RIO ALGOM MINING CORP.

SMITH RANCH PROJECT

WDEQ PERMIT #633
NRC LICENSE SUA-1548
DOCKET 40-8964

WELLFIELD 4 ANNEX
VOLUME 1

PRE-OPERATIONAL DATA SUBMITTAL

JUNE 1, 2000

ATTACHMENT K
SMITH RANCH FACILITY
M SAND WELLFIELD 4A
MULTI-WELL PUMP TESTS

FOR:

WDEQ/LQD
PERMIT #633
NRC LICENSE SUA-1548
DOCKET 40-8964

BY:

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K.1.0 INTRODUCTION, OBJECTIVES AND SUMMARY

As required by Rio Algom's Smith Ranch Project Permit #633 and NRC License SUA-1548, a pump test for each well field is required prior to operation. This report for Wellfield 4A discusses the pump tests performed to meet this requirement. The report is submitted for inclusion as Attachment K in Appendix D-6 of the DEQ permit application dated March 30, 1988.

The objectives of the pre-operational pump test as stated in Chapter 5 of the DEQ permit are to:

1) demonstrate communication between the area to be mined and the surrounding monitor ring;
2) determine the degree of hydrologic communication between the production zone and the overlying (O Sand) and the underlying (K Sand) aquifers;
3) determine the hydrologic properties of the production zone aquifer;
4) determine the presence of any hydrologic barriers.

In order to meet these objectives, two pump tests were performed in November and December of 1999. The first test, the PW4-4 test, was designed to define the southeastern half of Wellfield 4A. The second test, the PW4-3 test, was designed to define the northwestern half of Wellfield 4A. The PW4-4 test was conducted over the six days between November 5 and November 11, 1999. Pre-test data was collected for 3 days prior to the initiation of each test. Well PW4-4 was pumped for 72 hours and recovery was observed for 72 hours. The PW4-3 test was conducted over an eight-day period with well PW4-3 being pumped for 96 hours and

recovery observed for 96 hours. The PW4-3 test was conducted from November 29 through December 7, 1999.

Test results clearly demonstrate communication between the production zone and the outlying monitor wells, except for the three northwestern monitoring ring wells. These three wells showed good communications with Wellfield 4 in its multi-well test. The influence of operations in Wellfield 4 extend beyond wells M401, M402 and M434 to the southeast and, therefore, demonstrate that the M Sand near these three wells is connected with the remainder of the Wellfield 4A M Sand to the southeast. A few M Sand wells were used in both multi-well tests to demonstrate continuity between the two tests. These tests also demonstrate that there is no measurable communication across the aquitards with the overlying O Sand and underlying K Sand aquifers. Hydrologic properties and the lack of boundaries are discussed in detail in the body of this report.

K.1.1 SUMMARY OF TEST RESULTS

Two multi-well pump tests were conducted in the Wellfield 4A area. The PW4-3 and PW4-4 multi-well pump tests consisted of four and three day pumping phases and four and three days of recovery from pumping, respectively. Pumping well PW4-4 demonstrated communication with all of the southeastern monitoring ring wells. Pumping of well PW4-3 proved good communication with all of the northwestern monitoring ring wells. However, wells M401, M402 and M434, which are adjacent to Wellfield 4, had a subdued response due to interference caused by Wellfield 4 activities. Good communication between the well field patterns and the

monitor ring in this area is demonstrated by: 1) the influence of activities in Wellfield 4 during the Wellfield 4A pump test extended beyond M401, M402, and M434 into Wellfield 4A, 2) the previous Wellfield 4 pump test showed good drawdown in M401, M402 and M434, and 3) the M Sand isopach map (Figure K.2-10) shows a continuous production sand in this area. Results of these two multi-well tests are presented in Sections K.5 and K.6, respectively. Two monitoring ring wells were used in both tests to demonstrate continuity between the two tests. These wells demonstrate that all of the monitoring ring wells are in communication with the M Sand in the mine area.

Both of the multi-well pump tests demonstrated good confinement between the overlying O Sand and the M Sand production zone and between the underlying K and M Sands in Wellfield 4A.

No boundaries within the M Sand were detected by either test in Wellfield 4A. The M Sand inside of Wellfield 4A has a low transmissivity compared to the Wellfield 4 values, except near the northwestern boundary of Wellfield 4A where the transmissivity increases toward the higher Wellfield 4 value.

An average transmissivity of 160 gal/day/ft for the M Sand is thought to be representative of the majority of Wellfield 4A. A storage coefficient of 3.5E-05 and a hydraulic conductivity of 0.84 ft/day (0.26 Darcy) are representative of the M Sand aquifer in Wellfield 4A.

K.1.2 SITE LOCATION

Rio Algom Mining Corp.'s Smith Ranch Wellfield 4A is located in the southern Powder River Basin in Section 35, Township 36N, Range 74W and Section 2,

Township 35N, Range 74W in Converse County, Wyoming. The project is about 30 miles north of Douglas and 20 miles northeast of Glenrock. Figure K.2-1 shows the location of Wellfield 4A and shows the location of the wells used in these pump tests. Wellfield 4A will be connected through a pipeline to only the Central Processing Plant.

K.1.3 TEST OBJECTIVES

The objectives of the Wellfield 4A multi-well pump tests were to 1) demonstrate communication between the area to be mined (production area) and the surrounding monitoring ring; 2) determine the degree of hydrologic communication between the production zone and the overlying (O Sand) and underlying (K Sand) aquifers; 3) determine the presence of hydrologic boundaries; and 4) determine hydrologic properties of the production zone aquifer. Three day and four day (pumping) multi-well pump tests were conducted to obtain these objectives.

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K.2.0 GEOLOGIC CONDITIONS AND WELL COMPLETIONS

K.2.1 GEOLOGIC CONDITIONS

The well locations used in the Wellfield 4A pump tests are shown in blue on Figure K.2-1. Figure K.2-2 portrays the Wellfield 4A cross-section index map. This map depicts locations of the generalized cross-sections that portray the geologic conditions of the M Sand in the Fort Union formation. The M Sand is a braided stream deposit as thick as 125 ft. and as thin as 55 ft. that averages 81 ft. in thickness in Wellfield 4A.

Depending on locations across the well field, the entire M Sand interval may be divided into three separate segments, due to interbedded shale lenses. These shale lenses range from 5 to 46 ft. thick and isolate mineralization within the middle segment of the M Sand that makes it respond as a separate aquifer in Wellfield 4A. The shale between the upper and middle M Sand segments is present throughout this area and functions as an aquitard across Wellfield 4A. Therefore, only the middle segment of the entire M Sand sequence depicted on the cross section is used in the multi-well tests because this is the only portion of the M Sand where production recovery and injection wells will be completed. The three separate M Sand segments do not coalesce into a single homogeneous sand package as seen to the west in Wellfield 4. However, the upper and lower segments of the M Sand are not continuous throughout Wellfield 4A, as seen on Figures K.2-9A, B and C. The lower M Sand segment is shaled out on the southeast end of the Wellfield 4A in the region of logs 309 and MP428 (Figure K.2-9C). The upper M Sand segment is shaled out from the western side of Wellfield 4A eastward to log 993 (Figure K.2-9C) where the upper part of the M Sand segment is present.

Overlying the M Sand is the massive and ubiquitous O Sand aquifer that averages 298 ft. thick in Wellfield 4A. The underlying aquifer is the K Sand. Insufficient, penetrating data is available to estimate the average thickness of the K Sand. The N Shale aquitard separates the M Sand from the O Sand while the L Shale aquitard separates the M Sand from the K Sand. The N Shale thickness ranges from 4 ft. to 67 ft. and averages 31 feet across Wellfield 4A. Both multi-well pump tests indicated no hydrologic communication between the M and O Sands. The L Shale thickness ranges from 24 ft. to 97 ft. thick, averaging 41 ft. and, based on geologic information, is continuous across the well field. These two multi-well pump tests show that no hydrologic communication exists between the M and K Sands in Wellfield 4A. Figures K.2-10 through Figure K.2-13 are isopach maps that illustrate the thickness of these sand and shale units.

Seven generalized cross-sections were constructed to illustrate the geology of Wellfield 4A. Figure K.2-3 depicts the exterior monitor wells looking clockwise from the inside the well field outward. This section illustrates the areal extent of thickness changes in the M Sand throughout Wellfield 4A. The thickness of the M Sand varies due to the presence or absence of the lower and upper M Sand. The greatest thickness of the M Sand is toward the southeastern portion of the well field in the region of M449 where the lower, middle and upper sands are present. The N and L Shales are competent aquitards in all exterior monitor wells.

Cross-section A-A' (Figure K.2-4) is a northeast-southwest section looking southeast. The N and L Shales are competent and continuous throughout this section. The middle and lower M Sand is present in this section but the upper M Sand is missing. The top of the K Sand is relatively constant throughout the area.

Cross-section B-B′ (Figure K.2-5) is a northeast-southwest section looking southeast. The thickness of the M Sand is relatively constant. The N and L Shales are competent and continuous throughout this section while the top of the K is present only in log MD414.

Cross-section C-C′ (Figure K.2-6) is a northeast-southwest section looking southeast. The thickness of the total M Sand is thin on the north side relative to the area beginning at log 1150 where it thickens due to the presence of the upper M Sand. The N Shale remains competent throughout the area but thins on the south due to the presence of the upper M Sand. The top of the K Sand is seen in two of the logs illustrating a good, competent L Shale aquitard.

Cross-section D-D′ (Figure K.2-7) is a northeast-southwest section looking southeast. The thickness of the total M Sand is thicker on the north due to the presence of all three segments of the M Sand and thins to the south in the region of MD416 where the lower M Sand segment shales out. The N Shale is competent throughout the area. The top of the K Sand is projected in several of the logs illustrating a good, competent L Shale aquitard.

Cross-section E-E′ (Figure K.2-8) is a northeast-southwest section looking southeast. The total thickness of the M Sand is thicker on the north due to the presence of all three segments of the M Sand and thins to the south in the region of log 354 where the lower M Sand segment shales out. The N Shale is competent and continuous throughout the area. The top of the K Sand is projected in several of the logs illustrating a good, competent L Shale aquitard.

Cross-sections F1-F4 (Figures K.2-9A, K.2-9B and K.2-9C) are northwest-southeast sections through the middle of the well field looking northeast. This section illustrates the variable thickness of the entire M Sand. The N Shale is a competent

aquitard with an average thickness of 31 ft. throughout the well field. The N Shale thins slightly on the southeast end of the well field starting at log 993 where the upper M Sand is present. Here, the aquitard is still consistent across this portion of the well field. This is supported by both the presence of competent N Shale in the well logs and the pump test data that demonstrates the absence of any drawdown in the overlying O Sand. As seen in cross section F3-F4 (Figure K.2-9C), the shale between the upper and middle M Sand members coalesces into the N Shale in the vicinity of MP425 and log 993, providing a continual aquitard between the middle M and the O Sands. The upper M Sand, when present, is generally separated from the middle M Sand by an aquitard ranging from 11 to 46 ft. thick and averages 27 ft. The lack of mineralization in the upper M Sand indicates that this shale is continuous in the Wellfield 4A area. The entire M Sand package can be seen in logs 993 and 309 (Figure K.2-9C).

K.2.2 WELL COMPLETIONS

K.2.2.1 PUMPING WELL COMPLETIONS

PW4-4

PW4-4, the pumping well on the southeastern portion of Wellfield 4A, intersects a complex section of the M Sand (Figure K.2-9C). At this location there are two interbedded shale lenses (55 ft. of shale overlies the middle M Sand segment, 65 ft. of shale underlies the middle M Sand segment), that separates the M Sand into the upper and middle segments. The lower M Sand segment has been shaled out in this area. The upper M Sand segment is barren of mineralization and the production interval is limited to the middle M Sand segment. In order to meet the requirements outlined in Section 5.1.2 of the Permit to Mine #633, the production zone monitor wells in this area are completed through the middle segment of the M Sand only. To maintain

compliance with the permit requirements, the completion interval of PW4-4 corresponds directly to the adjacent production zone monitor wells, and was not completed through the upper segment of the M Sand.

PW4-3

The stratigraphy intersected by pump well PW4-3 (Figure K.2-9B) in the western portion of Wellfield 4A consists of the middle and lower segments of the M Sand with the upper M Sand segment shaled out in this region. PW4-3 is only completed in the middle M Sand segment that contains mineralization and does not include the barren lower M Sand segment. The N Shale aquitard is 45 feet thick at well PW4-3. The lower aquitard, or L Shale averages a thickness of 31 ft.

K.2.2.2 PRODUCTION ZONE WELLS AND PERIMETER MONITOR WELLS

The perimeter monitor ring wells (M) consist of twenty-seven M Sand wells that were measured to demonstrate communication with the production zone. Fifteen wells, M439 through M453, were measured during the PW4-4 test. Fourteen wells, M401, M402, M434 through M439 and M453 through M458, were measured during the PW4-3 pump test. Wells M439 and M453 were measured during both tests. Table K.2-1 presents the well completion data information for all monitor wells in Wellfield 4A. In addition, the completion intervals are illustrated on the monitor ring cross-section.

Twelve production zone (M Sand) monitor wells were used to define the aquifer properties. These wells are completed in the mineralized portion of the middle M Sand segment and are designated as "MP" wells. Seven wells, MP425 through MP431, were measured during the first pump test. Seven wells, M401, MP422 through MP426 and MP432 were measured during the second pump test. Wells MP425 and MP426 were measured during both pump tests for continuity and overlap between test areas. Many

of the MP wells were used in the construction of the generalized cross sections. The cross sections illustrate the completion of the MP wells throughout the production zone.

K.2.2.3 ADJACENT AQUIFER MONITOR WELLS

Six overlying monitor wells (MS) and six underlying monitor wells (MD) were installed throughout Wellfield 4A. The MS/MD wells were drilled in pairs in every case in Wellfield 4A so that MS415 corresponds to MD415, respectively. Figure K.2-1 illustrates the location of all monitor wells monitored during the pump tests. Specific wells MS/MD415 through MS/MD417 were monitored during the first pump test. During the second pump test, wells MS/MD412 through MS/MD415 were monitored. For continuity and overlap between both test areas, wells MS/MD415 were monitored in both pump tests.

K.2.3 GEOLOGY OF THE WELLFIELD 4A AQUITARDS

K.2.3.1 GEOLOGY OF THE N SHALE AQUITARD

The N Shale was deposited laterally away from the main channel system as a distal overbank facies resulting in an aquitard of regional extent that separates the overlying O Sand from the M Sand system. The N Shale thickness ranges between 4 ft. to 67 ft. and averages 31 ft. in thickness throughout the well field.

The thickness of the N Shale depends on the presence of the upper M Sand segment, as illustrated in all cross-sections and the N Shale and M Sand isopach maps. When the upper M Sand segment is present, the N Shale thickness ranges from 4 ft. to 25 ft., while averaging 13 ft. in Wellfield 4A. In areas where the upper M Sand segment is shaled out, an interbedded shale in the M Sand coalesces into the N Shale, that generates a thicker aquitard ranging from 28 ft. to 67 ft. with an average thickness

of 47 ft. in Wellfield 4A. The integrity of the N Shale to act as an aquitard between the M and O Sand packages is very good. Geologic logs and the results from both multi-well pump tests support this conclusion.

K.2.3.2 GEOLOGY OF THE L SHALE AQUITARD

The L Shale was deposited laterally away from the main channel system as a distal overbank facies resulting in an aquitard of regional extent that separates the M Sand system from the underlying K Sand. The L Shale ranges from 24 to 97 ft. thick and averages 41 ft. in Wellfield 4A.

K.2.3.3 DEPOSITIONAL HISTORY

The primary host for mineral deposition in the Smith Ranch region is the Paleocene Fort Union formation. The Fort Union formation is a braided fluvial, depositional system composed of interbedded sandstones and shales. The source of sand was from regional uplift and erosion of bordering mountains to the south and west. This erosion from the highlands formed a large alluvial plain that extended out into the Powder River Basin. These braided stream systems took shifting courses off the highlands and are reflected as separate pulses of sand deposition. The interbedded shales formed as distal overbank facies that graded laterally away from the major stream sediment loads dispensed off the areas of regional uplift.

The production in Wellfield 4A is in the M Sand, which is a specific, braided, fluvial sandstone unit. The M Sand is irregular with variable sand thickness, grain size, and shale content, that is characteristic of many production host sand units in the South Powder River Basin. The L and N Shales are ubiquitous facies within the Smith Ranch

Permit area. They were most likely deposited laterally away from major braided channel systems as distal overbank facies.

As stated previously, the provenance for sand deposition is from the south and west. Braided river systems flowing off the adjacent regional highlands carried large volumes of sediment toward the northwest-southeast trending axis of the Powder River Basin. Near the headwaters, the fluvial system is able to carry more sediment load due to the increased energy profile. As the braided system extends further from the headwaters, the energy of the fluvial system is reduced due to the decreased stream gradient caused by decreased elevation changes. Fluvial erosion is more active proximal to the headwaters with elevated energy profiles thus creating an elevation gradient that tapers away from the headwaters that results in a reduction of sediment transport over distance from the source area. Evidence for this gradual change in elevation may be observed on the elevation contour maps for the tops of the individual sand and shale units (Figures K.2-14 through K.2-18). These maps suggest a gentle elevation climb approaching the headwaters toward the south and west.

TABLE K.2-1. SUMMARY OF WELL COMPLETION INFORMATION FOR WELLFIELD 4A.

