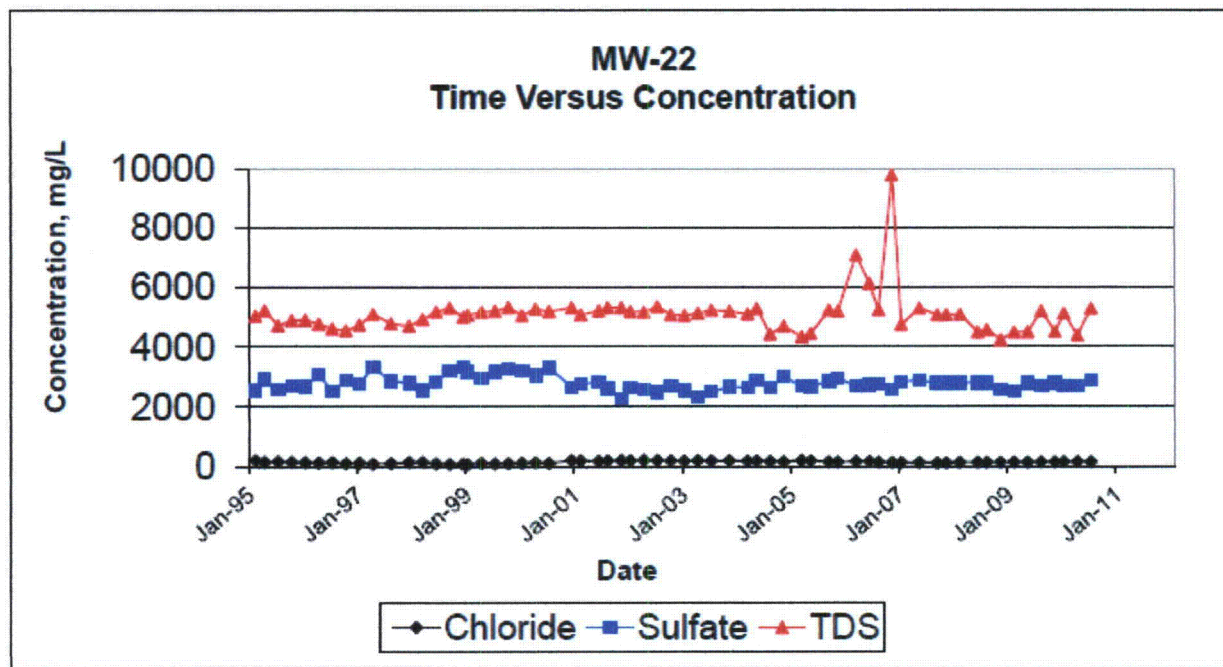
Monitor Well	Date	Well Status	Depth to Water (ft)	Total Depth (ft)	Water In Well (ft)	Specific Cond.	Temp (C)	pH	Ca (mg/L)	Cl (mg/L)	F (mg/L)	NO3(N) (mg/L)	SO4 (mg/L)	TDS (mg/L)	HCO3 (mg/L)	CO3 (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)
MW-32	20-Dec-05		67.97	72.10	4.13	6010	12	7.84	547	179	1	91	2690	5190	353	< 2	324	486	9
MW-32	07-Mar-06		67.56	71.8	4.24	6620	13.5	6.61		163		0.74	2650	5740					
MW-32	12-Jun-06		67.82	71.63	3.71	6470	14	7.3	537	160	1	1.98	2500	5030	939	< 2	333	487	7
MW-32	29-Aug-06		67.66	71.63	3.85	5290	15	6.89		149		9.7	2760	5040					
MW-32	27-Nov-06		68.00	71.75	3.75	6070	12.7	6.34	525	130	0.9	2.01	2630	7340	806	< 2	336	476	7
MW-32	29-Jan-07		68.05	71.82	3.57	5340	11.3	6.51	566	126	1.2	1.44	2420	4500	881		363	485	7.3
MW-32	01-May-07		68.07	71.84	3.57	5400	13.5	7.21	579	130	0.8	9.6	1250	5200	1060	< 2	359	499	7
MW-32	10-Sep-07		68.08	71.65	3.57	5510	15.2	7.28		124		2.1	2700	5120					
MW-32	26-Nov-07		67.66	71.72	3.86	5310	11.9	7.34	579	117		16.9	2810	5180	743	< 2	386	515	8
MW-32	16-Feb-08		67.91	71.69	3.78	5670	11.9	7.6	510	115	0.9	22.3	3100	5210	625	14	341	447	7.3
MW-32	17-Jun-08		68.01	71.61	3.6	5280	14.5	7.2	518	110	1	46.5	2600	4630	400	< 2	348	502	11
MW-32	26-Aug-08		68.01	71.66	3.65	5380	15.9	7.12	594	110	1	43.3	2700	4450	370	< 2	343	485	8
MW-32	10-Nov-08		67.96	71.49	3.53	5210	12.3	7.1	521	110	0.9	37	2700	4350	356	< 2	344	452	8
MW-32	09-Feb-09		68.05	71.60	3.55	5270	12.1	7.08		120		48	2500	4940					
MW-32	16-May-09		68.16	71.6	3.45	5160	14.8	7.19	525	120	0.9	37.2	3000	4880	339	10	352	480	5
MW-32	08-Aug-09		68.16	71.61	3.45	5710	15.3	7.01		120		53.9	2800	5100					
MW-32	16-Nov-09		68.23	71.82	3.39	5160	12.9	7.13	483	110	0.8	50.7	2800	4570	355	< 2	270	587	6
MW-32	12-Jan-10		68.28	71.61	3.35	5080	13.0	7.21		120		49.6	2600	5220					
MW-32	12-Apr-10		68.25	71.82	3.37	5280	14.7	7.29	542	120	1.0	60	2600	4470	306	< 2	365	455	6
MW-32	05-Jul-10		68.26	71.82	3.34	5380	15.6	7.03		120		69.4	2900	5330					
MW-32	26-Oct-10		68.28	71.82	3.36	4910	13.3	7.13	543	120	1.0	55	2600	4100			364	484	6
MW-32	27-Dec-10		68.31	71.61	3.30	4540	11.9	7.16						5200	298	< 2			
MW-32	09-Feb-11		68.27	71.82	3.35	3470	12.2	7.25		120		63	3000	5200					
MW-32	02-May-11		68.36	71.63	3.27	1732	14.2	7.05	583	130	1	57	2600	4560	271	< 2	399	474	7
MW-32	06-Aug-11		68.32	71.63	3.31	5330	14.5	7.09		161		59.4	2800	5450					
MW-32	31-Oct-11		68.31	71.61	3.30	4590	13.5	7.06	556	130	1	56	2900	4810	271	< 2	403	445	6

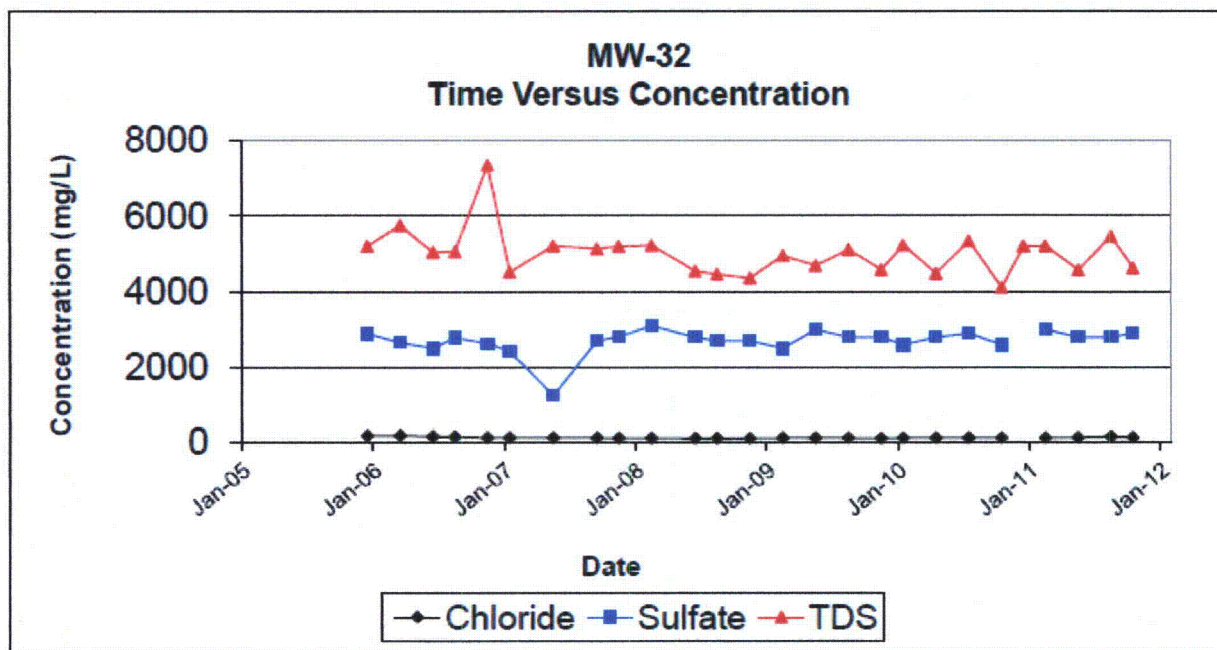
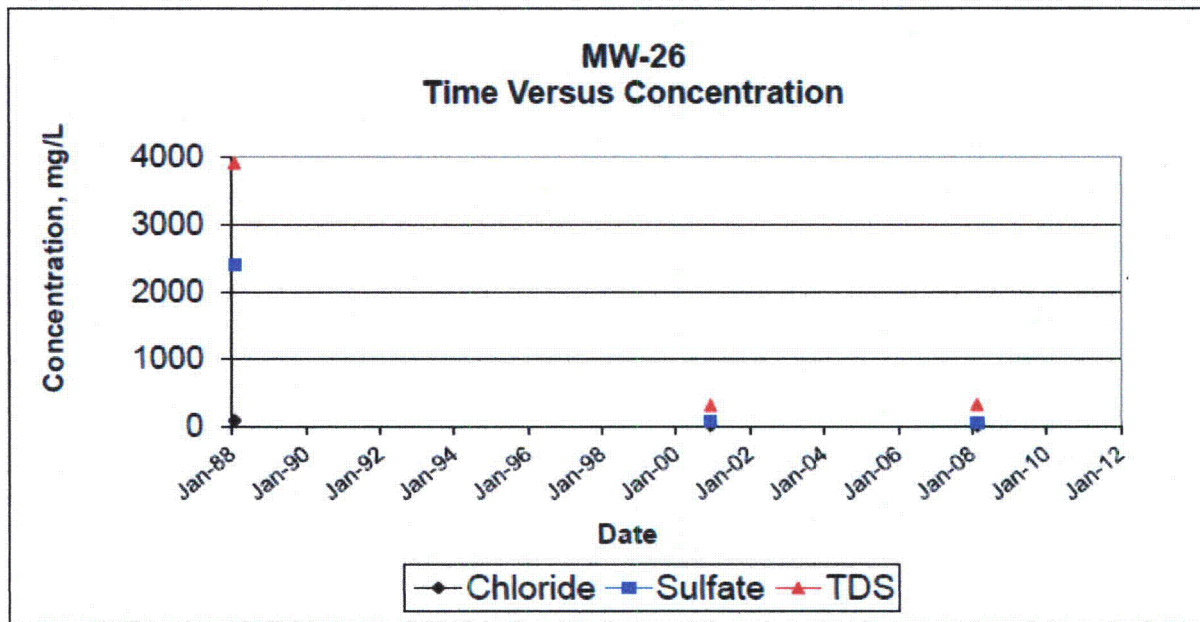
MW-32 Analytical Data Continued