WELL NO.	EAST COORD.	NORTH COORD.	DRILLED DEPTH (FT)	CASING DEPTH (FT)	SCREENED INTERVAL (FT)	MEASURING POINT (MP) ELEVATION (FT-MSL)	MEASURING POINT (MP) ABOVE LSD (FT)	DRIFT DISTANCE	DRIFT AZ
					M SAND AQUIFER				
PW4-3	355491.5	867005.6	779.7	749	751-777	5411.8	0.76	4.6	183.8
PW4-4	357284.6	865229.7	760.3	725	727-747	5382.3	1.28	3.8	288.2
M401	354371.9	867581.8	841.0	757	759-782	5439.7	0.67	1.9	352.0
M402	354511.4	868038.9	837.0	764	766-789	5444.3	0.91	10.4	257.0
M434	354092.6	867226.0	844.0	780	782-811	5458.5	0.94	1.8	10.1
M435	354435.6	866982.8	853.0	795	797-825	5464.0	1.99	12.1	160.0
M436	354886.1	866798.0	823.0	767	769-791	5432.8	0.82	5.9	77.3
M437	355223.7	866469.5	813.0	763	765-788	5424.0	1.04	14.0	223.0
M438	355567.6	866147.5	795.0	757	759-781	5417.1	1.12	6.0	160.0
M439	355808.0	865737.2	781.0	746	748-765	5403.2	1.15	3.6	269.0
M440	356171.4	865431.1	778.0	728	730-751	5391.9	0.91	8.3	223.8
M441	356550.8	865148.5	773.0	725	727-748	5385.2	1.24	4.5	145.0
M442	356929.9	864863.3	772.0	737	739-752	5382.6	1.60	0.8	263.0
M443	357123.8	864430.5	791.0	733	735-750	5378.3	0.29	17.0	232.0
M444	357319.8	863997.1	791.0	745	747-762	5393.1	1.12	0.5	78.4
M445	357760.2	863824.6	777.0	745	747-761	5390.3	1.32	8.3	221.5
M446	358170.7	864055.6	770.2	716	718-733	5368.0	2.04	6.2	165.4
M447	358413.0	864374.8	783.0	719	721-737	5375.9	0.93	14.7	218.0
M448	358482.9	864870.3	800.0	755	757-773	5412.9	0.87	17.2	259.0
M449	358167.9	865259.5	831.0	752	754-770	5412.7	0.74	1.9	295.0
M450	357803.4	865601.3	793.2	753	755-763	5407.8	0.83	6.8	170.1
M451	357350.5	865800.6	814.0	773	775-791	5435.0	0.97	16.5	217.0
M452	357169.4	866255.8	832.0	774	776-796	5438.4	0.37	20.1	303.0
M453	356847.2	866570.3	800.0	749	751-769	5410.5	1.51	6.7	309.0
M454	356454.5	866825.6	794.0	745	747-765	5408.1	1.10	16.1	256.0
M455A	356141.9	867156.1	797.0	751	753-778	5409.8	0.75	3.9	5.8
M456	355766.1	867485.5	820.0	777	779-794	5430.0	0.98	13.0	244.0
M457	355431.7	867811.1	815.1	763	765-779	5422.6	0.63	11.9	208.0
M458	354975.0	867959.7	821.2	752	754-782	5426.0	0.97	6.2	60.1
MP422	355198.7	867355.8	780.7	754	756-775	5416.2	1.23	8.3	288.7
MP423	355715.6	866876.8	797.1	754	756-774	5409.3	1.25	10.7	213.4
MP424	356071.4	866494.5	779.1	746	748-764	5402.6	0.63	8.7	272.6
MP425	356631.0	865868.3	794.8	760	762-775	5419.0	1.96	18.0	176.7
MP426	356461.4	866156.9	775.3	742	744-763	5405.0	1.04	7.2	5.0
MP427A	356876.0	865558.7	780.8	741	743-756	5397.9	0.87	11.7	230.8
MP428	357207.0	865288.2	766.0	735	737-748	5385.7	1.65	6.7	156.0
MP429	357546.2	865056.8	777.0	730	732-742	5382.1	1.10	15.2	144.9
MP430	357698.0	864936.5	781.3	726	728-744	5381.3	0.29	2.5	307.5
MP431	357707.7	864660.3	757.0	715	717-735	5371.0	1.03	3.9	215.3
MP432	354891.3	867448.4	805.0	749	751-772	5420.5	0.48	0.7	346.6

TABLE K.2-1. SUMMARY OF WELL COMPLETION INFORMATION FOR WELLFIELD 4A. (cont'd.)

WELL NO.	EAST COORD.	NORTH COORD.	DRILLED DEPTH (FT)	CASING DEPTH (FT)	SCREENED INTERVAL (FT)	MEASURING POINT (MP) ELEVATION (FT-MSL)	MEASURING POINT (MP) ABOVE LSD (FT)	DRIFT DISTANCE	DRIFT AZ
					K SAND AQUIFER				
MD412	354558.4	867531.1	941.0	871	873-892	5432.1	0.07	11.4	109.5
MD413	355357.6	867162.5	896.0	853	855-875	5413.9	0.85	8.6	213.0
MD414	355956.8	866546.4	904.2	843	845-865	5404.2	0.17	9.3	212.7
MD415	356656.5	866009.8	915.0	864	866-886	5421.7	1.74	15.1	183.0
MD416	357259.2	865232.7	902.0	818	820-840	5381.5	0.53	15.4	264.1
MD417	357876.8	864575.1	901.1	828	830-850	5368.6	0.63	10.8	209.8
					Q SAND AQUIFER				
MS412	354549.4	867531.4	721.0	688	690-709	5432.5	0.49	8.5	151.2
MS413	355364.1	867157.9	704.1	673	675-689	5414.4	1.37	8.8	238.3
MS414	355950.1	866551.9	704.2	659	661-681	5404.7	0.69	7.0	216.5
MS415	356655.0	866019.4	716.4	661	663-683	5421.6	1.64	7.0	215.3
MS416	357249.4	865234.6	675.0	634	636-656	5381.5	0.54	6.0	150.8
MS417	357869.0	864576.9	660.0	619	621-637	5368.8	0.77	5.5	260.3

TABLE K.2-2. WELLFIELD 4A SAND THICKNESS AND COMPLETION INTERVALS.

MONITOR WELL	SAND THICKNESS (FT)	COMPLETION INTERVAL	
		TOP	BOTTOM
M SAND AQUIFER			
PW4-3	NFP	751	777
PW4-4	75	727	747
M401	79	759	782
M402	67	766	789
M434	NFP	782	811
M435	NFP	797	825
M436	NFP	769	791
M437	NFP	765	788
M438	NFP	759	781
M439	NFP	748	765
M440	NFP	730	751
M441	78	727	748
M442	76	739	752
M443	78	735	750
M444	80	747	762
M445	78	747	761
M446	77	718	733
M447	76	721	737
M448	NFP	757	773
M449	110	754	770
M450	NFP	755	763
M451	NFP	775	791
M452	55	776	796
M453	NFP	751	769
M454	NFP	747	765
M455A	NFP	753	778
M456	NFP	779	794
M457	NFP	765	779
M458	NFP	754	782
MP422	NFP	756	775
MP423	NFP	756	774
MP424	NFP	748	764

TABLE K.2-2. WELLFIELD 4A SAND THICKNESS AND COMPLETION INTERVALS. (cont'd).

MONITOR WELL	SAND THICKNESS (FT)	COMPLETION INTERVAL	
		TOP	BOTTOM
M SAND AQUIFER (cont'd.)			
MP425	NFP	762	775
MP426	NFP	744	763
MP427A	NFP	743	756
MP428	67	737	748
MP429	77	732	742
MP430	85	728	744
MP431	68	717	735
MP432	NFP	751	772
K SAND AQUIFER			
MD412	NFP	873	892
MD413	NFP	855	875
MD414	NFP	845	865
MD415	NFP	866	886
MD416	NFP	820	840
MD417	NFP	830	850
O SAND AQUIFER			
MS412	306	690	709
MS413	298	675	689
MS414	301	661	681
MS415	288	663	683
MS416	307	636	656
MS417	308	621	637

NOTE: NFP = Not fully penetrating
FT = Feet

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FIG. 2.1.4
SMITH RANCH PROJECT
WELLFIELD 4 ANNEX
PLAN MAP

WITHIN THIS PACKAGE...OR, BY SEARCHING USING THE DOCUMENT/REPORT

FIG. 2.1.4

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FIG. K.2-1
SMITH RANCH PROJECT
WELLFIELD 4 ANNEX
PLAN MAP

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FIG. K.2-1

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FIG. 2.10.4
SMITH RANCH PROJECT
WELLFIELD 4 ANNEX
BASELINE GAMMA SURVEY

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FIG. 2.10.4

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FIG. D-5.22
SMITH RANCH PROJECT
WELLFIELD 4 ANNEX
CROSS SECTION INDEX MAP

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FIG. D-5.22

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FIG. K.2-2
SMITH RANCH PROJECT
WELLFIELD 4 ANNEX
CROSS SECTION INDEX MAP

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FIG. K.2-2

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FIG. K.2-3, FIG. D-5.23

SMITH RANCH PROJECT WELLFIELD 4 ANNEX GEOLOGIC CROSS SECTION MONITOR WELL RING LOOKING OUTWARD CLOCKWISE

WITHIN THIS PACKAGE...OR, BY SEARCHING USING THE DOCUMENT/REPORT FIG. K.2-3, FIG. D-5.23

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D-6

THIS PAGE IS AN OVERSIZED DRAWING OR FIGURE,

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FIG. K.2-5, FIG. D-5.25 SMITH RANCH PROJECT WELLFIELD 4 ANNEX GEOLOGIC CROSS SECTION B - B' LOOKING SOUTHEAST

WITHIN THIS PACKAGE...OR, BY SEARCHING USING THE DOCUMENT/REPORT

FIG. K.2-5, FIG. D-5.25

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FIG. K.2-6, FIG. D-5.26 SMITH RANCH PROJECT WELLFIELD 4 ANNEX GEOLOGIC CROSS SECTION C - C' LOOKING SOUTHEAST

WITHIN THIS PACKAGE...OR, BY SEARCHING USING THE DOCUMENT/REPORT FIG. K.2-6, FIG. D-5.26

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FIG. K.2-7, FIG. D-5.27
SMITH RANCH PROJECT
WELLFIELD 4 ANNEX
GEOLOGIC CROSS SECTION
D - D' LOOKING SOUTHEAST

WITHIN THIS PACKAGE...OR, BY SEARCHING USING THE DOCUMENT/REPORT

FIG. K.2-7, FIG. D-5.27

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THIS PAGE IS AN OVERSIZED DRAWING OR FIGURE,

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FIG. K.2-9A, FIG. D-5.29

SMITH RANCH PROJECT WELLFIELD 4 ANNEX GEOLOGIC CROSS SECTION F1 - F2 (NORTHWEST) LOOKING NORTHEAST

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FIG. K.2-9A, FIG. D-5.29

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FIG. K.2 - 9B, FIG. D-5.30 SMITH RANCH PROJECT WELLFIELD 4 ANNEX GEOLOGIC CROSS SECTION F2 - F3 (MIDDLE) LOOKING NORTHEAST

WITHIN THIS PACKAGE...OR, BY SEARCHING USING THE DOCUMENT/REPORT FIG. K.2 - 9B, FIG. D-5.30

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FIG. K.2 - 9C, FIG. D-5.31 SMITH RANCH PROJECT WELLFIELD 4 ANNEX GEOLOGIC CROSS SECTION F3 - F4 (SOUTHEAST) LOOKING NORTHEAST

WITHIN THIS PACKAGE...OR, BY SEARCHING USING THE DOCUMENT/REPORT

FIG. K.2 - 9C, FIG. D-5.31

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FIG. K.2 - 10
SMITH RANCH PROJECT
WELLFIELD 4 ANNEX M
SAND ISOPACH

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FIG. K.2 - 10

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FIG. K.2 - 11
SMITH RANCH PROJECT
WELLFIELD 4 ANNEX
N SHALE ISOPACH

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FIG. K.2 - 11

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FIG. K.2 - 12
SMITH RANCH PROJECT
WELLFIELD 4 ANNEX
L SHALE ISOPACH

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FIG. K.2 - 12

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FIG. K.2 - 13
SMITH RANCH PROJECT
WELLFIELD 4 ANNEX
O SAND ISOPACH

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FIG. K.2 - 13

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FIG. K.2 - 14

SMITH RANCH PROJECT WELLFIELD 4 ANNEX TOP OF O SAND

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FIG. K.2 - 14

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FIG. K.2 - 15

SMITH RANCH PROJECT

WELLFIELD 4 ANNEX

TOP OF N SHALE

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FIG. K.2 - 15

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FIG. K.2 - 16
SMITH RANCH PROJECT
WELLFIELD 4 ANNEX
TOP OF M SAND

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FIG. K.2 - 16

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FIG. K.2 - 17

SMITH RANCH PROJECT

WELLFIELD 4 ANNEX

TOP OF L SHALE

WITHIN THIS PACKAGE...OR, BY SEARCHING USING THE DOCUMENT/REPORT

FIG. K.2 - 17

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FIG. K.2 - 18

SMITH RANCH PROJECT

WELLFIELD 4 ANNEX

TOP OF K SAND

WITHIN THIS PACKAGE...OR, BY SEARCHING USING THE DOCUMENT/REPORT

FIG. K.2 - 18

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PAPER VERSIONS WERE SENT TO THE NRC FILE CENTER.

Rio Algom Mining Corp.