Monitor Well	Date	Al (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)	Cu (mg/L)	As (mg/L)	Se (mg/L)	U (mg/L)	Fe (mg/L)	Pb (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	TKN (mg/L)	Ag (mg/L)	Zn (mg/L)	Re-226 (pCi/L)	Re-228 (pCi/L)
MW-32	20-Dec-05	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05	< 0.003	0.367	0.0693	< 0.1	0.0009	0.61	< 0.05	< 0.05	1.3	< 0.05	< 0.05	0.13	
MW-32	07-Mar-06						0.0078	0.035	0.0687										
MW-32	12-Jun-06	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05	0.022	0.0175	0.0604	0.1	< 0.0002	1.76	< 0.05	< 0.05	6.3	< 0.05	< 0.05	1.2	
MW-32	29-Aug-06						0.005	0.0287	0.0912										
MW-32	27-Nov-06	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05	0.0139	0.0196	0.0592	2.8	0.0001	1.41	< 0.05	< 0.05	2.3	< 0.05	< 0.05	2.5	
MW-32	29-Jan-07	< 0.03	< 0.005	< 0.01	< 0.01	< 0.01	0.0162	0.0256	0.0404	0.89	< 0.0001	1.8	< 0.01	0.03	2.6	< 0.01	< 0.01		
MW-32	01-May-07	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05	0.021	0.0218	0.0604	0.7	< 0.0005	1.62	0.06	< 0.05	6.6	< 0.05	< 0.05	0.33	1.6
MW-32	10-Sep-07						0.0129	0.0191	0.0736										
MW-32	26-Nov-07	< 2	< 0.03	< 0.05	< 0.05	< 0.05	0.004	0.0256	0.0326	0.3	< 0.0005	1.07	< 0.05	< 0.05	6.9	0.08	0.19	0.38	3.7
MW-32	16-Feb-08	0.04	< 0.005	0.04	< 0.01	< 0.01	0.014	0.0753	0.0842	0.28	< 0.0005	0.615	< 0.02	< 0.05	2.9	< 0.02	< 0.01		
MW-32	17-Jun-08	0.5	< 0.03	< 0.05	< 0.05	< 0.05	0.009	0.141	0.0646	2	< 0.0005	0.81	0.06	< 0.05	0.3	< 0.05	< 0.05	3.25	
MW-32	26-Aug-08	< 2	< 0.03	< 0.05	< 0.05	< 0.05	0.016	0.16	0.137	< 0.1	< 0.0005	0.63	< 0.05	< 0.05	< 0.1	0.11	< 0.05		
MW-32	10-Nov-08	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05	0.004	0.164	0.0655	< 0.1	< 0.0005	0.48	0.07	< 0.05	0.1	< 0.05	0.06	0.3	0.38
MW-32	09-Feb-09						0.0084	0.166	0.0691										
MW-32	16-May-09	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05	0.007	0.148	0.0592	< 0.1	0.0009	0.43	< 0.05	< 0.05	0.3	< 0.05	< 0.05	0.29	1.6
MW-32	08-Aug-09						0.006	0.174	0.0641										
MW-32	16-Nov-09	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05	0.009	0.178	0.0744	< 0.1	< 0.0005	0.94	< 0.05	< 0.05	0.1	0.1	< 0.05	0.57	0.73
MW-32	12-Jan-10						0.008	0.243	0.0738										
MW-32	12-Apr-10	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05	0.012	0.225	0.0710	< 0.1	0.0005	0.51	< 0.05	< 0.05	0.4	< 0.05	< 0.05	0.26	0.62
MW-32	05-Jul-10						0.007	0.336	0.0566										
MW-32	26-Oct-10	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05	0.011	0.2356	0.0620	< 0.1	0.0018	0.50	< 0.05	< 0.05	0.5	< 0.05	< 0.05	0.34	1.2
MW-32	27-Dec-10																		
MW-32	09-Feb-11						0.014	0.3775	0.0634										
MW-32	02-May-11	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05	< 0.05	0.3463	0.0674	< 0.1	< 0.0005	0.1	0.07	0.06	0.1	< 0.05	< 0.05	0.25	0.5
MW-32	06-Aug-11						0.013	0.3533	0.0583										
MW-32	31-Oct-11	< 0.2	< 0.005	< 0.01	< 0.01	< 0.02	< 0.003	0.3662	0.0627	< 0.02	0.0006	0.047	< 0.01	< 0.05	0.1	< 0.01	< 0.01	4.2	< 0.15