Smith Ranch Project

Wellfield 4 and 4A

Table L-1.1

	Date and Time	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NH4	NO3+NO2	F	SiO2	TDS	SC@25	Alkalinity	pH	As	B	Cd	Cr	Fe	Mn	Mo	Se	V	Zn	Unat	Ra226	Ra228	Rn222
Well #	Sampled	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	umho/cm	mg/L	std.units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	pCi/L
1MP401	11/10/1998@1113	60.0	17.0	22.0	7.4	<1.0	187	140	3.0	0.11	<0.10	0.54	15.0	349	541	154	7.75	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0151	120	<1.0	N/R
2MP401	11/24/1998@0723	N/R	N/R	N/R	N/R	N/R	N/R	139	2.7	N/R	N/R	N/R	N/R	363	555	157	7.65	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0146	113	5.2	90700
3MP401	12/8/1998@0850	N/R	N/R	N/R	N/R	N/R	N/R	143	3.1	N/R	N/R	N/R	N/R	408	545	157	7.19	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0116	122	<1.0	93200
4MP401	12/30/1998@1130	62.4	18.7	22.5	7.1	<1.0	190	139	2.1	0.07	<0.10	0.5	15.3	387	546	156	7.75	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0139	117	<1.0	N/R
1MP402A	11/10/1998@0804	61.0	18.5	22.0	7.1	<1.0	192	148	4.0	<0.05	<0.10	0.58	15.0	361	551	158	7.48	0.002	<0.10	<0.005	<0.05	0.06	<0.01	<0.10	<0.001	<0.10	<0.01	0.0207	901	5.2	N/R
2MP402A	11/23/1998@1540	N/R	N/R	N/R	N/R	N/R	N/R	137	2.7	N/R	N/R	N/R	N/R	412	551	159	7.61	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0232	935	6.5	870000
3MP402A	12/8/1998@0834	N/R	N/R	N/R	N/R	N/R	N/R	98	3.1	N/R	N/R	N/R	N/R	396	546	158	7.04	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0138	959	<1.0	704000
4MP402A	12/30/1998@1117	63.3	18.9	22.7	7.1	<1.0	193	136	2.8	0.11	<0.10	0.54	15.4	395	551	158	7.52	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0182	1012	3.5	N/R
1MP403A	11/10/1998@0909	61.0	17.1	21.8	7.8	<1.0	188	130	5.0	<0.05	<0.10	0.56	15.0	355	545	155	7.71	0.005	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	.216(1)	773	5.0	N/R
2MP403A	11/23/1998@1451	N/R	N/R	N/R	N/R	N/R	N/R	139	3.1	N/R	N/R	N/R	N/R	419	545	157	7.65	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	.215(1)	818	4.7	549000
3MP403A	12/8/1998@0934	N/R	N/R	N/R	N/R	N/R	N/R	145	3.8	N/R	N/R	N/R	N/R	407	541	156	7.21	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	.188(1)	878	<1.0	501000
4MP403A	12/30/1998@1031	61.5	18.7	22.2	7.5	<1.0	190	133	4.3	0.07	<0.10	0.51	15.2	401	546	156	7.69	0.004	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	.19(1)	856	2.9	N/R
1MP404	11/12/1998@1341	55.0	17.0	23.0	8.0	<1.0	166(1)	127	5.0	<0.05	<0.10	0.47	16.0	322	490	137	7.78	0.003	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.062	394	4.7	N/R
2MP404	11/30/1998@1548	N/R	N/R	N/R	N/R	N/R	N/R	128	3.4	N/R	N/R	N/R	N/R	330	495	133a[1]	7.75	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.068	394	3.3	463,000
3MP404	12/15/1998@0731	N/R	N/R	N/R	N/R	N/R	N/R	130	3.4	N/R	N/R	N/R	N/R	368	492	137	7.61	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0542	342	2.2	392000
4MP404	1/5/1999@1534	51.8	16.5	22.5	7.6	<1.0	157(1)	138	4.4	0.11	<0.10	0.51	14.1	331	475	129a[1]	7.83	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0516	396	3.2	N/R
1MP405	11/12/1998@1224	67.0	16.0	23.0	8.0	<1.0	189	122	4.0	0.08	<0.10	0.53	16.0	365	512	155	7.68	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0195	217	1.9	N/R
2MP405	11/30/1998@1445	N/R	N/R	N/R	N/R	N/R	N/R	121	3.8	N/R	N/R	N/R	N/R	334	523	155	7.54	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.017	234	2.9	181000
3MP405	12/15/1998@0720	N/R	N/R	N/R	N/R	N/R	N/R	127	3.1	N/R	N/R	N/R	N/R	384	516	158	7.43	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0156	231	2.0	184000
4MP405	1/5/1999@1523	58.0	18.3	22.7	7.3	<1.0	191	133	2.9	0.08	<0.10	0.51	14.8	344	506	157	7.76	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.015	249	3.8	N/R
1MP406	11/10/1998@1335	51.0	13.0	22.0	7.0	<1.0	157(1)	117	5.0	0.07	<0.10	0.54	14.0	321	477	129a[1]	7.73	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0301	507	5.1	N/R
2MP406	11/23/1998@1302	N/R	N/R	N/R	N/R	N/R	N/R	124	3.1	N/R	N/R	N/R	N/R	375	481	134	7.68	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0267	502	<1.0	443000
3MP406	12/7/1998@1539	N/R	N/R	N/R	N/R	N/R	N/R	117	3.8	N/R	N/R	N/R	N/R	375	493	146	7.58	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0263	637	2.4	396000
4MP406	12/30/1998@0849	59.4	15.9	22.6	7.4	<1.0	184	115	1.6	0.11	<0.10	0.51	15.5	378	511	152	7.51	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0196	569	2.2	N/R
1MP407	11/12/1998@1448	60.0	15.0	23.0	8.0	<1.0	192	104	6.0	<0.05	<0.10	0.51	16.0	328	497	157	7.80	0.005	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	.124(1)	755	8.9	N/R
2MP407	11/30/1998@1525	N/R	N/R	N/R	N/R	N/R	N/R	106	5.5	N/R	N/R	N/R	N/R	324	505	156	7.60	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	.122(1)	704	5.9	882000
3MP407	12/15/1998@0742	N/R	N/R	N/R	N/R	N/R	N/R	117	3.4	N/R	N/R	N/R	N/R	353	499	157	7.40	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.079	669	4.7	975000
4MP407	1/6/1999@0735	56.3	17.4	22.8	2.5(1)	<1.0	190	109	2.5	0.08	<0.10	0.51	14.9	355	499	156	7.50	0.003	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.066	726	3.6	N/R
1MP408	11/12/1998@1544	58.0	15.0	23.0	8.0	<1.0	183	116	4.0	0.07	<0.10	0.52	15.0	322	491	151	7.77	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.029	165	3.2	N/R
2MP408	11/30/1998@1611	N/R	N/R	N/R	N/R	N/R	N/R	107	3.8	N/R	N/R	N/R	N/R	314	499	153	7.58	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.026	160	5.4	217000
3MP408	12/15/1998@1054	N/R	N/R	N/R	N/R	N/R	N/R	107	2.7	N/R	N/R	N/R	N/R	350	491	157	7.61	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.026	163	1.8	192000
4MP408	1/6/1999@0826	57.5	16.8	22.5	7.4	<1.0	191	110	2.5	0.09	<0.10	0.51	15.0	338	501	157	7.55	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0212	166	2.1	N/R
1MP409	11/9/1998@1312	51.0	14.0	22.0	8.0	<1.0	185	108	3.0	0.10	<0.10	0.57	14.5	302	472	152	7.69	0.003	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.106	615	5.2	N/R
2MP409	11/23/1998@1239	N/R	N/R	N/R	N/R	N/R	N/R	99.4	3.4	N/R	N/R	N/R	N/R	404	477	156	7.58	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.093	601	8.2	821000
3MP409	12/7/1998@1334	N/R	N/R	N/R	N/R	N/R	N/R	99	3.4	N/R	N/R	N/R	N/R	346	472	155	7.48	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0783	734	2.3	692000
4MP409	12/30/1998@0806	52.9	15.8	22.0	7.2	<1.0	190	99.7	3.1	0.18	<0.10	0.52	15.4	260	480	156	7.41	0.003	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0573	692	2.0	N/R
1MP410	11/12/1998@1532	57.0	16.0	23.0	7.0	<1.0	194	100	9.0(1)	<0.05	<0.10	0.56	16.0	314	491	159	7.59	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.01	31	2.2	N/R
2MP410	12/1/1998@0744	N/R	N/R	N/R	N/R	N/R	N/R	97.7	5.8	N/R	N/R	N/R	N/R	309	498	159	7.57	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0098	34	<1.0	111000
3MP410	12/15/1998@0754	N/R	N/R	N/R	N/R	N/R	N/R	101	3.8	N/R	N/R	N/R	N/R	354	484	158	7.23	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0099	42	1.3	89800
4MP410	1/6/1999@0748	55.0	16.2	22.7	7.0	<1.0	193	107	3.5	0.08	<0.10	0.55	14.8	296	488	158	7.41	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0095	42	2.3	N/R
1MP411	11/12/1998@1520	52.0	16.0	23.0	8.0	<1.0	186	103	5.0	0.06	<0.10	0.53	15.0	303	471	153	7.60	<0.001	<0.10	<0.005	<0.05	0.07	<0.01	<0.10	<0.001	<0.10	<0.01	0.0156	51	2.7	N/R
2MP411	12/1/1998@0756	N/R	N/R	N/R	N/R	N/R	N/R	96.5	4.1	N/R	N/R	N/R	N/R	301	481	155	7.60	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.013	50	1.5	69600
3MP411	12/15/1998@0806	N/R	N/R	N/R	N/R	N/R	N/R	98.1	3.1	N/R	N/R	N/R	N/R	327	473	154	7.30	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0119	54	1.9	62300
4MP411	1/6/1999@0800	52.4	15.8	23.1	7.7	<1.0	189	102	3.7	0.10	<0.10	0.52	14.6	304	478	156	7.50	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.01	52	4.3	N/R
1MP412A	11/10/1998@1400	50.0	15.0	22.0	7.0	<1.0	192	98	6.0	0.06	<0.10	0.58	15.0	321	474	158	7.79	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0287	444	1.7	N/R
2MP412A	11/24/1998@0703	N/R	N/R	N/R	N/R	N/R	N/R	95	4.5	N/R	N/R	N/R	N/R	305	484	159	7.77	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.032	402	4.3	1010000
3MP412A	12/8/1998@0814	N/R	N/R	N/R	N/R	N/R	N/R	142	3.8	N/R	N/R	N/R	N/R	334	471	156	7.32	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0271	482	<1.0	814000
4MP412A	12/30/1998@1046	52.1	15.4	22.1	7.6	<1.0	192	93.8	3.1	0.07	<0.10	0.53	15.4	342	475	158	7.80	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.033	458	2.5	N/R
1MP413	11/13/1998@0709	55.0	16.0	23.0	8.0	<1.0	193	99	5.0	0.07	<0.10	0.55	16.0	307	489	158	7.60	0.005	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0301	359	3.4	N/R
2MP413	12/1/1998@0812	N/R	N/R	N/R	N/R	N/R	N/R	94.3	3.4	N/R	N/R	N/R	N/R	301	494	159	7.52	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.023	348	4.8	546000
3MP413	12/15/1998@1017	N/R	N/R	N/R	N/R	N/R	N/R	97.2	3.1	N/R	N/R	N/R	N/R	335	478	159	7.50	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0272	315	4.2	399000
4MP413	1/6/1999@0813	54.3	16.1	23.0	7.2	<1.0	193	101	2.0	0.08	<0.10	0.53	15.1	318	480	159	7.45	0.003	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.019	358	2.8	N/R
1MP414	11/13/1998@0724	56.0	16.0	23.0	8.0	<1.0	189	97	6.0	0.06	<0.10	0.55	16.0	318	491	156	7.59	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0195	79	3.0	N/R
2MP414	12/1/1998@0824	N/R	N/R	N/R	N/R	N/R	N/R	98.6	4.5	N/R	N/R	N/R	N/R	333	503	157	7.57	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.018	81	2.4	188000
3MP414	12/15/1998@1041	N/R	N/R	N/R	N/R	N/R	N/R	105	3.1	N/R	N/R	N/R	N/R	337	481	156	7.50	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0194	89	4.3	215000
4MP414	1/6/1999@1016	54.0	15.6	23.3	7.6	<1.0	191	91	4.9	0.11	<0.10	0.53	14.9	311	485	157	7.52	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0155	66	2.0	N/R
1MP415	11/13/1998@0739	54.0	16.0	23.0	7.0	<1.0	193	91	5.0	<0.05	<0.10	0.55	16.0	299	478	159	7.59	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	.002(1)	<0.10	<0.01	0.0906	266	3.1	N/R
2MP415	12/1/1998@0837	N/R	N/R	N/R	N/R	N/R	N/R	92.5	4.5	N/R	N/R	N/R	N/R	288	484	157	7.54	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.073	268	3.4	748000
3MP415	12/15/1998@1107	N/R	N/R	N/R	N/R	N/R	N/R	97.5	3.4	N/R	N/R	N/R	N/R	324	471	158	7.50	.007(1)	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0724	270	4.6	382000
4MP415	1/6/1999@1042	52.9	15.6	23.0	7.3	<1.0	192	93.2	4.5	0.10	<0.10	0.53	14.5	310	477	158	7.48	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0685	271	4.3	N/R
1MP416	11/9/1998@0831	51.0	15.0	23.0	7.2	<1.0	192	100	3.8	0.08	<0.10	0.56	16.0	311	476	158	7.60	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.014	1199	7.6	N/R
2MP416	11/23/1998@0748	N/R	N/R	N/R	N/R	N/R	N/R	93.4	3.4	N/R	N/R	N/R	N/R	353	480	160	7.38	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0134	1130	6.9	1000000
3MP416	12/7/1998@0841	N/R	N/R	N/R	N/R	N/R	N/R	101	3.8	N/R	N/R	N/R	N/R	318	471	160	7.62	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0153	1078	7.4	898000

Rio Algom Mining Corp.
Smith Ranch Project
Wellfield 4 and 4A
Table L-1.1
MP Wells

Well #	Date and Time Sampled	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	CO3 mg/L	HCO3 mg/L	SO4 mg/L	Cl mg/L	NH4 mg/L	NO3+NO2 mg/L	F mg/L	SiO2 mg/L	TDS mg/L	SC@25 µmho/cm	Alkalinity mg/L	pH std.units	As mg/L	B mg/L	Cd mg/L	Cr mg/L	Fe mg/L	Mn mg/L	Mo mg/L	Se mg/L	V mg/L	Zn mg/L	Unat mg/L	Ra226 pCi/L	Ra228 pCi/L	Rn222 pCi/L
4MP416	2/29/1998@1640	52.9	15.4	23.1	7.0	<1.0	195	94.5	2.8	0.10	<0.10	0.54	16.0	333	477	160	7.37	0.003	<0.10	<0.005	<0.05	0.15(1)	<0.01	<0.10	<0.001	<0.10	<0.01	0.0158	1190	7.3	N/R
1MP417	1/9/1998@0813	48.0	14.0	23.0	7.0	<1.0	193	87	3.0	0.07	<0.10	0.54	15.0	283	449	158	7.60	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.047	481	3.2	N/R
2MP417	1/23/1998@0822	N/R	N/R	N/R	N/R	N/R	N/R	80.8	3.1	N/R	N/R	N/R	N/R	306	452	160	7.39	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0343	437	4.2	563000
3MP417	2/7/1998@0910	N/R	N/R	N/R	N/R	N/R	N/R	86.4	3.4	N/R	N/R	N/R	N/R	362	452	160	7.70	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0309	446	5.4	429000
4MP417	2/29/1998@1323	49.3	14.0	22.3	6.8	<1.0	195	76.8	2.5	0.23(1)	<0.10	0.50	15.7	257	449	160	7.38	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0368	459	3.1	N/R
1MP418	1/13/1998@0751	52.0	15.0	23.0	8.0	<1.0	195	83	6.0	0.06	<0.10	0.52	16.0	288	462	160	7.60	0.003	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.088	650	7.2	N/R
2MP418	2/1/1998@1013	N/R	N/R	N/R	N/R	N/R	N/R	82.2	4.1	N/R	N/R	N/R	N/R	263	468	160	7.63	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.099	730	6.8	459000
3MP418	2/15/1998@1320	N/R	N/R	N/R	N/R	N/R	N/R	84.6	3.4	N/R	N/R	N/R	N/R	318	457	159	7.50	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0664	683	5.1	707000
4MP418	1/6/1999@1030	50.4	14.4	22.9	7.3	<1.0	195	81.7	3.3	0.08	<0.10	0.50	14.6	292	457	160	7.54	0.003	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0701	627	2.8	N/R
1MP419	1/9/1998@0741	50.0	15.0	23.0	7.0	<1.0	193	88	3.6	0.10	<0.10	0.55	15.0	298	468	159	7.60	.006(1)	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0947	1386	6.5	N/R
2MP419	1/23/1998@0900	N/R	N/R	N/R	N/R	N/R	N/R	82.5	3.4	N/R	N/R	N/R	N/R	310	470	154	7.49	0.005	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.065	1338	11.1(1)	1730000(1)
3MP419	2/7/1998@0955	N/R	N/R	N/R	N/R	N/R	N/R	92.8	3.4	N/R	N/R	N/R	N/R	345	465	160	7.70	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0548	1370	2.7	161000
4MP419	2/29/1998@1256	51.9	15.0	22.2	6.9	<1.0	196	86.7	2.3	0.16	<0.10	0.51	15.9	301	466	161	7.33	0.005	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0647	1319	7.5	N/R
1MP420	1/9/1998@0909	52.0	15.0	23.0	7.0	<1.0	192	100	4.0	<0.05	<0.10	0.56	16.0	316	477	158	7.58	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0295	354	2.5	N/R
2MP420	1/23/1998@0951	N/R	N/R	N/R	N/R	N/R	N/R	94.8	3.4	N/R	N/R	N/R	N/R	333	480	161	7.40	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0269	334	5.4	471000
3MP420	2/7/1998@1130	N/R	N/R	N/R	N/R	N/R	N/R	97	3.8	N/R	N/R	N/R	N/R	345	472	159	7.43	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0262	385	1.8	407000
4MP420	2/29/1998@1409	54.0	15.4	22.6	6.8	<1.0	195	96	3.1	0.15	<0.10	0.52	16.4	334	477	161	7.40	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0319	348	3.6	N/R
1MP422	2/23/2000@1427	53.6	14.9	24.0	7.5	<1.0	198	91.9	6.4(1)	0.05	<0.10	0.54	15.9	292	492	163	7.60	0.001	<0.10	<0.005	<0.05	0.08	0.02	<0.10	<0.001	<0.10	<0.01	0.024	353	2.1	N/R
2MP422	3/8/2000@1142	N/R	N/R	N/R	N/R	N/R	N/R	91.3	3.5	N/R	N/R	N/R	N/R	319	484	163	7.63	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0201	368	<1.0	350000
3MP422	3/20/2000@1018	N/R	N/R	N/R	N/R	N/R	N/R	92.2	3.3	N/R	N/R	N/R	N/R	307	491	162	7.43	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0232	360	2.1	N/R
4MP422	3/03/2000@1333	58.6	15.9	25.8	8.3	<1.0	197	93.0	4.7	0.06	<0.10	0.57	15.5	303	489	162	7.49	0.001	<0.10	<0.005	<0.05	0.10	0.02	<0.10	<0.001	<0.10	<0.01	0.0251	385	<1.0	N/R
1MP423	3/24/2000@1506	57.7	15.7	26.1	8.0	<1.0	192	95	4.8	<0.05	<0.10	0.52	16.0	293	494	158	7.68	0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.032	764	3.8	N/R
2MP423	3/10/2000@843	N/R	N/R	N/R	N/R	N/R	N/R	91.8	3.1	N/R	N/R	N/R	N/R	286	487	160	7.66	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.030	719	6.4	455000
3MP423	3/21/2000@1301	N/R	N/R	N/R	N/R	N/R	N/R	95.1	3.3	N/R	N/R	N/R	N/R	328	494	160	7.46	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0330	752	2.9	N/R
4MP423	4/4/2000@1405	58.9	16.5	26.8	8.4	<1.0	194	97	3.6	0.11	<0.10	0.54	16.9	315	496	160	7.54	0.002	<0.10	<0.005	<0.05	0.07	0.02	<0.10	<0.001	<0.10	<0.01	0.0336	760	4.0	N/R
1MP424	3/24/2000@1442	58.6	15.9	26.1	7.9	<1.0	190	105	3.1	<0.05	<0.10	0.51	16.8	300	505	157	7.61	0.003	<0.10	<0.005	<0.05	<0.05	0.01	<0.10	<0.001	<0.10	<0.01	0.031	1280	5.1	N/R
2MP424	3/10/2000@0955	N/R	N/R	N/R	N/R	N/R	N/R	97.2	2.8	N/R	N/R	N/R	N/R	299	497	161	7.62	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.025	1180	6.2	416000
3MP424	3/21/2000@1238	N/R	N/R	N/R	N/R	N/R	N/R	99.8	3.5	N/R	N/R	N/R	N/R	333	505	161	7.44	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.026	1230	2.5	N/R
4MP424	4/4/2000@0938	59.1	16.3	26.6	8.4	<1.0	195	101	4.6	0.07	<0.10	0.54	16.8	316	508	161	7.50	0.003	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0250	1300	4.3	N/R
1MP425	2/24/2000@1324	57.4	15.1	25.4	7.7	<1.0	193	104	2.7	<0.05	<0.10	0.55	15.9	312	517	159	7.63	0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.042	1660	3.8	N/R
2MP425	3/10/2000@0941	N/R	N/R	N/R	N/R	N/R	N/R	105	2.8	N/R	N/R	N/R	N/R	306	511	160	7.65	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.034	1600	7.9	392000
3MP425	3/21/2000@1220	N/R	N/R	N/R	N/R	N/R	N/R	116	3.6	N/R	N/R	N/R	N/R	353	520	160	7.53	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0394	1480	1.6	N/R
4MP425	4/4/2000@1001	62.2	16.8	27.7	8.5	<1.0	196	110	4.8	0.09	<0.10	0.51	17.2	333	521	161	7.48	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0365	1700	13.5(1)	N/R
1MP426	2/24/2000@1316	55.5	14.9	24.2	7.6	<1.0	195	103	4.4	<0.05	<0.10	0.55	15.8	306	511	161	7.62	0.002	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.026	1030	2.2	N/R
2MP426	3/10/2000@0924	N/R	N/R	N/R	N/R	N/R	N/R	102	3.1	N/R	N/R	N/R	N/R	306	503	159	7.62	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.024	967	6.3	135000
3MP426	3/21/2000@1155	N/R	N/R	N/R	N/R	N/R	N/R	103	3.3	N/R	N/R	N/R	N/R	326	512	160	7.46	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0238	966	7.6	N/R
4MP426	4/4/2000@0950	61.2	16.8	27.3	8.5	<1.0	195	105	2.8	0.08	<0.10	0.52	17.3	325	509	160	7.45	0.002	<0.10	<0.005	<0.05	0.15(1)	0.02	<0.10	<0.001	<0.10	<0.01	0.0256	1043	7.8	N/R
1MP427A	2/24/2000@1145	58.4	15.4	25.2	7.6	<1.0	195	110	3.7	<0.05	<0.10	0.53	16.5	317	520	161	7.61	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.044	261	<1.0	N/R
2MP427A	3/10/2000@0916	N/R	N/R	N/R	N/R	N/R	N/R	106	3.1	N/R	N/R	N/R	N/R	320	514	160	7.60	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.038	264	1.8	170000
3MP427A	3/21/2000@1026	N/R	N/R	N/R	N/R	N/R	N/R	110	3.5	N/R	N/R	N/R	N/R	337	521	161	7.48	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0398	241	<1.0	N/R
4MP427A	4/5/2000@0816	59.9	15.6	27.0	8.8	<1.0	196	101	1.7	0.11	<0.10	0.51	15.7	290	523	161	7.41	0.001	<0.10	<0.005	<0.05	0.12(1)	0.02	<0.10	<0.001	<0.10	<0.01	0.0377	257	1.5	N/R
1MP428	2/24/2000@1112	60.1	15.4	26.1	8.4	<1.0	200	117	3.2	0.21(1)	<0.10	0.51	16.6	320	530	164	7.76	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.027	654	<1.0	N/R
2MP428	3/10/2000@0816	N/R	N/R	N/R	N/R	N/R	N/R	107	4.2	N/R	N/R	N/R	N/R	283	522	163	7.73	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.024	643	4.6	177000
3MP428	3/21/2000@0838	N/R	N/R	N/R	N/R	N/R	N/R	109	3.5	N/R	N/R	N/R	N/R	356	530	162	7.56	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0251	691	5.2	N/R
4MP428	4/4/2000@1328	64.4	16.8	28.7	9.0	<1.0	198	114	4.0	0.12	<0.10	0.49	17.3	339	530	163	7.50	<0.001	<0.10	<0.005	<0.05	0.13(1)	0.02	<0.10	<0.001	<0.10	<0.01	0.0254	725	3.0	N/R
1MP429	2/25/2000@842	63.5	15.7	28.2	8.9	<1.0	198	112	3.1	0.05	<0.10	0.47	15.9	321	534	163	7.87	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.031	1090	6.2	N/R
2MP429	3/10/2000@1254	N/R	N/R	N/R	N/R	N/R	N/R	110	3.3	N/R	N/R	N/R	N/R	325	531	168	7.97	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.028	1150	6.7	371000
3MP429	3/21/2000@1206	N/R	N/R	N/R	N/R	N/R	N/R	111	3.6	N/R	N/R	N/R	N/R	355	533	164	7.57	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0312	1050	<1.0	N/R
4MP429	4/4/2000@1425	64.4	16.7	29.1	9.3	<1.0	201	115	3.7	0.09	<0.10	0.47	17.0	337	537	166	7.67	<0.001	<0.10	<0.005	<0.05	0.1	0.02	<0.10	<0.001	<0.10	<0.01	0.0316	1200	5.3	N/R
1MP430	2/24/2000@1211	59.3	15.4	26.5	8.2	<1.0	197	113	4.0	0.10	<0.10	0.52	16.2	324	530	162	7.65	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.082	848	1.9	N/R
2MP430	3/10/2000@0801	N/R	N/R	N/R	N/R	N/R	N/R	107	3.5	N/R	N/R	N/R	N/R	322	524	162	7.71	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.067	863	4.5	370000
3MP430	3/21/2000@1013	N/R	N/R	N/R	N/R	N/R	N/R	117	3.5	N/R	N/R	N/R	N/R	350	531	162	7.51	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0736	768	1.4	N/R
4MP430	4/4/2000@0917	61.7	16.4	28.2	8.5	<1.0	197	114	2.2	0.10	<0.10	0.50	17.1	338	529	162	7.53	0.002	<0.10	<0.005	<0.05	0.07	0.03	<0.10	<0.001	<0.10	<0.01	0.0660	954	5.0	N/R
1MP431	2/24/2000@1207	64.0	16.7	28.1	8.3	<1.0	195	119	4.2	<0.05	<0.10	0.48	16.5	329	538	160	7.65	0.001	<0.10	<0.005	<0.05	0.06	0.03	<0.10	<0.001	<0.10	<0.01	0.077	400	2.0	N/R
2MP431	3/9/2000@1353	N/R	N/R	N/R	N/R	N/R	N/R	116	3.5	N/R	N/R	N/R	N/R	349	529	163	7.64	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0630	399	1.8	245000
3MP431	3/21/2000@0811	N/R	N/R	N/R	N/R	N/R	N/R	116	3.5	N/R	N/R	N/R	N/R	361	536	163	7.54	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0616	342	4.6	N/R
4MP431	4/4/2000@1235	64.3	17.3	28.8	8.5	<1.0	199	120	3.2	0.12	<0.10	0.49	17.5	346	533	164	7.52	0.002	<0.10	<0.005	<0.05	0.08	0.03	<0.10	<0.001	<0.10	<0.01	0.0705	399	2.9	N/R
1MP432	2/24/2000@1540	60.8	17.2	26.5	7.9	<1.0	194	101	3.1	<0.05	<0.10	0.52	17.5	290	499	160	7.67	0.003	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.062	618	5.5	N/R
2MP432	3/9/2000@1500	N/R	N/R	N/R	N/R	N/R	N/R	96.4	3.1	N/R	N/R	N/R	N/R	330	491	162	7.65	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0404	779	3.3	265000
3MP432	3/21/2000@1355	N/R	N/R	N/R	N/R	N/R	N/R	97.4	3.5	N/R	N/R	N/R	N/R	318	498	162	7.46	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0472	633	8.6	N/R
4MP432	4/5/2000@0800	56.1	15.6	25.3	8.5	<1.0	197	89	2.2	0.09	<0.10	0.53	15.4	271	498	162	7.49	0.002	<0.10	<0.005	<0.05	0.10	0.02	<0.10	<0.001	<0.10	<0.01	0.0290	664	3.0	N/R

(1) - Outlier

Rio Algom Mining Corp.
Smith Ranch Project

Wellfields 4 and 4A

Table L-1.2

MP Wells-Interior Ore Zone Baseline Water Quality Summary

Major Ions mg/L	Sample Count	Sample Count >DL	Mean	St. Dev.	Min. Value	Max. Value	K Factor	Lower Tol.	Upper. Tol.	Target Restoration Value
Calcium	62	62	56.8	4.6	48.0	67.0	3.056	42.7	70.9	56.8
Magnesium	62	62	16.0	1.2	13.0	18.9	3.056	12.4	19.6	16.0
Sodium	62	62	24.1	2.2	21.8	29.1	3.056	17.5	30.7	24.1
Potassium	61	62	7.7	0.6	6.8	9.3	3.06	5.8	9.6	7.7
Carb	62	0	0.5	0.0	0.5	0.5	3.056	0.5	0.5	0.5
Bicarb.	59	59	193.0	3.8	183.0	201.0	3.072	181.4	204.5	193.0
Sulfate	124	124	107	16	77	148	2.898	46	152	107
Chloride	122	122	3.6	0.9	1.6	6.0	2.896	1.1	6.1	3.6
Ammonium	61	48	0.08	0.04	0.03	0.21	3.06	-0.05	0.21	0.08
Nitrite+Nitrate	62	0	0.05	0.00	0.05	0.05	3.056	0.05	0.05	0.05
Fluoride	62	62	0.53	0.03	0.47	0.58	3.056	0.45	0.60	0.53
Silica	62	62	15.7	0.9	14.0	17.5	3.056	13.1	18.3	15.7
TDS	124	124	329	32	257	419	2.898	236	423	329
SC@25 - umoh/cm	124	124	499	26	449	555	2.898	423	576	499
Alkalinity	124	124	158	6	139	168	2.898	139	176	158
pH - SU	124	124	7.56	0.14	7.15	7.97	2.898	7.15	7.98	7.56
Trace Metals										
Arsenic	122	87	0.0019	0.0012	0.0005	0.0050	2.896	-0.0016	0.0053	0.0019
Boron	62	0	0.05	0.00	0.05	0.05	3.056	0.05	0.05	0.05
Cadmium	62	0	0.003	0.000	0.003	0.003	3.056	0.003	0.003	0.003
Chromium	62	0	0.03	0.00	0.03	0.03	3.056	0.03	0.03	0.03
Iron	58	14	0.03	0.02	0.03	0.10	3.077	-0.03	0.10	0.03
Manganese	62	21	0.01	0.00	0.01	0.01	3.056	0.01	0.01	0.01
Molybdenum	62	62	0.05	0.00	0.05	0.05	3.056	0.05	0.05	0.05
Selenium	123	0	0.0005	0.0000	0.0005	0.0005	2.9	0.0005	0.0005	0.0005
Vandium	62	62	0.05	0.00	0.05	0.05	3.056	0.05	0.05	0.05
Zinc	62	62	0.01	0.00	0.01	0.01	3.056	0.01	0.01	0.01
Radiometric										
U_{nat} - mg/L	117	117	0.0370	0.0226	0.0095	0.0990	2.909	-0.0287	0.1026	0.0370
Radium 228 - pCi/L	122	108	3.7	2.1	0.5	8.9	2.896	-2.5	9.9	3.7
Radium 226 - pCi/L	124	124	605.4	406.3	31.0	1700.0	2.898	-572.2	1783.0	605.4

Rio Algom Mining Corp.
Smith Ranch Project
Wellfield 4
Table L-2.1
M Wells

Well #	Date and Time Sampled	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	CO3 mg/L	HCO3 mg/L	SO4 mg/L	Cl mg/L	NH4 mg/L	NO3+NO2 mg/L	F mg/L	SiO2 mg/L	TDS mg/L	SC@25 µmho/cm	Alkalinity mg/L	pH std.units	As mg/L	B mg/L	Cd mg/L	Cr mg/L	Fe mg/L	Mn mg/L	Mo mg/L	Se mg/L	V mg/L	Zn mg/L	Unat mg/L	Ra226 pCi/L	Ra228 pCi/L
1M401	11/11/1998@1323	50.0	14.0	23.0	7.1	<1.0	197	86.0	3.0	0.07	<0.10	0.54	15.0	320	477	162	7.79	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0160	336.3	3.5
2M401	11/25/1998@1218	N/R	N/R	N/R	N/R	N/R	N/R	95.3	3.1	N/R	N/R	N/R	N/R	313	483	159	7.80	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0157	325.0	<1.0
3M401	12/9/1998@1358	N/R	N/R	N/R	N/R	N/R	N/R	93.6	3.1	N/R	N/R	N/R	N/R	346	478	162	7.65	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0168	324.0	<1.0
4M401	1/4/1999@1514	59.3	15.9	23.9	7.2	<1.0	196	100.0	2.8	0.11	<0.10	0.50	15.6	335	476	161	7.72	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0136	282.0	3.3
1M402	11/11/1998@1207	46.0	13.0	22.0	7.0	<1.0	190	79.0	4.0	0.08	<0.10	0.53	15.0	280	455	156	7.60	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0107	249.3	2.4
2M402	11/25/1998@1112	N/R	N/R	N/R	N/R	N/R	N/R	82.3	3.4	N/R	N/R	N/R	N/R	293	454	155	7.77	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0103	237.0	4.7
3M402	12/9/1998@1343	N/R	N/R	N/R	N/R	N/R	N/R	81.8	3.4	N/R	N/R	N/R	N/R	338	449	156	7.49	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0115	228.0	1.6
4M402	1/4/1999@1504	54.8	14.9	23.4	7.1	<1.0	191	79.9	3.5	0.11	<0.10	0.49	15.3	303	448	157	7.59	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0112	202.0	3.9
1M403	11/11/1998@1240	43.0	12.0	23.0	<1.0	<1.0	185	68.0	5.0	0.06	<0.10	0.50	14.0	279	431	152	7.68	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0024	5.7	<1.0
2M403	11/25/1998@0910	N/R	N/R	N/R	N/R	N/R	N/R	72.1	4.1	N/R	N/R	N/R	N/R	276	441	156	7.70	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0028	4.9	<1.0
3M403	12/9/1998@1329	N/R	N/R	N/R	N/R	N/R	N/R	74.8	4.1	N/R	N/R	N/R	N/R	315	434	155	7.49	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0031	8.8	<1.0
4M403	1/4/1999@1450	51.5	14.1	23.9	7.4	<1.0	186	79.1	3.8	0.12	<0.10	0.47	15.1	284	431	153	7.52	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0026	5.4	2.0
1M404	11/11/1998@1040	44.0	13.0	23.0	7.0	<1.0	194	74.0	5.0	<0.05	<0.10	0.51	15.0	293	438	160	7.67	<0.001	<0.10	<0.005	<0.05	0.07	0.02	<0.1	<0.001	<0.10	<0.01	0.0005	2.8	<1.0
2M404	11/25/1998@0856	N/R	N/R	N/R	N/R	N/R	N/R	71.8	2.7	N/R	N/R	N/R	N/R	262	440	161	7.61	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0007	3.2	1.6
3M404	12/9/1998@1149	N/R	N/R	N/R	N/R	N/R	N/R	71.4	3.4	N/R	N/R	N/R	N/R	310	435	159	7.43	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0009	4.9	<1.0
4M404	1/4/1999@1324	47.2	13.3	23.0	7.0	<1.0	194	80.1	2.8	0.08	<0.10	0.50	14.8	279	432	160	7.47	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0008	2.6	1.8
1M405	11/11/1998@1016	45.0	13.0	23.0	7.0	<1.0	193	78.0	5.0	<0.05	<0.10	0.52	15.0	287	444	158	7.62	<0.001	<0.10	<0.005	<0.05	0.06	0.02	<0.1	<0.001	<0.10	<0.01	0.0004	3.2	4.9
2M405	11/25/1998@0811	N/R	N/R	N/R	N/R	N/R	N/R	73.0	3.8	N/R	N/R	N/R	N/R	261	444	159	7.51	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0006	2.8	<1.0
3M405	12/9/1998@1134	N/R	N/R	N/R	N/R	N/R	N/R	74.2	3.8	N/R	N/R	N/R	N/R	326	438	159	7.42	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0009	2.9	<1.0
4M405	1/4/1999@1307	47.5	13.6	23.0	6.9	<1.0	195	73.6	3.2	0.09	<0.10	0.51	14.8	295	436	160	7.49	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0006	1.9	3.6
1M406	11/11/1998@0950	45.0	13.0	22.0	7.0	<1.0	192	78.0	4.0	<0.05	<0.10	0.53	15.0	263	440	158	7.73	0.002	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0006	3.1	2.6
2M406	11/25/1998@0835	N/R	N/R	N/R	N/R	N/R	N/R	73.7	3.4	N/R	N/R	N/R	N/R	276	443	159	7.52	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0006	2.6	<1.0
3M406	12/9/1998@1120	N/R	N/R	N/R	N/R	N/R	N/R	75.4	2.7	N/R	N/R	N/R	N/R	282	438	158	7.43	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.001	3.5	<1.0
4M406	1/4/1999@1259	49.5	13.8	22.7	6.8	<1.0	193	82.8	3.4	0.09	<0.10	0.52	15.0	269	436	159	7.53	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0008	2.9	3.1
1M407	11/11/1998@0935	46.0	14.0	22.0	7.0	<1.0	187	83.0	4.0	<0.05	<0.10	0.55	14.0	284	451	154	7.60	0.004	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0012	3.0	1.7
2M407	11/24/1998@1459	N/R	N/R	N/R	N/R	N/R	N/R	82.3	3.4	N/R	N/R	N/R	N/R	276	459	157	7.50	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0015	2.9	<1.0
3M407	12/9/1998@1106	N/R	N/R	N/R	N/R	N/R	N/R	83.0	2.7	N/R	N/R	N/R	N/R	294	453	157	7.40	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0015	2.0	<1.0
4M407	1/4/1999@1241	51.9	14.9	23.4	7.3	<1.0	194	81.3	4.4	0.08	<0.10	0.52	14.9	288	452	159	7.52	0.003	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0012	3.0	1.7
1M408	11/11/1998@0655	50.0	15.0	22.0	7.0	<1.0	189	98.0	5.0	0.11	<0.10	0.57	15.0	331	439	156	7.69	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0011	2.6	2.7
2M408	11/24/1998@1448	N/R	N/R	N/R	N/R	N/R	N/R	86.3	3.8	N/R	N/R	N/R	N/R	296	451	142(1)	7.56	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0009	2.7	2.8
3M408	12/9/1998@0858	N/R	N/R	N/R	N/R	N/R	N/R	86.3	4.1	N/R	N/R	N/R	N/R	279	454	149	7.27	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0012	3.0	<1.0
4M408	1/4/1999@1102	48.3	14.5	22.9	7.4	<1.0	179	93.2	6.3(1)	0.09	<0.10	0.55	13.5	293	449	147	7.60	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0016	3.1	2.0
1M409	11/11/1998@0707	50.0	13.0	22.0	8.0	<1.0	186	95.0	4.0	0.11	<0.10	0.55	15.0	309	463	153	7.69	0.003	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0013	3.4	3.5
2M409	11/24/1998@1415	N/R	N/R	N/R	N/R	N/R	N/R	89.1	3.4	N/R	N/R	N/R	N/R	290	466	152	7.55	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0009	4.5	1.6
3M409	12/9/1998@0843	N/R	N/R	N/R	N/R	N/R	N/R	87.3	3.8	N/R	N/R	N/R	N/R	298	461	154	7.26	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0012	2.5	3.4
4M409	1/4/1999@1044	60.9	14.9	22.7	7.0	<1.0	185	110.0	5.4	0.1	<0.10	0.56	13.8	310	457	152	7.60	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0012	3.0	<1.0
1M410	11/11/1998@0720	48.0	13.0	23.0	7.0	<1.0	184	87.0	4.0	0.1	<0.10	0.55	14.0	305	466	152	7.76	0.002	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0007	2.7	1.7
2M410	11/24/1998@1257	N/R	N/R	N/R	N/R	N/R	N/R	94.7	3.4	N/R	N/R	N/R	N/R	317	469	149	7.67	0.005	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0019	3.3	3.5
3M410	12/9/1998@0827	N/R	N/R	N/R	N/R	N/R	N/R	93.6	3.4	N/R	N/R	N/R	N/R	305	465	153	7.16	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0018	3.4	2.9
4M410	1/4/1999@1033	51.1	15.4	22.3	7.3	<1.0	185	104.0	3.9	0.11	<0.10	0.54	13.9	302	457	152	7.68	0.003	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0014	9.2	<1.0
1M411	11/11/1998@0746	43.0	13.0	22.0	8.0	<1.0	168	84.0	6.0(1)	<0.05	<0.10	0.57	14.0	295	474	138(1)	7.56	0.002	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0007	2.7	3.0
2M411	11/24/1998@1231	N/R	N/R	N/R	N/R	N/R	N/R	95.3	2.4	N/R	N/R	N/R	N/R	314	478	154	7.51	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0007	3.3	5.1
3M411	12/9/1998@0809	N/R	N/R	N/R	N/R	N/R	N/R	100.0	3.4	N/R	N/R	N/R	N/R	328	469	154	7.03	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0013	3.1	2.7
4M411	1/4/1999@1023	49.8	15.2	21.9	6.8	<1.0	189	89.7	3.2	0.11	<0.10	0.58	14.5	302	466	155	7.55	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0008	2.6	<1.0
1M412	11/10/1998@1645	50.0	16.0	22.0	8.0	<1.0	180	111.0	4.0	0.09	<0.10	0.56	14.0	337	486	148	7.60	0.005	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0016	2.5	<1.0
2M412	11/24/1998@1218	N/R	N/R	N/R	N/R	N/R	N/R	108.0	3.1	N/R	N/R	N/R	N/R	330	491	151	7.57	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0017	2.6	2.6
3M412	12/8/1998@1439	N/R	N/R	N/R	N/R	N/R	N/R	108.0	3.4	N/R	N/R	N/R	N/R	316	481	154	7.45	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0021	3.9	<1.0
4M412	1/4/1999@0825	50.0	15.3	21.0	6.8	<1.0	188	93.6	3.6	0.13	<0.10	0.56	14.1	331	479	155	7.36	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0024	3.4	1.3
1M413	11/10/1998@1600	53.0	14.0	23.0	8.0	<1.0	181	112.0	3.0	0.09	<0.10	0.52	14.0	340	488	149	7.78	0.004	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0020	3.3	<1.0
2M413	11/24/1998@1151	N/R	N/R	N/R	N/R	N/R	N/R	110.0	3.4	N/R	N/R	N/R	N/R	325	499	150	7.68	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0019	3.2	2.3
3M413	12/8/1998@1426	N/R	N/R	N/R	N/R	N/R	N/R	110.0	3.4	N/R	N/R	N/R	N/R	322	489	154	7.54	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0018	2.8	<1.0
4M413	1/4/1999@0816	52.7	15.6	21.7	7.0	<1.0	188	99.4	1.8	0.11	<0.10	0.54	14.5	329	489	155	7.40	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0015	3.3	<1.0