Time versus Concentration Plots

MW-22, MW-26, and MW-32



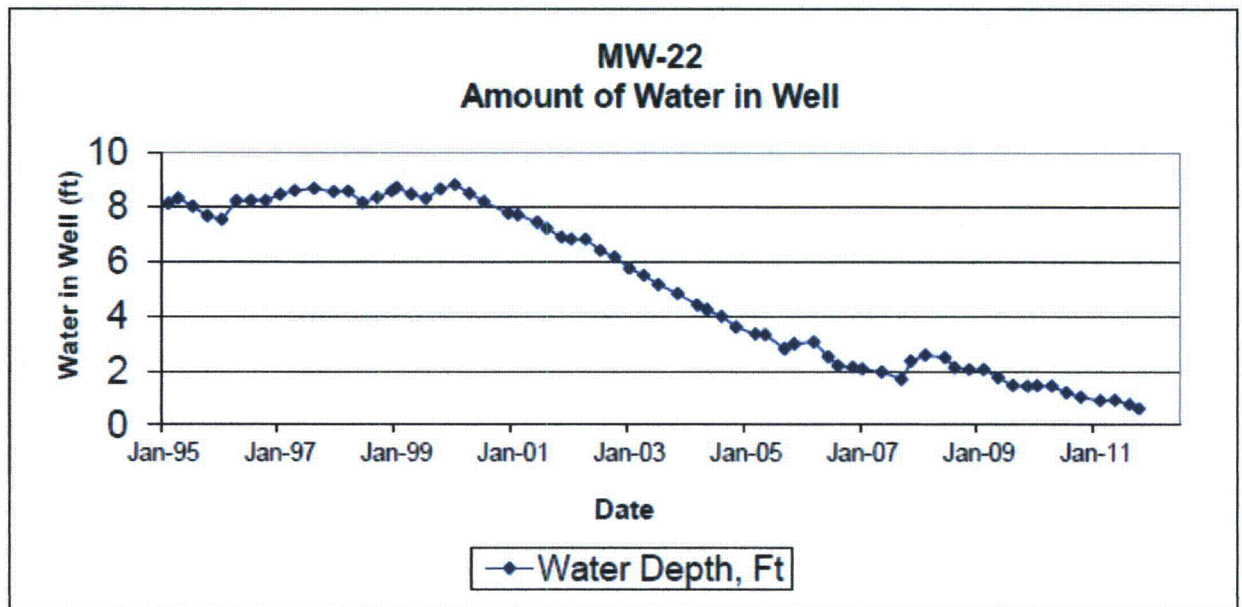


Hydrographs

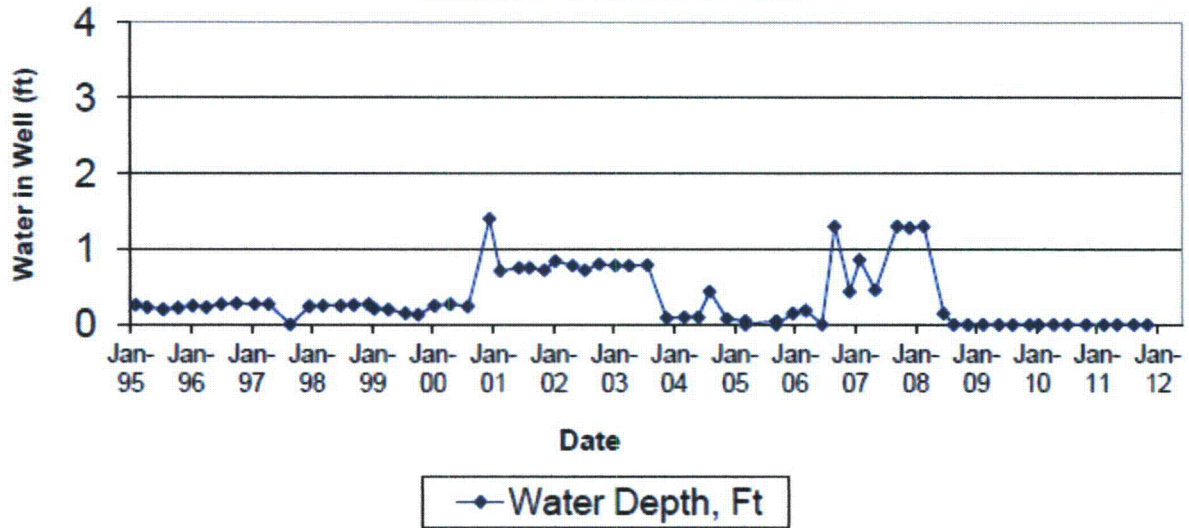
DP-71 Well Network

MW-22, MW-26, and MW-32

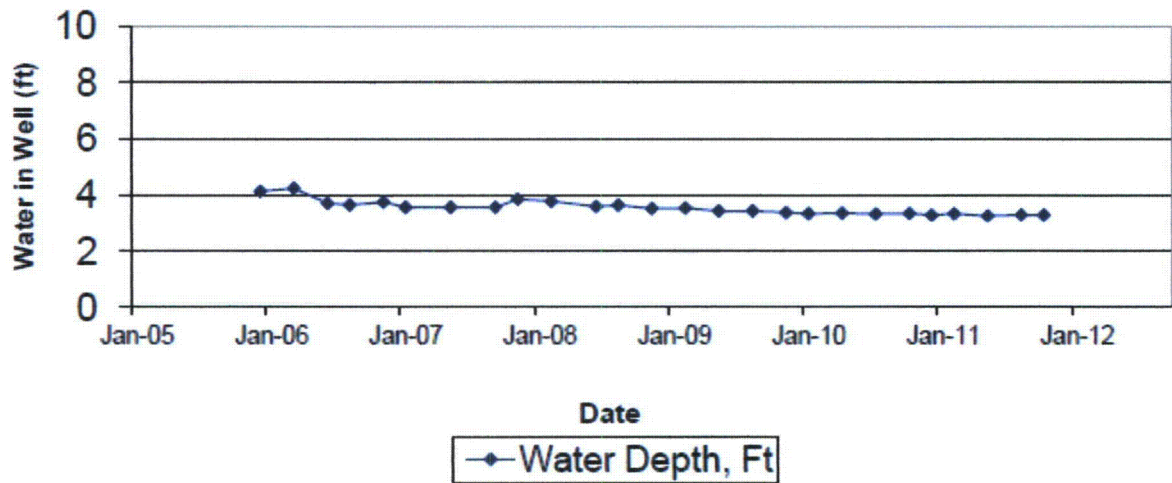
Since all other wells continue to be dry, Rio Algom wishes to incorporate the hydrographs for the other wells associated with DP-71 that were included within the April 3, 2006 submittal as part of this submittal.



MW-26
Amount of Water in Well



MW-32
Amount of Water in Well



Laboratory Reports

DP-71

November 30, 2011

Report to:

Chuck Wentz
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

Project ID: 58343/6300052977

ACZ Project ID: L91674

Chuck Wentz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 03, 2011. This project has been assigned to ACZ's project number, L91674. 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 L91674. 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 December 30, 2011. 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.



Scott Habermehl has reviewed
and approved this report.