Rio Algom Mining Corp.
Smith Ranch Project
Wellfield 4
Table L-2.1
M Wells

	Date and Time	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NH4	NO3+NO2	F	SiO2	TDS	SC@25	Alkalinity	pH	As	B	Cd	Cr	Fe	Mn	Mo	Se	V	Zn	Unat	Ra226	Ra228
Well #	Sampled	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µmho/cm	mg/L	std.units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L
1M414	11/10/1998@1547	52.0	15.0	23.0	9.0	<1.0	168	122.0	6.0(1)	0.06	<0.10	0.52	13.0	340	499	138(1)	7.68	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0012	4.5	2.3
2M414	11/24/1998@1018	N/R	N/R	N/R	N/R	N/R	N/R	120.0	4.8	N/R	N/R	N/R	N/R	324	504	146	7.67	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0016	2.4	5.1
3M414	12/8/1998@1409	N/R	N/R	N/R	N/R	N/R	N/R	117.0	4.1	N/R	N/R	N/R	N/R	331	497	151	7.55	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0017	2.2	<1.0
4M414	1/4/1999@0806	52.3	16.6	21.7	7.4	<1.0	186	112.0	4.1	0.08	<0.10	0.53	14.5	344	498	153	7.40	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0012	5.7	<1.0
1M415	11/10/1998@1522	56.0	18.0	22.0	7.0	<1.0	190	125.0	3.0	0.06	<0.10	0.55	15.0	373	524	156	7.51	<0.001	<0.10	<0.005	<0.05	0.06	<0.01	<0.1	<0.001	<0.10	<0.01	0.0006	3.4	5.2
2M415	11/24/1998@0950	N/R	N/R	N/R	N/R	N/R	N/R	127.0	2.7	N/R	N/R	N/R	N/R	341	531	158	7.49	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0009	3.4	4.9
3M415	12/8/1998@1348	N/R	N/R	N/R	N/R	N/R	N/R	125.0	2.7	N/R	N/R	N/R	N/R	367	521	156	7.27	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.001	3.1	3.0
4M415	1/4/1999@0756	58.1	17.5	21.5	6.7	<1.0	189	117.0	1.4	0.11	<0.10	0.56	14.7	352	518	155	7.27	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0009	3.9	2.7
1M416	11/10/1998@1336	61.0	19.0	22.0	8.0	<1.0	189	147.0	2.0	0.06	<0.10	0.59	14.0	418	557	155	7.69	0.006	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0027	7.3	3.7
2M416	11/24/1998@0935	N/R	N/R	N/R	N/R	N/R	N/R	141.0	2.4	N/R	N/R	N/R	N/R	379	556	157	7.63	0.006	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0028	7.0	2.0
3M416	12/8/1998@1205	N/R	N/R	N/R	N/R	N/R	N/R	138.0	3.1	N/R	N/R	N/R	N/R	405	542	157	7.52	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0026	6.0	2.6
4M416	12/30/1998@1347	62.5	18.8	22.1	7.2	<1.0	191	133.0	1.8	0.06	<0.10	0.51	14.8	401	540	157	7.59	0.004	<0.10	<0.005	<0.05	0.10	<0.01	<0.1	<0.001	<0.10	<0.01	0.0021	4.6	<1.0
1M417	11/10/1998@1259	60.0	18.0	23.0	8.0	<1.0	180	148.0	8.0(1)	0.06	<0.10	0.59	13.0	391	553	148	7.69	0.013	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0093	4.6	<1.0
2M417	11/24/1998@0921	N/R	N/R	N/R	N/R	N/R	N/R	143.0	5.1	N/R	N/R	N/R	N/R	378	559	149	7.65	0.013	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0092	5.0	2.3
3M417	12/8/1998@1149	N/R	N/R	N/R	N/R	N/R	N/R	140.0	4.5	N/R	N/R	N/R	N/R	421	547	154	7.51	0.011	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.007	4.6	1.2
4M417	12/30/1998@1336	61.8	18.3	22.3	7.5	<1.0	187	136.0	2.2	0.06	<0.10	0.52	14.4	382	544	153	7.61	0.009	<0.10	<0.005	<0.05	0.07	<0.01	<0.1	<0.001	<0.10	<0.01	0.0058	5.1	<1.0
1M418A	11/10/1998@1321	58.0	17.0	23.0	8.0	<1.0	180	139.0	5.0	0.06	<0.10	0.54	14.0	380	533	148	7.66	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0014	4.0	<1.0
2M418A	11/24/1998@0751	N/R	N/R	N/R	N/R	N/R	N/R	150.0	3.1	N/R	N/R	N/R	N/R	369	557	152	7.56	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0013	3.9	7.0
3M418A	12/8/1998@1132	N/R	N/R	N/R	N/R	N/R	N/R	147.0	3.4	N/R	N/R	N/R	N/R	408	554	151	7.42	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0016	3.2	2.9
4M418A	12/30/1998@1326	63.4	18.0	22.8	7.6	<1.0	184	142.0	2.5	0.07	<0.10	0.51	14.8	408	549	151	7.60	<0.001	<0.10	<0.005	<0.05	0.09	<0.01	<0.1	<0.001	<0.10	<0.01	0.0013	6.5	<1.0
1M419	11/10/1998@1039	63.0	17.0	22.0	8.0	<1.0	188	148.0	4.0	<0.05	<0.10	0.53	14.0	376	555	154	7.77	0.004	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0065	17.8	<1.0
2M419	11/24/1998@0737	N/R	N/R	N/R	N/R	N/R	N/R	145.0	3.1	N/R	N/R	N/R	N/R	404	569	160	7.56	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0053	12.2	6.7
3M419	12/8/1998@1113	N/R	N/R	N/R	N/R	N/R	N/R	155.0	3.1	N/R	N/R	N/R	N/R	439	557	159	7.33	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0061	12.5	2.7
4M419	12/30/1998@1309	62.3	19.7	22.0	7.1	<1.0	190	142.0	1.6	0.07	<0.10	0.53	15.0	397	554	156	7.65	0.003	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0055	12.8	1.6
1M420	11/12/1998@1157	69.0	18.0	23.0	8.0	<1.0	182	146.0	3.0	0.1	<0.10	0.55	15.0	397	555	150	7.59	0.028	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0139	4.3	<1.0
2M420	11/30/1998@1305	N/R	N/R	N/R	N/R	N/R	N/R	151.0	2.4	N/R	N/R	N/R	N/R	397	562	152	7.33	0.02	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0148	4.0	<1.0
3M420	12/14/1998@1541	N/R	N/R	N/R	N/R	N/R	N/R	149.0	2.4	N/R	N/R	N/R	N/R	420	563	155	7.50	0.015	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0151	5.1	2.8
4M420	1/5/1999@1507	68.0	19.0	22.8	7.6	<1.0	190	147.0	3.0	0.07	<0.10	0.54	14.8	391	547	156	7.60	0.013	<0.10	<0.005	<0.05	<0.05	0.03	<0.1	<0.001	<0.10	<0.01	0.0149	6.7	1.4
1M421	11/12/1998@1127	71.0	19.0	23.0	7.0	<1.0	193	143.0	3.0	0.06	<0.10	0.56	16.0	398	561	159	7.52	0.009	<0.10	<0.005	<0.05	<0.05	0.03	<0.1	<0.001	<0.10	<0.01	0.0133	2.7	3.5
2M421	11/30/1998@1250	N/R	N/R	N/R	N/R	N/R	N/R	147.0	2.4	N/R	N/R	N/R	N/R	401	568	159	7.37	0.007	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0142	3.2	<1.0
3M421	12/14/1998@1421	N/R	N/R	N/R	N/R	N/R	N/R	143.0	2.4	N/R	N/R	N/R	N/R	420	562	159	7.32	0.005	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0138	2.9	2.1
4M421	1/5/1999@1457	69.7	19.7	23.0	7.4	<1.0	193	158.0	2.0	0.08	<0.10	0.56	15.7	395	551	159	7.59	0.006	<0.10	<0.005	<0.05	<0.05	0.03	<0.1	<0.001	<0.10	<0.01	0.0131	3.7	2.2
1M422	11/12/1998@1000	69.0	18.0	23.0	8.0	<1.0	191	136.0	4.0	0.06	<0.10	0.54	15.0	393	554	157	7.78	0.008	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0116	0.9	<1.0
2M422	11/30/1998@1230	N/R	N/R	N/R	N/R	N/R	N/R	144.0	2.7	N/R	N/R	N/R	N/R	381	562	157	7.55	0.008	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0122	1.4	22.0
3M422	12/14/1998@1407	N/R	N/R	N/R	N/R	N/R	N/R	144.0	2.7	N/R	N/R	N/R	N/R	409	558	157	7.60	0.008	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0126	1.6	3.5
4M422	1/5/1999@1255	70.5	20.0	24.2	7.5	<1.0	187	153.0	3.3	0.12	<0.10	0.54	15.4	390	538	154	7.76	0.009	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0114	1.9	2.9
1M423	11/12/1998@0947	68.0	19.0	23.0	7.0	<1.0	193	140.0	4.0	<0.05	<0.10	0.56	16.0	396	554	159	7.50	0.003	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.013	1.2	2.4
2M423	11/30/1998@1216	N/R	N/R	N/R	N/R	N/R	N/R	141.0	2.7	N/R	N/R	N/R	N/R	389	557	158	7.41	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0139	1.3	1.0
3M423	12/14/1998@1352	N/R	N/R	N/R	N/R	N/R	N/R	143.0	2.4	N/R	N/R	N/R	N/R	404	554	159	7.40	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0134	2.2	3.3
4M423	1/5/1999@1244	73.9	20.7	24.0	7.2	<1.0	193	147.0	1.7	0.1	<0.10	0.56	15.9	382	540	159	7.52	0.005	<0.10	<0.005	<0.05	<0.05	0.03	<0.1	<0.001	<0.10	<0.01	0.0124	2.7	2.6
1M424	11/12/1998@0934	65.0	18.0	23.0	7.0	<1.0	186	130.0	4.0	<0.05	<0.10	0.57	15.0	395	538	153	7.50	0.004	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0136	1.0	1.9
2M424	11/30/1998@1041	N/R	N/R	N/R	N/R	N/R	N/R	137.0	2.4	N/R	N/R	N/R	N/R	372	546	154	7.54	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0145	2.0	1[2]
3M424	12/14/1998@1323	N/R	N/R	N/R	N/R	N/R	N/R	133.0	3.1	N/R	N/R	N/R	N/R	387	546	156	7.56	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0146	2.2	2.2
4M424	1/5/1999@1234	71.8	19.6	24.5	7.4	<1.0	191	144.0	3.2	0.1	<0.10	0.55	15.5	365	531	157	7.60	0.004	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0133	2.1	1.4
1M425	11/12/1998@0920	64.0	18.0	24.0	8.0	<1.0	187	130.0	4.0	0.09	<0.10	0.56	16.0	381	541	154	7.51	0.037	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0122	1.9	<1.0
2M425	11/30/1998@1016	N/R	N/R	N/R	N/R	N/R	N/R	131.0	3.8	N/R	N/R	N/R	N/R	377	545	155	7.43	0.025	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0128	2.5	<1.0
3M425	12/14/1998@1157	N/R	N/R	N/R	N/R	N/R	N/R	130.0	3.1	N/R	N/R	N/R	N/R	406	538	156	7.40	0.019	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0128	1.8	1.4
4M425	1/5/1999@1224	69.4	19.4	23.8	7.7	<1.0	189	139.0	3.7	0.09	<0.10	0.55	15.3	370	526	156	7.60	0.02	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0121	2.7	2.1
1M426	11/12/1998@0737	62.0	18.0	24.0	7.0	<1.0	192	122.0	4.0	0.11	<0.10	0.58	16.0	366	534	158	7.50	0.008	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0162	2.6	1.5
2M426	11/30/1998@1027	N/R	N/R	N/R	N/R	N/R	N/R	128.0	3.1	N/R	N/R	N/R	N/R	373	539	157	7.45	0.009	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0169	1.4	<1.0
3M426	12/14/1998@1144	N/R	N/R	N/R	N/R	N/R	N/R	127.0	3.4	N/R	N/R	N/R	N/R	384	535	157	7.43	0.008	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0172	2.0	<1.0
4M426	1/5/1999@1033	68.8	19.6	24.6	7.5	<1.0	189	137.0	2.7	0.12	<0.10	0.55	15.8	376	521	155	7.55	0.008	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0153	3.2	3.6

Rio Algom Mining Corp.
Smith Ranch Project
Wellfield 4
Table L-2.1
M Wells

Well #	Date and Time Sampled	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	CO3 mg/L	HCO3 mg/L	SO4 mg/L	Cl mg/L	NH4 mg/L	NO3+NO2 mg/L	F mg/L	SiO2 mg/L	TDS mg/L	SC@25 µmho/cm	Alkalinity mg/L	pH std.units	As mg/L	B mg/L	Cd mg/L	Cr mg/L	Fe mg/L	Mn mg/L	Mo mg/L	Se mg/L	V mg/L	Zn mg/L	Unat mg/L	Ra226 pCi/L	Ra228 pCi/L
1M427	11/12/1998@0726	58.0	16.0	23.0	7.5	<1.0	191	113.0	4.0	0.11	<0.10	0.55	15.5	362	509	157	7.56	0.018	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0165	3.6	<1.0
2M427	11/30/1998@0955	N/R	N/R	N/R	N/R	N/R	N/R	113.0	3.1	N/R	N/R	N/R	N/R	336	512	156	7.46	0.016	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0176	3.6	<1.0
3M427	12/14/1998@1133	N/R	N/R	N/R	N/R	N/R	N/R	112.0	3.8	N/R	N/R	N/R	N/R	365	508	158	7.45	0.014	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0173	2.9	2.4
4M427	1/5/1999@1019	65.0	18.5	23.9	7.4	<1.0	191	119.0	3.4	0.12	<0.10	0.54	15.8	350	494	157	7.61	0.013	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0153	3.2	3.6
1M428	11/12/1998@0714	59.0	16.0	23.0	7.0	<1.0	193	104.0	5.0	0.06	<0.10	0.56	16.0	356	508	158	7.51	0.002	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0173	1.6	<1.0
2M428	11/30/1998@0742	N/R	N/R	N/R	N/R	N/R	N/R	115.0	3.1	N/R	N/R	N/R	N/R	347	513	158	7.34	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0190	2.0	<1.0
3M428	12/14/1998@0841	N/R	N/R	N/R	N/R	N/R	N/R	115.0	3.4	N/R	N/R	N/R	N/R	348	510	159	7.25	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0186	1.6	3.4
4M428	1/5/1999@1009	64.7	18.5	24.0	7.2	<1.0	192	134.0	4.1	0.12	<0.10	0.54	16.0	348	496	158	7.60	0.002	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0175	1.9	3.2
1M429A	11/12/1998@0700	59.0	17.0	23.0	7.0	<1.0	192	108.0	4.0	0.08	<0.10	0.55	16.0	358	510	158	7.51	0.004	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0154	3.1	<1.0
2M429A	11/30/1998@0727	N/R	N/R	N/R	N/R	N/R	N/R	112.0	3.1	N/R	N/R	N/R	N/R	355	515	158	7.40	0.006	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0165	3.3	<1.0
3M429A	12/14/1998@0829	N/R	N/R	N/R	N/R	N/R	N/R	116.0	3.4	N/R	N/R	N/R	N/R	364	513	159	7.30	0.006	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0156	3.4	2.3
4M429A	1/5/1999@0946	64.7	18.1	24.3	7.5	<1.0	192	122.0	5.4	0.12	<0.10	0.53	16.1	353	498	158	7.65	0.008	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0144	5.5	4.1
1M430	11/11/1998@1152	55.0	16.0	23.0	7.0	<1.0	193	101.0	4.0	0.1	<0.10	0.56	16.0	354	488	159	7.49	0.008	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.018	3.7	<1.0
2M430	11/30/1998@0708	N/R	N/R	N/R	N/R	N/R	N/R	104.0	2.7	N/R	N/R	N/R	N/R	332	495	157	7.35	0.006	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0191	4.7	5.1
3M430	12/14/1998@0946	N/R	N/R	N/R	N/R	N/R	N/R	105.0	3.1	N/R	N/R	N/R	N/R	348	490	159	7.30	0.007	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0185	5.5	2.6
4M430	1/5/1999@0808	60.2	17.0	23.5	7.2	<1.0	192	100.0	3.6	0.11	<0.10	0.53	16.1	330	476	158	7.37	0.006	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0166	4.0	3.3
1M431	11/11/1998@1540	42.0	12.0	27.0	9.0	<1.0	142	100.0	4.0	0.11	<0.10	0.58	15.0	290	427	117(1)	7.60	0.014	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.011	2.2	<1.0
2M431	11/30/1998@0810	N/R	N/R	N/R	N/R	N/R	N/R	103.0	3.1	N/R	N/R	N/R	N/R	293	455	130(1)	7.48	0.016	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.015	5.3	<1.0
3M431	12/14/1998@0808	N/R	N/R	N/R	N/R	N/R	N/R	104.0	3.8	N/R	N/R	N/R	N/R	309	470	142(1)	7.35	0.016	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0158	2.5	1.7
4M431	1/5/1999@0757	56.6	16.4	24.5	9.2	<1.0	180	110.0	3.9	0.13	<0.10	0.51	15.9	328	466	148	7.48	0.017	<0.10	<0.005	<0.05	<0.05	<0.01	<0.1	<0.001	<0.10	<0.01	0.0146	2.5	1.8
1M432	11/11/1998@1505	57.0	16.0	24.0	7.0	<1.0	191	103.0	4.0	0.11	<0.10	0.56	16.0	352	498	157	7.37	0.028	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.013	1.9	1.8
2M432	11/25/1998@1342	N/R	N/R	N/R	N/R	N/R	N/R	107.0	2.7	N/R	N/R	N/R	N/R	318	500	157	7.32	0.026	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0134	2.3	2.0
3M432	12/9/1998@1621	N/R	N/R	N/R	N/R	N/R	N/R	109.0	3.8	N/R	N/R	N/R	N/R	305	497	156	7.20	0.024	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0137	2.0	<1.0
4M432	1/5/1999@0748	62.5	17.2	24.0	7.1	<1.0	191	117.0	3.9	0.11	<0.10	0.53	16.1	346	490	157	7.30	0.021	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0125	1.6	3.1
1M433	11/11/1998@1451	60.0	17.0	23.0	7.0	<1.0	195	111.0	4.0	0.07	<0.10	0.56	16.0	360	517	160	7.48	0.004	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.013	1.9	1.9
2M433	11/25/1998@1234	N/R	N/R	N/R	N/R	N/R	N/R	113.0	3.1	N/R	N/R	N/R	N/R	337	517	158	7.50	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0133	2.6	2.6
3M433	12/9/1998@1607	N/R	N/R	N/R	N/R	N/R	N/R	117.0	3.8	N/R	N/R	N/R	N/R	338	513	160	7.30	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0137	2.1	2.6
4M433	1/5/1999@0738	66.0	17.9	24.2	7.2	<1.0	192	127.0	3.0	0.11	<0.10	0.54	16.5	342	503	158	7.35	0.003	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.012	2.2	3.7
1M434	11/11/1998@1310	53.0	15.0	23.0	8.0	<1.0	194	111.0	4.0	<0.05	<0.10	0.55	15.6	339	506	159	7.50	0.007	<0.10	<0.005	<0.05	<0.05	0.02	<0.1	<0.001	<0.10	<0.01	0.0141	2.8	<1.0
2M434	11/25/1998@1202	N/R	N/R	N/R	N/R	N/R	N/R	105.0	3.1	N/R	N/R	N/R	N/R	344	506	158	7.50	0.007	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0138	3.6	3.0
3M434	12/9/1998@1416	N/R	N/R	N/R	N/R	N/R	N/R	112.0	3.4	N/R	N/R	N/R	N/R	357	500	161	7.43	0.007	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0158	2.3	2.5
4M434	1/4/1999@1541	63.2	17.3	24.3	7.7	<1.0	194	113.0	4.3	0.11	<0.10	0.52	16.4	349	499	159	7.38	0.007	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0134	2.7	4.6
1M435	2/25/00@1059	62.5	17.0	26.2	7.8	<1.0	190	115.0	2.9	<0.05	<0.10	0.56	17.0	333	528	157	7.57	0.007	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.014	4.5	2.8
2M435	3/9/00@0823	N/R	N/R	N/R	N/R	N/R	N/R	114.0	3.3	N/R	N/R	N/R	N/R	346	521	159	7.59	0.005	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0121	3.1	<1.0
3M435	3/22/00@0902	N/R	N/R	N/R	N/R	N/R	N/R	115.0	2.6	N/R	N/R	N/R	N/R	331	528	160	7.54	0.005	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0147	4.0	<1.0
4M435	4/4/00@0837	61.8	17.3	26.3	7.8	N/R	194	111.0	2.8	N/R	N/R	0.56	17.8	348	529	160	7.45	0.005	N/R	N/R	N/R	N/R	0.02	N/R	<0.001	N/R	N/R	0.0166	5.0	3.6
1M436	2/25/00@0902	62.3	16.0	26.3	8.9	<1.0	194	116.0	3.8	<0.05	<0.10	0.54	15.9	332	535	160	7.98	0.022	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.015	180.0	2.7
2M436	3/9/00@0833	N/R	N/R	N/R	N/R	N/R	N/R	117.0	3.5	N/R	N/R	N/R	N/R	351	528	159	7.76	0.019	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.013	209.0	2.2
3M436	3/22/00@0854	N/R	N/R	N/R	N/R	N/R	N/R	116.0	2.8	N/R	N/R	N/R	N/R	345	541	162	7.64	0.021	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0165	203.0	<1.0
4M436	4/4/00@0846	59.8	16.0	26.3	9.4	N/R	192	111.0	4.4	N/R	N/R	0.54	16.5	346	536	158	7.58	0.022	N/R	N/R	N/R	N/R	0.02	N/R	<0.001	N/R	N/R	0.0166	183.0	2.2
1M437	2/25/00@1123	61.8	15.9	26.2	8.0	<1.0	192	115.0	2.4	<0.05	<0.10	0.52	15.9	335	534	158	7.58	0.008	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.016	2.9	<1.0
2M437	3/9/00@0815	N/R	N/R	N/R	N/R	N/R	N/R	116.0	4.2	N/R	N/R	N/R	N/R	335	523	161	7.57	0.007	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.014	2.4	<1.0
3M437	3/22/00@0846	N/R	N/R	N/R	N/R	N/R	N/R	118.0	2.8	N/R	N/R	N/R	N/R	345	534	160	7.50	0.006	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.017	8.0	<1.0
4M437	4/4/00@0826	60.9	16.1	26.1	8.2	N/R	192	111.0	3.5	N/R	N/R	0.54	16.6	345	534	158	7.47	0.006	N/R	N/R	N/R	N/R	0.03	N/R	<0.001	N/R	N/R	0.0178	5.1	2.1
1M438	2/24/00@1046	53.9	15.2	25.6	8.4	<1.0	176	111.0	3.7	<0.05	<0.10	0.55	16.5	310	505	145(1)	7.67	0.006	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.013	3.8	<1.0
2M438	3/9/00@1236	N/R	N/R	N/R	N/R	N/R	N/R	118.0	3.7	N/R	N/R	N/R	N/R	360	534	161	7.55	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0138	26.0	<1.0
3M438	3/21/00@0751	N/R	N/R	N/R	N/R	N/R	N/R	114.0	3.3	N/R	N/R	N/R	N/R	350	524	156	7.52	0.007	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0154	5.0	<1.0
4M438	4/3/00@1433	60.7	16.8	27.0	8.5	N/R	190	107.0	4.2	N/R	N/R	0.52	16.6	340	523	157	7.47	0.007	N/R	N/R	N/R	N/R	0.02	N/R	<0.001	N/R	N/R	0.0174	3.6	2.5
1M439	2/24/00@0844	62.0	15.8	25.8	7.7	<1.0	193	120.0	6.0(1)	<0.05	<0.10	0.54	17.2	333	536	159	7.58	0.002	<0.10	<0.005	<0.05	<0.05	0.03	<0.10	<0.001	<0.10	<0.01	0.017	23.8	<1.0
2M439	3/9/00@1030	N/R	N/R	N/R	N/R	N/R	N/R	112.0	3.8	N/R	N/R	N/R	N/R	348	509	152	7.63	0.006	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0144	5.3	<1.0
3M439	3/21/00@0742	N/R	N/R	N/R	N/R	N/R	N/R	117.0	3.5	N/R	N/R	N/R	N/R	364	541	159	7.52	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0138	22.1	<1.0
4M439	4/4/00@0812	67.0	17.2	28.9	8.9	N/R	195	123.0	2.9	N/R	N/R	0.54	18.1	352	541	160	7.47	0.002	N/R	N/R	N/R	N/R	0.03	N/R	<0.001	N/R	N/R	0.0156	21.3	3.6

Rio Algom Mining Corp.
Smith Ranch Project
Wellfield 4
Table L-2.1
M Wells

Well #	Date and Time Sampled	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	CO3 mg/L	HCO3 mg/L	SO4 mg/L	Cl mg/L	NH4 mg/L	NO3+NO2 mg/L	F mg/L	SiO2 mg/L	TDS mg/L	SC@25 µmho/cm	Alkalinity mg/L	pH std.units	As mg/L	B mg/L	Cd mg/L	Cr mg/L	Fe mg/L	Mn mg/L	Mo mg/L	Se mg/L	V mg/L	Zn mg/L	Unat mg/L	Ra226 pCi/L	Ra228 pCi/L
1M440	2/24/00@0832	60.3	14.1	25.1	8.7	<1.0	190	126.0	5.0	<0.05	<0.10	0.54	15.2	335	540	157	7.56	0.004	<0.10	<0.005	<0.05	<0.05	0.03	<0.10	<0.001	<0.10	<0.01	0.015	8.3	<1.0
2M440	3/8/00@1506	N/R	N/R	N/R	N/R	N/R	N/R	121.0	3.8	N/R	N/R	N/R	N/R	360	539	160	7.55	0.005	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0132	5.1	1.8
3M440	3/21/00@1111	N/R	N/R	N/R	N/R	N/R	N/R	122.0	3.5	N/R	N/R	N/R	N/R	364	542	160	7.43	0.005	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0147	8.6	<1.0
4M440	4/4/00@0750	62.1	15.5	27.1	8.3	N/R	193	114.0	3.8	N/R	N/R	0.52	16.7	357	544	159	7.46	0.005	N/R	N/R	N/R	N/R	0.03	N/R	<0.001	N/R	N/R	0.0165	13.2	<1.0
1M441	2/24/00@0816	61.5	14.7	25.7	8.6	<1.0	187	123.0	3.0	0.06	<0.10	0.54	15.7	329	529	154	7.65	0.008	<0.10	<0.005	<0.05	<0.05	0.03	<0.10	<0.001	<0.10	<0.01	0.015	6.4	<1.0
2M441	3/8/00@1436	N/R	N/R	N/R	N/R	N/R	N/R	118.0	4.0	N/R	N/R	N/R	N/R	353	528	153	7.59	0.008	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0129	3.9	1.3
3M441	3/20/00@1349	N/R	N/R	N/R	N/R	N/R	N/R	120.0	3.5	N/R	N/R	N/R	N/R	350	539	157	7.46	0.008	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0152	3.9	<1.0
4M441	4/4/00@0801	62.4	15.9	27.9	8.9	N/R	188	117.0	4.4	N/R	N/R	0.52	16.9	356	539	155	7.46	0.010	N/R	N/R	N/R	N/R	0.03	N/R	<0.001	N/R	N/R	0.0166	7.8	1.1
1M442	2/24/00@0804	63.6	15.5	25.6	8.1	<1.0	195	122.0	3.0	<0.05	<0.10	0.52	16.3	324	533	160	7.59	0.004	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.017	8.8	<1.0
2M442	3/8/00@1450	N/R	N/R	N/R	N/R	N/R	N/R	117.0	3.8	N/R	N/R	N/R	N/R	342	534	158	7.56	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0154	7.2	1.5
3M442	3/20/00@1338	N/R	N/R	N/R	N/R	N/R	N/R	120.0	2.8	N/R	N/R	N/R	N/R	357	540	161	7.45	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0172	14.7	<1.0
4M442	4/3/00@1422	64.1	16.6	27.6	7.9	N/R	196	111.0	3.1	N/R	N/R	0.51	16.9	347	540	161	7.48	0.004	N/R	N/R	N/R	N/R	0.03	N/R	<0.001	N/R	N/R	0.0198	6.4	<1.0
1M443	2/24/00@0750	62.7	14.7	25.5	8.3	<1.0	195	126.0	5.0	<0.05	<0.10	0.52	15.9	352	544	160	7.54	0.003	<0.10	<0.005	<0.05	<0.05	0.03	<0.10	<0.001	<0.10	<0.01	0.019	10.7	<1.0
2M443	3/8/00@1315	N/R	N/R	N/R	N/R	N/R	N/R	126.0	3.5	N/R	N/R	N/R	N/R	372	548	161	7.54	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0121	13.8	2.1
3M443	3/20/00@1142	N/R	N/R	N/R	N/R	N/R	N/R	126.0	3.3	N/R	N/R	N/R	N/R	361	553	160	7.37	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0138	10.6	<1.0
4M443	4/3/00@1414	66.1	16.5	28.3	8.2	N/R	197	118.0	1.9	N/R	N/R	0.53	17.0	351	551	162	7.45	0.003	N/R	N/R	N/R	N/R	0.04	N/R	<0.001	N/R	N/R	0.015	2.8	1.7
1M444	2/23/00@1341	61.1	14.5	28.6	9.5	<1.0	197	125.0	10.8(1)	<0.05	<0.10	0.49	16.1	358	542	162	7.81	0.002	<0.10	<0.005	<0.05	0.05	0.03	<0.10	<0.001	<0.10	<0.01	0.013	4.0	<1.0
2M444	3/8/00@1047	N/R	N/R	N/R	N/R	N/R	N/R	124.0	3.8	N/R	N/R	N/R	N/R	373	549	160	7.69	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.011	3.8	<1.0
3M444	3/20/00@1044	N/R	N/R	N/R	N/R	N/R	N/R	127.0	3.8	N/R	N/R	N/R	N/R	377	555	162	7.48	0.002	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0134	19.0	<1.0
4M444	4/3/00@1346	64.6	15.5	28.0	9.5	N/R	195	12.0	4.0	N/R	N/R	0.51	15.4	356	554	161	7.55	0.002	N/R	N/R	N/R	<0.05	0.03	N/R	<0.001	N/R	N/R	0.0139	7.2	4.9
1M445	2/23/00@1259	59.3	14.7	27.0	9.0	<1.0	192	127.0	6.8(1)	<0.05	<0.10	0.52	15.7	349	535	158	7.67	0.002	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.014	5.7	<1.0
2M445	3/8/00@1036	N/R	N/R	N/R	N/R	N/R	N/R	125.0	3.0	N/R	N/R	N/R	N/R	361	543	158	7.63	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0124	7.4	<1.0
3M445	3/20/00@1035	N/R	N/R	N/R	N/R	N/R	N/R	127.0	3.7	N/R	N/R	N/R	N/R	373	550	156	7.43	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0136	6.4	<1.0
4M445	4/3/00@1123	65.2	15.8	28.7	9.6	N/R	193	124.0	<1.0(1)	N/R	N/R	0.53	15.4	364	551	159	7.55	0.001	N/R	N/R	N/R	N/R	0.03	N/R	<0.001	N/R	N/R	0.0155	7.5	2.3
1M446	2/24/00@1021	60.7	14.8	26.2	8.9	<1.0	195	123.0	3.5	<0.05	<0.10	0.54	16.4	339	544	161	7.68	<0.001	<0.10	<0.005	<0.05	<0.05	0.03	<0.10	<0.001	<0.10	<0.01	0.021	28.1	<1.0
2M446	3/8/00@1327	N/R	N/R	N/R	N/R	N/R	N/R	121.0	2.6	N/R	N/R	N/R	N/R	360	538	163	7.67	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.018	29.8	1.4
3M446	3/20/00@1322	N/R	N/R	N/R	N/R	N/R	N/R	121.0	3.5	N/R	N/R	N/R	N/R	358	544	161	7.50	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0198	34.3	<1.0
4M446	4/3/00@1055	64.9	16.3	28.8	9.0	N/R	197	115.0	1.7	N/R	N/R	0.51	16.7	362	545	162	7.41	<0.001	N/R	N/R	N/R	N/R	0.04	N/R	<0.001	N/R	N/R	0.0221	23.1	2.1
1M447	2/25/00@0744	62.1	15.4	27.4	7.9	<1.0	194	122.0	4.8	<0.05	<0.10	0.49	16.7	332	533	160	7.57	<0.001	<0.10	<0.005	<0.05	0.11	0.02	<0.10	<0.001	<0.10	<0.01	0.019	148.0	2.1
2M447	3/8/00@1057	N/R	N/R	N/R	N/R	N/R	N/R	116.0	3.8	N/R	N/R	N/R	N/R	340	529	156	7.52	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.014	151.0	<1.0
3M447	3/20/00@0832	N/R	N/R	N/R	N/R	N/R	N/R	116.0	3.4	N/R	N/R	N/R	N/R	354	538	162	7.40	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0171	168.0	<1.0
4M447	4/3/00@0812	60.8	15.0	26.6	8.1	N/R	199	110.0	4.3	N/R	N/R	0.52	15.7	353	534	164	7.41	<0.001	N/R	N/R	N/R	0.11	0.03	N/R	<0.001	N/R	N/R	0.0176	157.0	<1.0
1M448	2/25/00@0755	61.7	15.6	28.0	8.1	<1.0	196	115.0	4.8	<0.05	<0.10	0.48	16.2	313	530	161	7.58	<0.001	<0.10	<0.005	<0.05	0.18	0.02	<0.10	<0.001	<0.10	<0.01	0.028	15.3	2.6
2M448	3/9/00@0850	N/R	N/R	N/R	N/R	N/R	N/R	113.0	3.3	N/R	N/R	N/R	N/R	346	525	162	7.59	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0272	15.2	1.5
3M448	3/20/00@1054	N/R	N/R	N/R	N/R	N/R	N/R	112.0	3.5	N/R	N/R	N/R	N/R	349	532	162	7.39	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0285	12.7	<1.0
4M448	4/3/00@0857	62.5	15.8	28.0	8.5	N/R	198	106.0	7.4(1)	N/R	N/R	0.50	15.7	340	531	163	7.40	<0.001	N/R	N/R	N/R	0.54	0.03	N/R	<0.001	N/R	N/R	0.0299	13.2	3.0
1M449	2/25/00@0806	58.3	14.9	27.4	8.4	<1.0	192	112.0	1.9	<0.05	<0.10	0.48	16.1	322	522	158	7.59	<0.001	<0.10	<0.005	<0.05	0.17	0.01	<0.10	<0.001	<0.10	<0.01	0.008	7.6	2.3
2M449	3/9/00@1009	N/R	N/R	N/R	N/R	N/R	N/R	106.0	3.1	N/R	N/R	N/R	N/R	333	517	163	7.63	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0082	9.2	<1.0
3M449	3/20/00@0820	N/R	N/R	N/R	N/R	N/R	N/R	108.0	3.5	N/R	N/R	N/R	N/R	337	523	163	7.36	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0079	12.6	1.1
4M449	4/3/00@0812	59.5	15.2	26.9	8.4	N/R	199	102.0	6.6(1)	N/R	N/R	0.50	15.6	332	520	164	7.43	<0.001	N/R	N/R	N/R	0.26	0.02	N/R	<0.001	N/R	N/R	0.0085	6.8	3.2
1M450	2/29/00@0636	64.4	16.4	28.5	8.8	<1.0	203	107.0	5.1	<0.05	<0.10	0.48	15.7	326	528	167	7.75	<0.001	<0.10	<0.005	<0.05	0.23	0.02	<0.10	<0.001	<0.10	<0.01	0.006	5.7	2.6
2M450	3/9/00@1249	N/R	N/R	N/R	N/R	N/R	N/R	106.0	3.8	N/R	N/R	N/R	N/R	338	524	168	7.80	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0048	3.9	<1.0
3M450	3/20/00@1231	N/R	N/R	N/R	N/R	N/R	N/R	107.0	3.7	N/R	N/R	N/R	N/R	347	530	167	7.59	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0046	6.6	<1.0
4M450	4/3/00@1111	59.2	14.9	27.0	9.5	N/R	202	105.0	6.9(1)	N/R	N/R	0.49	14.7	326	532	169	7.64	<0.001	N/R	N/R	N/R	0.58	0.02	N/R	<0.001	N/R	N/R	0.0049	2.4	1.4
1M451	2/25/00@0823	61.1	15.8	26.9	8.1	<1.0	192	106.0	4.7	0.05	<0.10	0.50	16.2	302	517	158	7.61	<0.001	<0.10	<0.005	<0.05	0.09	0.02	<0.10	<0.001	<0.10	<0.01	0.016	30.3	2.1
2M451	3/9/00@1112	N/R	N/R	N/R	N/R	N/R	N/R	106.0	3.5	N/R	N/R	N/R	N/R	340	512	162	7.57	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.016	17.7	3.1
3M451	3/21/00@1044	N/R	N/R	N/R	N/R	N/R	N/R	108.0	3.7	N/R	N/R	N/R	N/R	328	519	162	7.40	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0156	15.1	<1.0
4M451	4/3/00@1201	59.9	15.4	26.4	8.5	N/R	197	101.0	5.5	0.07	N/R	0.53	15.1	321	517	162	7.38	<0.001	N/R	N/R	N/R	0.13	0.02	N/R	<0.001	N/R	N/R	0.0186	16.0	2.0
1M452	2/25/00@1043	60.8	16.0	27.2	8.1	<1.0	195	104.0	3.4	<0.05	<0.10	0.50	16.2	294	510	161	7.59	0.001	<0.10	<0.005	<0.05	0.19	0.02	<0.10	<0.001	<0.10	<0.01	0.013	13.6	<1.0
2M452	3/9/00@1145	N/R	N/R	N/R	N/R	N/R	N/R	102.0	3.8	N/R	N/R	N/R	N/R	328	505	163	7.58	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0117	9.7	1.6
3M452	3/21/00@1330	N/R	N/R	N/R	N/R	N/R	N/R	101.0	4.0	N/R	N/R	N/R	N/R	330	510	160	7.37	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0112	33.5	<1.0
4M452	4/3/00@1211	58.6	15.3	26.2	8.5	N/R	200	96.4	5.5	N/R	N/R	0.52	14.9	322	510	164	7.41	0.001	N/R	N/R	N/R	0.20	0.02	N/R	<0.001	N/R	N/R	0.0137	6.6	1.8