Rio Algom Mining Company

Project ID: 58343/6300052977
Sample ID: MW-32

ACZ Sample ID: **L91674-01**
Date Sampled: 10/31/11 10:54
Date Received: 11/03/11
Sample Matrix: Ground Water

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							11/18/11 12:15	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.2	0.8	11/09/11 14:34	jjc
Arsenic, dissolved	M200.8 ICP-MS		U		mg/L	0.003	0.01	11/18/11 10:29	msh
Cadmium, dissolved	M200.7 ICP		U		mg/L	0.005	0.02	11/08/11 18:34	aeb
Calcium, dissolved	M200.7 ICP	558			mg/L	0.2	1	11/08/11 18:34	aeb
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	11/08/11 18:34	aeb
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	11/08/11 18:34	aeb
Copper, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	11/08/11 18:34	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	11/08/11 18:34	aeb
Lead, dissolved	M200.8 ICP-MS	0.0006	B		mg/L	0.0005	0.003	11/18/11 10:29	msh
Magnesium, dissolved	M200.7 ICP	403			mg/L	0.2	1	11/08/11 18:34	aeb
Manganese, dissolved	M200.7 ICP	0.047			mg/L	0.005	0.03	11/08/11 18:34	aeb
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	11/08/11 18:34	aeb
Nickel, dissolved	M200.7 ICP		U		mg/L	0.05	0.3	11/09/11 14:34	jjc
Potassium, dissolved	M200.7 ICP	6.0			mg/L	0.3	2	11/08/11 18:34	aeb
Selenium, dissolved	M200.8 ICP-MS	0.3562			mg/L	0.0005	0.001	11/18/11 10:29	msh
Silver, dissolved	M200.7 ICP		U	*	mg/L	0.01	0.03	11/08/11 18:34	aeb
Sodium, dissolved	M200.7 ICP	445		*	mg/L	0.3	2	11/08/11 18:34	aeb
Uranium, dissolved	M200.8 ICP-MS	0.0627			mg/L	0.0005	0.003	11/18/11 10:29	msh
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	11/08/11 18:34	aeb

Rio Algom Mining Company

Project ID: 58343/6300052977

Sample ID: MW-32

ACZ Sample ID: **L91674-01**

Date Sampled: 10/31/11 10:54

Date Received: 11/03/11

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		271			mg/L	2	20	11/09/11 0:00	cra
Carbonate as CaCO ₃			U		mg/L	2	20	11/09/11 0:00	cra
Hydroxide as CaCO ₃			U		mg/L	2	20	11/09/11 0:00	cra
Total Alkalinity		271			mg/L	2	20	11/09/11 0:00	cra
Cation-Anion Balance	Calculation								
Cation-Anion Balance		7.1			%			11/30/11 0:00	calc
Sum of Anions		70.0			meq/L	0.1	0.5	11/30/11 0:00	calc
Sum of Cations		80.7			meq/L	0.1	0.5	11/30/11 0:00	calc
Chloride	SM4500Cl-E	130			mg/L	10	50	11/15/11 16:08	lhb
Fluoride	SM4500F-C	1.0		*	mg/L	0.1	0.5	11/15/11 14:40	las
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	56			mg/L	1	5	11/17/11 23:15	pjb
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.1	B	*	mg/L	0.1	0.5	11/19/11 13:32	pjb
Residue, Filterable (TDS) @180C	SM2540C	4930		*	mg/L	10	20	11/04/11 16:28	las
Sulfate	D516-02 - Turbidimetric	2900			mg/L	100	500	11/16/11 14:54	lhb
TDS (calculated)	Calculation	4610			mg/L	10	50	11/30/11 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.07						11/30/11 0:00	calc

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. 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, typically 5 times the MDL.
<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>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)

<i>B</i>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<i>H</i>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<i>L</i>	Target analyte response was below the laboratory defined negative threshold.
<i>U</i>	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, Third Edition with Update III, December 1996.
- (5) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).

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.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Rio Algom Mining CompanyACZ Project ID: **L91674**

Project ID: 58343/6300052977

Alkalinity as CaCO₃

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313206													
WG313206PBW1	PBW	11/09/11 13:57				U	mg/L		-20	20			
WG313206LCSW2	LCSW	11/09/11 14:11	WC111027-8	820.0001		767.9	mg/L	93.6	90	110			
L91712-01DUP	DUP	11/09/11 17:11			225	221.5	mg/L				1.6	20	
WG313206PBW2	PBW	11/09/11 17:16				3.5	mg/L		-20	20			
WG313206LCSW5	LCSW	11/09/11 17:28	WC111027-8	820.0001		782.3	mg/L	95.4	90	110			
WG313206PBW4	PBW	11/10/11 0:42				13.8	mg/L		-20	20			
WG313206LCSW11	LCSW	11/10/11 0:55	WC111027-8	820.0001		842.9	mg/L	102.8	90	110			
WG313206LCSW14	LCSW	11/10/11 4:22	WC111027-8	820.0001		865.2	mg/L	105.5	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313230													
WG313230ICV	ICV	11/09/11 13:56	II111025-1	2		1.983	mg/L	99.2	95	105			
WG313230ICB	ICB	11/09/11 14:00				U	mg/L		-0.09	0.09			
WG313230LFB	LFB	11/09/11 14:12	II111104-3	1		1.038	mg/L	103.8	85	115			
L91661-03AS	AS	11/09/11 14:25	II111104-3	1	.11	1.136	mg/L	102.6	85	115			
L91661-03ASD	ASD	11/09/11 14:28	II111104-3	1	.11	1.135	mg/L	102.5	85	115	0.09	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313830													
WG313830ICV	ICV	11/18/11 9:42	MS111007-2	.05		.05148	mg/L	103	90	110			
WG313830ICB	ICB	11/18/11 9:45				U	mg/L		-0.0015	0.0015			
WG313830LFB	LFB	11/18/11 9:49	MS111006-3	.05005		.04911	mg/L	98.1	85	115			
L91661-02AS	AS	11/18/11 10:00	MS111006-3	.05005	U	.05223	mg/L	104.4	70	130			
L91661-02ASD	ASD	11/18/11 10:04	MS111006-3	.05005	U	.05056	mg/L	101	70	130	3.25	20	

Cadmium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	2		2.0794	mg/L	104	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.015	0.015			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	.5		.5426	mg/L	108.5	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	.5	U	.5516	mg/L	110.3	85	115			
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	.5	U	.5579	mg/L	111.6	85	115	1.14	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	100		102.31	mg/L	102.3	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.6	0.6			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	67.99734		70.53	mg/L	103.7	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	67.99734	157	221	mg/L	94.1	85	115			
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	67.99734	157	221.02	mg/L	94.2	85	115	0.01	20	

Rio Algom Mining Company
Project ID: 58343/6300052977

ACZ Project ID: **L91674**

Chloride SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313636													
WG313636ICB	ICB	11/15/11 10:24				U	mg/L		-3	3			
WG313636ICV	ICV	11/15/11 10:24	WI111110-3	55.11		59.3	mg/L	107.6	90	110			
WG313636LFB1	LFB	11/15/11 15:55	WI110802-1	30		32	mg/L	106.7	90	110			
L91799-02DUP	DUP	11/15/11 15:55			134	134.3	mg/L				0.2	20	
WG313636LFB2	LFB	11/15/11 16:03	WI110802-1	30		32.1	mg/L	107	90	110			
L91799-01AS	AS	11/15/11 16:18	10XCL	30	80	109	mg/L	96.7	90	110			

Chromium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	2		2.093	mg/L	104.7	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.03	0.03			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	.5		.539	mg/L	107.8	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	.5	U	.563	mg/L	112.6	85	115			
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	.5	U	.557	mg/L	111.4	85	115	1.07	20	

Cobalt, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	2		2.033	mg/L	101.7	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.03	0.03			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	.5		.526	mg/L	105.2	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	.5	U	.549	mg/L	109.8	85	115			
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	.5	U	.547	mg/L	109.4	85	115	0.36	20	

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	2		1.954	mg/L	97.7	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.03	0.03			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	.5		.509	mg/L	101.8	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	.5	U	.526	mg/L	105.2	85	115			
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	.5	U	.518	mg/L	103.6	85	115	1.53	20	

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313612													
WG313612ICV	ICV	11/15/11 14:08	WC111109-7	2		1.89	mg/L	94.5	95	105			
WG313612ICB	ICB	11/15/11 14:18				U	mg/L		-0.3	0.3			
WG313612LFB1	LFB	11/15/11 14:33	WC110818-4	5.005		4.77	mg/L	95.3	90	110			
L91723-01AS	AS	11/15/11 14:56	WC110818-4	5.005	.9	5.66	mg/L	95.1	90	110			
L91723-01DUP	DUP	11/15/11 15:03			.9	.84	mg/L				6.9	20	RA
WG313612LFB2	LFB	11/15/11 18:03	WC110818-4	5.005		4.51	mg/L	90.1	90	110			

Rio Algom Mining Company
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ACZ Project ID: **L91674**

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	2		2.009	mg/L	100.5	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.06	0.06			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	1		1.072	mg/L	107.2	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	1	U	1.076	mg/L	107.6	85	115			
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	1	U	1.084	mg/L	108.4	85	115	0.74	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313830													
WG313830ICV	ICV	11/18/11 9:42	MS111007-2	.05		.04829	mg/L	96.6	90	110			
WG313830ICB	ICB	11/18/11 9:45				U	mg/L		-0.0003	0.0003			
WG313830LFB	LFB	11/18/11 9:49	MS111006-3	.05005		.0453	mg/L	90.5	85	115			
L91661-02AS	AS	11/18/11 10:00	MS111006-3	.05005	U	.04488	mg/L	89.7	70	130			
L91661-02ASD	ASD	11/18/11 10:04	MS111006-3	.05005	U	.04401	mg/L	87.9	70	130	1.96	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	100		103.16	mg/L	103.2	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.6	0.6			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	50.0051		52.03	mg/L	104	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	50.0051	228	272.96	mg/L	89.9	85	115			
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	50.0051	228	273.06	mg/L	90.1	85	115	0.04	20	

Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	2		1.9998	mg/L	100	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.015	0.015			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	.5		.5502	mg/L	110	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	.5	U	.5492	mg/L	109.8	85	115			
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	.5	U	.5509	mg/L	110.2	85	115	0.31	20	

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	2		2.03	mg/L	101.5	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.03	0.03			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	.5		.511	mg/L	102.2	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	.5	.02	.518	mg/L	99.6	85	115			
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	.5	.02	.53	mg/L	102	85	115	2.29	20	

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Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313230													
WG313230ICV	ICV	11/09/11 13:56	II111025-1	2.002		1.965	mg/L	98.2	95	105			
WG313230ICB	ICB	11/09/11 14:00				U	mg/L		-0.03	0.03			
WG313230LFB	LFB	11/09/11 14:12	II111104-3	.5		.517	mg/L	103.4	85	115			
L91661-03AS	AS	11/09/11 14:25	II111104-3	.5	U	.541	mg/L	108.2	85	115			
L91661-03ASD	ASD	11/09/11 14:28	II111104-3	.5	U	.545	mg/L	109	85	115	0.74	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
WG313853													
WG313853ICV	ICV	11/17/11 20:19	WI111001-2	2.416		2.385	mg/L	98.7	90	110			
WG313853ICB	ICB	11/17/11 20:20				U	mg/L		-0.06	0.06			
WG313856													
WG313856LFB	LFB	11/17/11 22:40	WI110813-3	2		2.044	mg/L	102.2	90	110			
L91674-01AS	AS	11/17/11 23:16	WI110813-3	100	56	160.2	mg/L	104.2	90	110			
L91762-01DUP	DUP	11/17/11 23:18			6.76	6.704	mg/L				0.8	20	