Rio Algom Mining Corp.
Smith Ranch Project
Wellfield 4
Table L-2.1
M Wells

Well #	Date and Time Sampled	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	CO3 mg/L	HCO3 mg/L	SO4 mg/L	Cl mg/L	NH4 mg/L	NO3+NO2 mg/L	F mg/L	SiO2 mg/L	TDS mg/L	SC@25 µmho/cm	Alkalinity mg/L	pH std.units	As ug/L	B mg/L	Cd mg/L	Cr mg/L	Fe mg/L	Mn mg/L	Mo mg/L	Se mg/L	V mg/L	Zn mg/L	Unat mg/L	Ra226 pCi/L	Ra228 pCi/L
1M453	2/24/00@1453	59.6	15.8	27.4	8.3	<1.0	195	98.0	4.0	0.05	<0.10	0.49	16.8	287	499	161	7.59	<0.001	<0.10	<0.005	<0.05	0.15	0.01	<0.10	<0.001	<0.10	<0.01	0.011	19.4	<1.0
2M453	3/9/00@1259	N/R	N/R	N/R	N/R	N/R	N/R	94.6	3.5	N/R	N/R	N/R	N/R	327	495	162	7.62	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.01	6.6	<1.0
3M453	3/22/00@0943	N/R	N/R	N/R	N/R	N/R	N/R	98.5	2.4	N/R	N/R	N/R	N/R	316	502	162	7.40	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0109	6.6	<1.0
4M453	4/3/00@1224	57.3	14.9	26.1	8.5	N/R	199	90.9	4.1	0.11	N/R	0.52	15.0	313	499	164	7.42	<0.001	N/R	N/R	N/R	0.24	0.02	N/R	<0.001	N/R	N/R	0.0105	7.7	5.5
1M454	2/23/00@1438	51.1	13.8	24.3	7.7	<1.0	196	82.6	4.6	<0.05	<0.10	0.53	15.4	288	470	161	7.63	0.001	<0.10	<0.005	<0.05	0.20	0.01	<0.10	<0.001	<0.10	<0.01	0.012	8.3	1.5
2M454	3/8/00@1241	N/R	N/R	N/R	N/R	N/R	N/R	90.7	3.7	N/R	N/R	N/R	N/R	318	485	164	7.63	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.006	10.2	<1.0
3M454	3/20/00@1221	N/R	N/R	N/R	N/R	N/R	N/R	92.5	3.3	N/R	N/R	N/R	N/R	308	492	161	7.36	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0073	8.8	<1.0
4M454	4/3/00@1137	55.6	14.5	25.8	8.4	N/R	197	87.9	6.9(1)	N/R	N/R	0.52	14.7	304	491	162	7.47	0.001	N/R	N/R	N/R	<0.05	0.01	N/R	<0.001	N/R	N/R	0.007	6.6	4.3
1M455A	2/23/00@1358	51.0	13.9	24.4	7.6	<1.0	197	83.2	5.2	0.05	<0.10	0.52	15.3	294	476	162	7.60	0.001	<0.10	<0.005	<0.05	0.10	0.01	<0.10	<0.001	<0.10	<0.01	0.008	13.8	<1.0
2M455A	3/8/00@1212	N/R	N/R	N/R	N/R	N/R	N/R	85.3	3.5	N/R	N/R	N/R	N/R	307	473	163	7.59	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0062	10.3	<1.0
3M455A	3/20/00@1113	N/R	N/R	N/R	N/R	N/R	N/R	85.9	2.9	N/R	N/R	N/R	N/R	307	480	162	7.34	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0074	8.4	<1.0
4M455A	4/3/00@1145	54.5	14.6	25.4	8.2	N/R	198	83.6	2.7	0.08	N/R	0.54	14.7	298	480	163	7.44	0.002	N/R	N/R	N/R	0.22	0.02	N/R	<0.001	N/R	N/R	0.0079	7.4	1.5
1M456	2.23/00@1417	52.0	13.8	24.6	8.1	<1.0	197	90.9	5.4	<0.05	<0.10	0.49	15.3	297	490	162	7.61	0.001	<0.10	<0.005	<0.05	0.12	0.01	<0.10	<0.001	<0.10	<0.01	0.0097	11.4	<1.0
2M456	3/8/00@1021	N/R	N/R	N/R	N/R	N/R	N/R	81.4	3.1	N/R	N/R	N/R	N/R	305	468	164	7.64	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0071	8.3	<1.0
3M456	3/20/00@0906	N/R	N/R	N/R	N/R	N/R	N/R	82.8	3.6	N/R	N/R	N/R	N/R	301	471	161	7.50	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0089	9.6	<1.0
4M456	4/3/00@0821	53.2	14.2	25.2	8.1	N/R	195	77.1	3.2	N/R	N/R	0.55	15.0	281	472	161	7.45	0.002	N/R	N/R	N/R	0.08	0.01	N/R	<0.001	N/R	N/R	0.0074	6.3	1.2
1M457	2/23/00@1113	47.5	13.0	23.0	7.3	<1.0	195	77.3	4.1	0.05	<0.10	0.53	14.8	276	462	161	7.63	<0.001	<0.10	<0.005	<0.05	0.09	0.01	<0.10	<0.001	<0.10	<0.01	0.013	16.8	2.6
2M457	3/8/00@1007	N/R	N/R	N/R	N/R	N/R	N/R	77.8	3.3	N/R	N/R	N/R	N/R	296	459	160	7.65	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0082	11.6	1.7
3M457	3/20/00@0846	N/R	N/R	N/R	N/R	N/R	N/R	78.9	3.3	N/R	N/R	N/R	N/R	281	466	160	7.52	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0086	9.0	<1.0
4M457	4/3/00@0809	51.2	13.8	24.3	7.7	N/R	197	77.8	4.0	0.10	N/R	0.55	14.8	283	464	162	7.44	<0.001	N/R	N/R	N/R	0.03	0.01	N/R	<0.001	N/R	N/R	0.0098	11.9	1.7
1M458	2/23/00@1054	48.8	13.5	23.4	7.4	<1.0	193	82.6	5.0	<0.05	<0.10	0.52	15.4	284	464	159	7.59	<0.001	<0.10	<0.005	<0.05	0.18	0.01	<0.10	<0.001	<0.10	<0.01	0.018	46.5	3.2
2M458	3/8/00@0955	N/R	N/R	N/R	N/R	N/R	N/R	81.1	3.3	N/R	N/R	N/R	N/R	297	464	160	7.61	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0079	28.4	3.0
3M458	3/20/00@0847	N/R	N/R	N/R	N/R	N/R	N/R	80.2	3.1	N/R	N/R	N/R	N/R	302	468	160	7.50	<0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0093	26.4	2.3
4M458	4/3/00@0759	53.3	14.9	25.3	7.2	N/R	196	78.4	2.3	N/R	N/R	0.54	16.4	289	468	161	7.36	<0.001	N/R	<0.005	N/R	0.05	<0.01	N/R	<0.001	N/R	N/R	0.0096	41.1	2.9

Rio Algom Mining Corp.

Smith Ranch Project

Table L-2.2

M Wells

Parameter	Units	Mean	Five Std. Dev.	Mean + 5 Std. Dev.	Adjustmen	Upper Control Limit
Chloride	mg/L	3.5	0.8	7.5	15	18.5
Total Alkalinity	mg/L	158	20	178	N/A	178
Specific Conductivity	umhos/cm	508	185	693	N/A	693

Rio Algom Mining Corp.
Smith Ranch Project
Table L-2.3
M Wells
Upper Control Limit Calculated

1M401	477	3.0	162	3M415	521	2.7	156	1M430	488	4.0	159
2M401	483	3.1	159	4M415	518	1.4	155	2M430	495	2.7	157
3M401	478	3.1	162	1M416	557	2.0	155	3M430	490	3.1	159
4M401	476	2.8	161	2M416	556	2.4	157	4M430	476	3.6	158
1M402	455	4.0	156	3M416	542	3.1	157	1M431	427	4.0	117(1)
2M402	454	3.4	155	4M416	540	1.8	157	2M431	455	3.1	130(1)
3M402	449	3.4	156	1M417	553	8.0(1)	148	3M431	470	3.8	142(1)
4M402	448	3.5	157	2M417	559	5.1	149	4M431	466	3.9	148
1M403	431	5.0	152	3M417	547	4.5	154	1M432	498	4.0	157
2M403	441	4.1	156	4M417	544	2.2	153	2M432	500	2.7	157
3M403	434	4.1	155	1M418A	533	5.0	148	3M432	497	3.8	156
4M403	431	3.8	153	2M418A	557	3.1	152	4M432	490	3.9	157
1M404	438	5.0	160	3M418A	554	3.4	151	1M433	517	4.0	160
2M404	440	2.7	161	4M418A	549	2.5	151	2M433	517	3.1	158
3M404	435	3.4	159	1M419	555	4.0	154	3M433	513	3.8	160
4M404	432	2.8	160	2M419	569	3.1	160	4M433	503	3.0	158
1M405	444	5.0	158	3M419	557	3.1	159	1M434	506	4.0	159
2M405	444	3.8	159	4M419	554	1.6	156	2M434	506	3.1	158
3M405	438	3.8	159	1M420	555	3.0	150	3M434	500	3.4	161
4M405	436	3.2	160	2M420	562	2.4	152	4M434	499	4.3	159
1M406	440	4.0	158	3M420	563	2.4	155	1M435	528	2.9	157
2M406	443	3.4	159	4M420	547	3.0	156	2M435	521	3.3	159
3M406	438	2.7	158	1M421	561	3.0	159	3M435	528	2.6	160
4M406	436	3.4	159	2M421	568	2.4	159	4M435	529	2.8	160
1M407	451	4.0	154	3M421	562	2.4	159	1M436	535	3.8	160
2M407	459	3.4	157	4M421	551	2.0	159	2M436	528	3.5	159
3M407	453	2.7	157	1M422	554	4.0	157	3M436	541	2.8	162
4M407	452	4.4	159	2M422	562	2.7	157	4M436	536	4.4	158
1M408	439	5.0	156	3M422	558	2.7	157	1M437	534	2.4	158
2M408	451	3.8	142(1)	4M422	538	3.3	154	2M437	523	4.2	161
3M408	454	4.1	149	1M423	554	4.0	159	3M437	534	2.8	160
4M408	449	6.3(1)	147	2M423	557	2.7	158	4M437	534	3.5	158
1M409	463	4.0	153	3M423	554	2.4	159	1M438	505	3.7	145(1)
2M409	466	3.4	152	4M423	540	1.7	159	2M438	534	3.7	161
3M409	461	3.8	154	1M424	538	4.0	153	3M438	524	3.3	156
4M409	457	5.4	152	2M424	546	2.4	154	4M438	523	4.2	157
1M410	466	4.0	152	3M424	546	3.1	156	1M439	536	6.0(1)	159
2M410	469	3.4	149	4M424	531	3.2	157	2M439	509	3.8	152
3M410	465	3.4	153	1M425	541	4.0	154	3M439	541	3.5	159
4M410	457	3.9	152	2M425	545	3.8	155	4M439	541	2.9	160
1M411	474	6.0(1)	138(1)	3M425	538	3.1	156	1M440	540	5.0	157
2M411	478	2.4	154	4M425	526	3.7	156	2M440	539	3.8	160
3M411	469	3.4	154	1M426	534	4.0	158	3M440	542	3.5	160
4M411	466	3.2	155	2M426	539	3.1	157	4M440	544	3.8	159
1M412	486	4.0	148	3M426	535	3.4	157	1M441	529	3.0	154
2M412	491	3.1	151	4M426	521	2.7	155	2M441	528	4.0	153
3M412	481	3.4	154	1M427	509	4.0	157	3M441	539	3.5	157
4M412	479	3.6	155	2M427	512	3.1	156	4M441	539	4.4	155
1M413	488	3.0	149	3M427	508	3.8	158	1M442	533	3.0	160
2M413	499	3.4	150	4M427	494	3.4	157	2M442	534	3.8	158
3M413	489	3.4	154	1M428	508	5.0	158	3M442	540	2.8	161
4M413	489	1.8	155	2M428	513	3.1	158	4M442	540	3.1	161
1M414	499	6.0(1)	138(1)	3M428	510	3.4	159	1M443	544	5.0	160
2M414	504	4.8	146(1)	4M428	496	4.1	158	2M443	548	3.5	161
3M414	497	4.1	151	1M429A	510	4.0	158	3M443	553	3.3	160
4M414	498	4.1	153	2M429A	515	3.1	158	4M443	551	1.9	162
1M415	524	3.0	156	3M429A	513	3.4	159	1M444	542	10.8(1)	162
2M415	531	2.7	158	4M429A	498	5.4	158	2M444	549	3.8	160

Rio Algom Mining Corp.
Smith Ranch Project
Table L-2.3
M Wells
Upper Control Limit Calculated