Nitrogen, total Kjeldahl M351.2 - TKN by Block Digester

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313949													
WG313949ICV	ICV	11/19/11 13:23	WI111115-4	4		3.63	mg/L	90.8	90	110			
WG313949ICB	ICB	11/19/11 13:24				U	mg/L		-0.3	0.3			
WG313881LRB	LRB	11/19/11 13:25				.18	mg/L		-0.3	0.3			
WG313881LFB	LFB	11/19/11 13:26	WI111115-3	2.5		2.6	mg/L	104	90	110			
L91642-01LFM	LFM	11/19/11 13:29	WI111115-3	2.5	.2	2.54	mg/L	93.6	90	110			
L91642-02DUP	DUP	11/19/11 13:31			.2	.27	mg/L				29.8	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	20		20.01	mg/L	100.1	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.9	0.9			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	99.97161		100.84	mg/L	100.9	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	99.97161	28.5	132.85	mg/L	104.4	85	115			
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	99.97161	28.5	133.79	mg/L	105.3	85	115	0.71	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313001													
WG313001PBW	PBW	11/04/11 16:00				U	mg/L		-20	20			
WG313001LCSW	LCSW	11/04/11 16:01	PCN37652	260		244	mg/L	93.8	80	120			
L91674-01DUP	DUP	11/04/11 16:29			4930	4960	mg/L				0.6	20	

Rio Algom Mining Company

Project ID: 58343/6300052977

ACZ Project ID: **L91674****Selenium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313830													
WG313830ICV	ICV	11/18/11 9:42	MS111007-2	.05		.0542	mg/L	108.4	90	110			
WG313830ICB	ICB	11/18/11 9:45				U	mg/L		-0.0003	0.0003			
WG313830LFB	LFB	11/18/11 9:49	MS111006-3	.05005		.05053	mg/L	101	85	115			
L91661-02AS	AS	11/18/11 10:00	MS111006-3	.05005	U	.05662	mg/L	113.1	70	130			
L91661-02ASD	ASD	11/18/11 10:04	MS111006-3	.05005	U	.05402	mg/L	107.9	70	130	4.7	20	

Silver, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	.998		1.007	mg/L	100.9	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.03	0.03			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	.5		.502	mg/L	100.4	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	.5	U	.361	mg/L	72.2	85	115			M2 ZA
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	.5	U	.373	mg/L	74.6	85	115	3.27	20	M2 ZA

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	100		99.21	mg/L	99.2	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.9	0.9			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	100.018		99.86	mg/L	99.8	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	100.018	520	589.85	mg/L	69.8	85	115			M3
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	100.018	520	597.55	mg/L	77.5	85	115	1.3	20	M3

Sulfate

D516-02 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313727													
WG313727ICB	ICB	11/16/11 12:16				U	mg/L		-3	3			
WG313727ICV	ICV	11/16/11 12:17	WI111111-1	20		19.4	mg/L	97	90	110			
WG313727LFB	LFB	11/16/11 14:35	WI111111-3	10.03		9.3	mg/L	92.7	90	110			
L91779-01AS	AS	11/16/11 14:44	SO4TURB5	10	40	50.7	mg/L	107	90	110			
L91674-01DUP	DUP	11/16/11 14:55			2900	2900	mg/L				0	20	

Uranium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313830													
WG313830ICV	ICV	11/18/11 9:42	MS111007-2	.05		.05501	mg/L	110	90	110			
WG313830ICB	ICB	11/18/11 9:45				U	mg/L		-0.0003	0.0003			
WG313830LFB	LFB	11/18/11 9:49	MS111006-3	.05		.05113	mg/L	102.3	85	115			
L91661-02AS	AS	11/18/11 10:00	MS111006-3	.05	U	.05095	mg/L	101.9	70	130			
L91661-02ASD	ASD	11/18/11 10:04	MS111006-3	.05	U	.04947	mg/L	98.9	70	130	2.95	20	

Rio Algom Mining CompanyACZ Project ID: **L91674**

Project ID: 58343/6300052977

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313066													
WG313066ICV	ICV	11/08/11 17:17	II111025-1	2		1.989	mg/L	99.5	95	105			
WG313066ICB	ICB	11/08/11 17:21				U	mg/L		-0.03	0.03			
WG313066LFB	LFB	11/08/11 17:33	II111104-3	.5		.511	mg/L	102.2	85	115			
L91672-08AS	AS	11/08/11 18:22	II111104-3	.5	U	.512	mg/L	102.4	85	115			
L91672-08ASD	ASD	11/08/11 18:25	II111104-3	.5	U	.517	mg/L	103.4	85	115	0.97	20	

Rio Algom Mining CompanyACZ Project ID: **L91674**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L91674-01	WG313066	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Sodium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG313612	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG313949	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG313001	Residue, Filterable (TDS) @180C	SM2540C	ZO	Concentration is based on a final residue greater than 200 mg.

Rio Algom Mining Company

Project ID: 58343/6300052977

Sample ID: MW-32

Locator:

ACZ Sample ID: **L91674-01**

Date Sampled: 10/31/11 10:54

Date Received: 11/03/11

Sample Matrix: *Ground Water*Radium 226, dissolved
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, dissolved	11/19/11 12:57		4.2	0.28	0.24	pCi/L	*	mtb

Radium 228, dissolved
M9320

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, dissolved	11/23/11 15:18		-0.15	0.45	1	pCi/L		zsh

**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.
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.
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Replicate Error Ratio (RER) accepted because sample concentrations are less than 10x the MDL.
U	No nuclides detected above the Lower Limit of Detection (LLD)
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
X	QC is out of control. See Case Narrative.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater, 19th edition (1995) & 20th edition (1998).
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

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

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Rio Algom Mining Company

Project ID: 58343/6300052977

ACZ Project ID: **L91674****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
WG314030																
WG313497PBW	PBW	11/19/11						-.02	0.19	0.33			0.66			
WG313497LCSW	LCSW	11/19/11	RC110822-1	23.92				22	0.77	0.23	92	55	124			
L91649-01DUP	DUP-RE	11/19/11			98	1.4	0.15	84	1.2	0.12				7.59	2	RN
L91649-01DUP	DUP-RP	11/19/11			98	1.4	0.15	84	1.2	0.12				15.4	20	
L91750-01DUP	DUP-RE	11/19/11			7.2	0.3	0.08	7	0.38	0.22				0.41	2	
L91649-01MS	MS	11/19/11	RC110822-1	23.92	98	1.4	0.15	110	1.7	0.25	50.2	55	124			M3

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
WG314243																
WG313569PBW	PBW	11/23/11						.03	0.23	0.42			0.84			
WG313569LCSW	LCSW	11/23/11	PCN35656	17.16				15	1	0.98	87.4	47	123			
L91642-01DUP	DUP-RE	11/23/11			0.42	0.45	1.3	.05	0.43	1.1				0.59	2	
L91562-03MS	MS	11/23/11	PCN35656	17.16	1	0.46	1	13	0.89	0.97	69.9	47	123			
L91562-02DUP	DUP-RE	11/23/11			1.2	0.49	1.2	.02	0.43	1.3				1.81	2	

Rio Algom Mining CompanyACZ Project ID: **L91674**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L91674-01	WG314030	Radium 226, dissolved	M903.1	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M903.1	RN	Sample concentration is greater than 5x LLD; RPD was used for data validation. Replicate Error Ratio (RER) is greater than 2. Precision judged to be in control.

Rio Algom Mining Company

ACZ Project ID: **L91674**

No certification qualifiers associated with this analysis

Rio Algom Mining Company
58343/6300052977

ACZ Project ID: L91674

Date Received: 11/03/2011 09:26

Received By: ksj

Date Printed: 11/3/2011

Receipt Verification

- 1) Does this project require special handling procedures such as CLP protocol?
- 2) Are the custody seals on the cooler intact?
- 3) Are the custody seals on the sample containers intact?
- 4) Is there a Chain of Custody or other directive shipping papers present?
- 5) Is the Chain of Custody complete?
- 6) Is the Chain of Custody in agreement with the samples received?
- 7) Is there enough sample for all requested analyses?
- 8) Are all samples within holding times for requested analyses?
- 9) Were all sample containers received intact?
- 10) Are the temperature blanks present?
- 11) Are the trip blanks (VOA and/or Cyanide) present?
- 12) Are samples requiring no headspace, headspace free?
- 13) Do the samples that require a Foreign Soils Permit have one?

YES	NO	NA
		X
X		
		X
X		
X		
	X	
X		
X		
		X
		X
		X
		X

Exceptions: If you answered no to any of the above questions, please describe

A raw container was not received for the alkalinity. Per the project manager the alkalinity will be run off of the white container.

Contact (For any discrepancies, the client must be contacted)

The client was not contacted.

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
Na14252	1.5	18

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

Notes

Rio Algom Mining Company
58343/6300052977

ACZ Project ID: L91674
Date Received: 11/03/2011 09:26
Received By: ksj
Date Printed: 11/3/2011

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L91674-01	MW-32		Y		Y							

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

RIO ALGOM MINING LLC - PROJECT CODES

ACL-ALL	ACL-TRB	ACL-TRA	ACL-KD	DP-71-Q	SEC 4 PONDS ^{see note}	DP-71-S
50/year	30/year	15/year	35/year	10/year	20/year	10/year
Chloride	Chloride	Chloride	Chloride	Chloride	Chloride	Chloride
Sulfate	Sulfate	Sulfate	Sulfate	Sulfate	Sulfate	Sulfate
TDS	TDS	TDS	TDS	TDS	TDS	TDS
Nitrate + Nitrite	Nitrate + Nitrite	Nitrate + Nitrite	Nitrate + Nitrite	Nitrate + Nitrite	Nitrate + Nitrite	Nitrate + Nitrite
<i>Molybdenum</i>	<i>Cyanide</i>	<i>Cyanide</i>	<i>Antimony</i>	<i>Arsenic</i>	<i>Arsenic</i>	<i>Arsenic</i>
<i>Nickel</i>	<i>Molybdenum</i>	<i>Molybdenum</i>	<i>Arsenic</i>	<i>Selenium</i>	<i>Selenium</i>	<i>Selenium</i>
<i>Selenium</i>	<i>Nickel</i>	<i>Nickel</i>	<i>Beryllium</i>	<i>Uranium</i>	<i>Uranium</i>	<i>Uranium</i>
<i>Gross Alpha</i>	<i>Selenium</i>	<i>Selenium</i>	<i>Cadmium</i>		Carbonate (CO ₃)	Carbonate (CO ₃)
<i>Radium-226</i>	<i>Gross Alpha</i>	<i>Gross Alpha</i>	<i>Cyanide</i>		Bicarbonate (HCO ₃)	Bicarbonate (HCO ₃)
<i>Radium-228</i>	<i>Radium-226</i>	<i>Radium-226</i>	<i>Lead</i>		Calcium	<i>Calcium</i>
<i>Thorium-230</i>	<i>Radium-228</i>	<i>Radium-228</i>	<i>Molybdenum</i>		Potassium	<i>Potassium</i>
<i>Lead-210</i>	<i>Thorium-230</i>	<i>Thorium-230</i>	<i>Nickel</i>		Magnesium	<i>Magnesium</i>
<i>Uranium</i>	<i>Lead-210</i>	<i>Lead-210</i>	<i>Selenium</i>		Sodium	<i>Sodium</i>
	<i>Uranium</i>	<i>Uranium</i>	<i>Gross Alpha</i>		Lead	<i>Lead</i>
			<i>Radium-226</i>		Nickel	<i>Nickel</i>
			<i>Radium-228</i>		Silver	<i>Silver</i>
			<i>Thorium-230</i>		Iron	<i>Iron</i>
			<i>Lead-210</i>		Molybdenum	<i>Molybdenum</i>
			<i>Uranium</i>		Zinc	<i>Zinc</i>
					Manganese	<i>Manganese</i>
					Copper	<i>Copper</i>
					Cobalt	<i>Cobalt</i>
					Chromium	<i>Chromium</i>
					Cadmium	<i>Cadmium</i>
					Aluminum	<i>Aluminum</i>
					Fluoride	<i>Fluoride</i>
					Radium-226	<i>Radium-226</i>
					Radium-228	<i>Radium-228</i>
					Total Kjeldal nitrogen	Total Kjeldal nitrogen

Wednesday, August 08, 2007
versions.

The Wednesday, August 08, 2007 product code replaces all previous