Well #	SC@25 µmho/cm	Cl mg/L	Alkalinity mg/L	Well #	SC@25 µmho/cm	Cl mg/L	Alkalinity mg/L	Well #	SC@25 µmho/cm	Cl mg/L	Alkalinity mg/L
1M401	477	3.0	162	3M415	521	2.7	156	1M430	488	4.0	159
2M401	483	3.1	159	4M415	518	1.4	155	2M430	495	2.7	157
3M401	478	3.1	162	1M416	557	2.0	155	3M430	490	3.1	159
4M401	476	2.8	161	2M416	556	2.4	157	4M430	476	3.6	158
1M402	456	4.0	156	3M416	542	3.1	157	1M431	427	4.0	117(1)
2M402	454	3.4	155	4M416	540	1.8	157	2M431	455	3.1	130(1)
3M402	449	3.4	156	1M417	553	8.0(1)	148	3M431	470	3.8	142(1)
4M402	448	3.5	157	2M417	559	5.1	149	4M431	456	3.9	148
1M403	431	5.0	152	3M417	547	4.5	154	1M432	498	4.0	157
2M403	441	4.1	156	4M417	544	2.2	153	2M432	500	2.7	157
3M403	434	4.1	155	1M418A	533	5.0	148	3M432	497	3.8	156
4M403	431	3.8	153	2M418A	557	3.1	152	4M432	490	3.9	157
1M404	438	5.0	160	3M418A	554	3.4	151	1M433	517	4.0	160
2M404	440	2.7	161	4M418A	549	2.5	151	2M433	517	3.1	156
3M404	435	3.4	159	1M419	555	4.0	154	3M433	513	3.8	159
4M404	432	2.8	160	2M419	569	3.1	160	4M433	503	3.0	158
1M405	444	5.0	158	3M419	557	3.1	159	1M434	506	4.0	159
2M405	444	3.8	159	4M419	554	1.6	156	2M434	500	3.1	156
3M405	438	3.8	159	1M420	555	3.0	150	3M434	500	3.4	161
4M405	436	3.2	160	2M420	562	2.4	152	4M434	499	4.3	159
1M406	440	4.0	158	3M420	563	2.4	155	1M435	528	2.9	157
2M406	443	3.4	159	4M420	547	3.0	156	2M435	521	3.3	159
3M406	438	2.7	158	1M421	561	3.0	159	3M435	528	2.6	160
4M406	436	3.4	159	2M421	568	2.4	159	4M435	529	2.8	160
1M407	451	4.0	154	3M421	562	2.4	159	1M436	536	3.8	160
2M407	459	3.4	157	4M421	551	2.0	159	2M436	528	3.5	159
3M407	453	2.7	157	1M422	554	4.0	157	3M436	541	2.8	162
4M407	452	4.4	159	2M422	562	2.7	157	4M436	536	4.4	158
1M408	436	5.0	156	3M422	558	2.7	157	1M437	534	2.4	158
2M408	451	3.8	142(1)	4M422	538	3.3	154	2M437	523	4.2	161
3M408	454	4.1	149	1M423	554	4.0	159	3M437	534	2.8	160
4M408	449	6.3(1)	147	2M423	557	2.7	158	4M437	534	3.5	158
1M409	463	4.0	153	3M423	554	2.4	159	1M438	505	3.7	145(1)
2M409	466	3.4	152	4M423	540	1.7	159	2M438	534	3.7	161
3M409	461	3.8	154	1M424	538	4.0	153	3M438	524	3.3	159
4M409	457	5.4	152	2M424	545	2.4	154	4M438	523	4.2	157
1M410	466	4.0	152	3M424	546	3.1	156	1M439	536	6.3(1)	159
2M410	469	3.4	149	4M424	531	3.2	157	2M439	539	3.8	162
3M410	465	3.4	153	1M425	541	4.0	154	3M439	541	3.5	159
4M410	457	3.9	152	2M425	545	3.8	155	4M439	541	2.9	160
1M411	474	6.0(1)	138(1)	3M425	538	3.1	156	1M440	540	5.0	157
2M411	478	2.4	154	4M425	526	3.7	156	2M440	539	3.8	160
3M411	469	3.4	154	1M426	534	4.0	158	3M440	542	3.5	160
4M411	466	3.2	155	2M426	539	3.1	157	4M440	544	3.8	159
1M412	486	4.0	148	3M426	535	3.4	157	1M441	529	3.6	154
2M412	491	3.1	151	4M426	521	2.7	155	2M441	528	4.0	153
3M412	481	3.4	154	1M427	509	4.0	157	3M441	538	3.5	157
4M412	479	3.6	155	2M427	512	3.1	156	4M441	539	4.4	156
1M413	488	3.0	149	3M427	508	3.8	158	1M442	533	3.6	160
2M413	499	3.4	150	4M427	494	3.4	157	2M442	544	3.4	158
3M413	489	3.4	154	1M428	508	5.0	158	3M442	544	2.8	161
4M413	489	3.8	155	2M428	513	3.1	155	4M442	543	3.1	161
1M414	489	6.3(1)	138(1)	3M428	519	3.4	159	1M443	544	5.0	160
2M414	504	4.8	146(1)	4M428	496	4.1	155	2M443	548	3.5	161
3M414	497	4.1	157	1M429A	519	4.0	158	3M443	553	3.4	162
4M414	495	4.1	153	2M429A	515	3.1	158	4M443	551	3.9	162
1M415	524	3.0	156	3M429A	513	3.4	155	1M444	542	5.0(1)	160
2M415	531	2.7	154	4M429A	499	3.4	155	2M444	549	3.5	162

Rio Algom Mining Corp.
Smith Ranch Project
Table L-2.3
M Wells
Upper Control Limit Calculated

3M444	555	3.8	162	3M458	468	3.1	160
4M444	554	4.0	161	4M458	468	2.3	161
1M445	535	6.8(1)	158				
2M445	543	3.0	158	Maximum	569	5.5	169
3M445	550	3.7	156	Minimum	427	1.4	147
4M445	551	<1.0(1)	159	Count	232	220	224
1M446	544	3.5	161	K Factor	2.810	2.800	2.798
2M446	538	2.6	163	St. Dev.	37	0.8	4
3M446	544	3.5	161	K*St. Dev.	104	2.2	11
4M446	545	1.7	162	Mean	508	3.5	158
1M447	533	4.8	160	Upper Tol.	612	5.7	169
2M447	529	3.8	156	Lower Tol.	404	1.3	147
3M447	538	3.4	162				
4M447	534	4.3	164	Mean + 5 St. Dev.	693	7.5	178
1M448	530	4.8	161	15 mg/L + Mean	N/A	18.5	N/A
2M448	525	3.3	162	UCL	693	18.5	178
3M448	532	3.5	162				
4M448	531	7.4(1)	163				
1M449	522	1.9	158				
2M449	517	3.1	163				
3M449	523	3.5	163				
4M449	520	6.6(1)	164				
1M450	528	5.1	167				
2M450	524	3.8	168				
3M450	530	3.7	167				
4M450	532	6.9(1)	169				
1M451	517	4.7	158				
2M451	512	3.5	162				
3M451	519	3.7	162				
4M451	517	5.5	162				
1M452	510	3.4	161				
2M452	505	3.8	163				
3M452	510	4.0	160				
4M452	510	5.5	164				
1M453	499	4.0	161				
2M453	495	3.5	162				
3M453	502	2.4	162				
4M453	499	4.1	164				
1M454	470	4.6	161				
2M454	485	3.7	164				
3M454	492	3.3	161				
4M454	491	6.9(1)	162				
1M455A	476	5.2	162				
2M455A	473	3.5	163				
3M455A	480	2.9	162				
4M455A	480	2.7	163				
1M456	490	5.4	162				
2M456	468	3.1	164				
3M456	471	3.6	161				
4M456	472	3.2	161				
1M457	462	4.1	161				
2M457	459	3.3	160				
3M457	466	3.3	160				
4M457	464	4.0	162				
1M458	464	5.0	159				
2M458	464	3.3	160				

(1) - Outlier

Rio Algom Mining Corp.

Smith Ranch Project

Table L-2.3

M Wells

Upper Control Limit Calculated

Well #	SC@25 µmho/cm	Cl mg/L	Alkalinity mg/L
3M444	555	3.8	162
4M444	554	4.0	161
1M445	535	6.8(*)	158
2M445	543	3.0	158
3M445	550	3.7	156
4M445	551	<1.0(*)	159
1M446	544	3.5	161
2M446	538	2.6	163
3M446	544	3.5	161
4M446	545	1.7	162
1M447	533	4.8	160
2M447	529	3.8	156
3M447	538	3.4	162
4M447	534	4.3	164
1M448	530	4.3	161
2M448	525	3.3	162
3M448	532	3.5	162
4M448	531	7.4(*)	163
1M449	522	1.9	158
2M449	517	3.1	163
3M449	523	3.5	163
4M449	520	6.5(1)	164
1M450	528	5.1	167
2M450	524	3.8	168
3M450	530	3.7	167
4M450	532	6.9(1)	169
1M451	517	4.7	158
2M451	512	3.5	162
3M451	519	3.7	162
4M451	517	5.5	162
1M452	510	3.4	161
2M452	505	3.8	163
3M452	510	4.0	160
4M452	510	5.5	164
1M453	499	4.9	161
2M453	495	3.5	162
3M453	502	2.4	162
4M453	499	4.1	164
1M454	470	4.5	161
2M454	485	3.7	164
3M454	492	3.3	161
4M454	491	6.3(1)	162
1M455A	475	5.2	162
2M455A	473	3.5	163
3M455A	480	2.9	162
4M455A	480	2.7	163
1M456	496	5.4	162
2M456	468	3.1	164
3M456	471	3.6	161
4M456	472	3.2	161
1M457	462	4.1	161
2M457	459	3.3	160
3M457	466	3.3	160
4M457	464	4.0	162
1M458	464	5.0	160
2M458	464	3.3	160

Well #	SC@25 µmho/cm	Cl mg/L	Alkalinity mg/L
3M458	468	3.1	160
4M458	468	2.3	161
Maximum	569	5.5	169
Minimum	427	1.4	147
Count	232	220	224
K Factor	2.810	2.800	2.798
St. Dev.	37	0.8	4
K*St. Dev.	104	2.2	11
Mean	508	3.5	158
Upper Tol	612	5.7	169
Lower Tol	404	1.3	147
Mean + 5 St. Dev.	693	7.5	174
15 mg/L + Mean	N/A	18.5	N/A
UCL	693	18.5	173

(*) - Outlier

Rio Algom Mining Corp.

Smith Ranch Project

Wellfields 4 and 4A

Table L-3.1

MS Wells

	Date and Time	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NH4	NO3+NO2	F	SiO2	TDS	SC@25	Alkalinity	pH	As	B	Cd	Cr	Fe	Mn	Mo	Se	V	Zn	Unat	Ra226	Ra228
Well#	Sampled	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µmho/cm	mg/L	std.units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L
1MS401	11/10/1998@0747	67.0	18	19	7.0	<1.0	192	134	4.0	<0.05	<0.10	0.58	15.0	360	556	158	7.60	0.011	<0.10	<0.005	<0.05	0.06	0.04	<0.10	<0.001	<0.10	<0.01	0.0099	5.6	<1.0
2MS401	11/23/1998@1441	N/R	N/R	N/R	N/R	N/R	N/R	141	3.4	N/R	N/R	N/R	N/R	408	551	159	7.48	0.012	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0098	4.9	1.7
3MS401	12/8/1998@0758	N/R	N/R	N/R	N/R	N/R	N/R	141	2.4	N/R	N/R	N/R	N/R	401	548	159	6.99	0.009	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0105	2.5	<1.0
4MS401	12/30/1998@1022	65.5	17.9	20.9	6.4	<1.0	191	135	2.5	<0.05	<0.10	0.53	15.5	392	549	157	7.50	0.012	<0.10	<0.005	<0.05	<0.05	0.04	<0.10	<0.001	<0.10	<0.01	0.0099	1.7	<1.0
1MS402	11/10/1998@1517	63.0	17	20	7.4	<1.0	194	129	3.0	<0.05	<0.10	0.56	15.0	369	544	159	7.55	0.003	<0.10	<0.005	<0.05	<0.05	0.04	<0.10	<0.001	<0.10	<0.01	0.0101	1.8	3.8
2MS402	11/23/1998@1252	N/R	N/R	N/R	N/R	N/R	N/R	135	2.7	N/R	N/R	N/R	N/R	420	546	161	7.49	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0100	2.1	3.6
3MS402	12/7/1998@1516	N/R	N/R	N/R	N/R	N/R	N/R	139	2.7	N/R	N/R	N/R	N/R	418	537	161	7.41	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0112	1.4	<1.0
4MS402	12/30/1998@0900	66.7	17.9	20.4	6.7	<1.0	195	130	3.7	<0.05	<0.10	0.55	16.1	384	548	160	7.41	0.002	<0.10	<0.005	<0.05	<0.05	0.05	<0.10	<0.001	<0.10	<0.01	0.012	6.5	3.1
1MS403	11/10/1998@1230	61.0	16	20	7.0	<1.0	182	133	2.0	<0.05	<0.10	0.59	15.0	346	528	149	7.60	0.025	<0.10	<0.005	<0.05	<0.05	0.04	<0.10	<0.001	<0.10	<0.01	0.0096	3.4	<1.0
2MS403	11/23/1998@1136	N/R	N/R	N/R	N/R	N/R	N/R	135	1.7	N/R	N/R	N/R	N/R	405	531	154	7.43	0.022	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0091	3.2	4.4
3MS403	12/7/1998@1411	N/R	N/R	N/R	N/R	N/R	N/R	140	2.1	N/R	N/R	N/R	N/R	398	527	154	7.37	0.021	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0100	6.4	<1.0
4MS403	12/30/1998@0828	66.2	17.5	19.6	6.5	<1.0	193	130	1.0	<0.05	<0.10	0.56	16.3	377	536	158	7.30	0.020	<0.10	<0.005	<0.05	<0.05	0.05	<0.10	<0.001	<0.10	<0.01	0.0108	5.6	1.5
1MS404	11/10/1998@1200	66.0	11	20	9.0	<1.0	169	149	5.0	<0.05	<0.10	0.59	15.0	346	527	139(1)	7.79	0.008	<0.10	<0.005	<0.05	<0.05	0.01	<0.10	<0.001	<0.10	<0.01	0.0064	1.7	1.8
2MS404	11/23/1998@1125	N/R	N/R	N/R	N/R	N/R	N/R	131	3.1	N/R	N/R	N/R	N/R	394	535	150	7.57	0.009	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0069	4.5	6.5
3MS404	12/7/1998@1308	N/R	N/R	N/R	N/R	N/R	N/R	137	2.7	N/R	N/R	N/R	N/R	401	529	155	7.54	0.011	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0077	1.7	<1.0
4MS404	12/30/1998@0757	65.8	16.4	20.7	6.8	<1.0	194	127	2.7	0.07	<0.10	0.55	16.3	380	536	160	7.34	0.011	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0084	2.3	2.9
1MS405	11/10/1998@1619	60.0	17	21	7.7	<1.0	189	132	2.8	<0.05	<0.10	0.57	15.0	341	527	156	7.51	0.006	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0083	1.9	<1.0
2MS405	11/23/1998@1115	N/R	N/R	N/R	N/R	N/R	N/R	128	3.1	N/R	N/R	N/R	N/R	385	531	159	7.50	0.006	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0079	2.0	2.3
3MS405	12/7/1998@1235	N/R	N/R	N/R	N/R	N/R	N/R	132	3.8	N/R	N/R	N/R	N/R	398	524	156	7.40	0.007	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0092	2.8	<1.0
4MS405	12/30/1998@0727	62.8	17.4	20.8	6.9	<1.0	193	122	1.4	0.06	<0.10	0.57	15.9	359	532	158	7.30	0.007	<0.10	<0.005	<0.05	<0.05	0.03	<0.10	<0.001	<0.10	<0.01	0.0086	2.1	2.1
1MS406	11/9/1998@0928	57.0	16	21	7.2	<1.0	191	131	6.0	<0.05	<0.10	0.61	15.0	372	532	157	7.78	0.013	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0072	6.9	<1.0
2MS406	11/23/1998@0736	N/R	N/R	N/R	N/R	N/R	N/R	133	3.8	N/R	N/R	N/R	N/R	397	533	159	7.34	0.014	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0076	6.6	<1.0
3MS406	12/7/1998@0808	N/R	N/R	N/R	N/R	N/R	N/R	132	4.1	N/R	N/R	N/R	N/R	392	521	158	7.66	0.016	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0094	5.7	3.7
4MS406	12/29/1998@1557	60.7	16.6	21	7.2	<1.0	194	119	3.6	0.08	<0.10	0.54	15.8	366	525	159	7.50	0.014	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0090	7.0	3.3
1MS407	11/9/1998@0804	57.0	16	20	7.0	<1.0	188	116	6.0	<0.05	<0.10	0.57	15.0	352	515	155	7.58	0.003	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0077	2.5	4.2
2MS407	11/23/1998@0812	N/R	N/R	N/R	N/R	N/R	N/R	122	5.8	N/R	N/R	N/R	N/R	378	519	157	7.39	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0081	2.3	4.9
3MS407	12/7/1998@0857	N/R	N/R	N/R	N/R	N/R	N/R	126	4.8	N/R	N/R	N/R	N/R	362	515	156	7.62	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0095	7.4	4.7
4MS407	12/29/1998@1232	61.9	16.9	21.5	6.7	<1.0	191	115	3.9	0.14	<0.10	0.55	16.5	368	511	157	7.45	0.003	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0099	5.6	5.1
1MS408	11/9/1998@0730	61.0	17	23	8.0	<1.0	187	129	10.0(1)	0.10	<0.10	0.58	15.0	349	534	154	7.54	0.004	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0074	2.4	2.3
2MS408	11/23/1998@0848	N/R	N/R	N/R	N/R	N/R	N/R	124	8.9(1)	N/R	N/R	N/R	N/R	374	533	154	7.34	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0072	2.6	2.9
3MS408	12/7/1998@0939	N/R	N/R	N/R	N/R	N/R	N/R	128	6.5	N/R	N/R	N/R	N/R	317	523	156	7.62	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0087	2.9	2.5
4MS408	12/29/1998@1244	57.8	15.4	20.6	6.6	<1.0	190	115	5.1	0.07	<0.10	0.54	15.1	364	524	156	7.31	0.005	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0097	3.8	1.9
1MS409	11/9/1998@0856	60.0	17	22	7.0	<1.0	193	129	3.0	<0.05	<0.10	0.59	16.0	362	523	159	7.53	0.006	<0.10	<0.005	<0.05	<0.05	0.03	<0.10	<0.001	<0.10	<0.01	0.0094	2.9	4.5
2MS409	11/23/1998@0928	N/R	N/R	N/R	N/R	N/R	N/R	130	2.4	N/R	N/R	N/R	N/R	374	525	159	7.40	0.005	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0097	2.5	3.6
3MS409	12/7/1998@1106	N/R	N/R	N/R	N/R	N/R	N/R	130	3.1	N/R	N/R	N/R	N/R	385	518	159	7.34	0.003	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0102	3.3	<1.0
4MS409	12/29/1998@1347	63.6	17.1	21.7	6.7	<1.0	195	122	1.7	<0.05	<0.10	0.56	16.5	362	524	160	7.25	0.005	<0.10	<0.005	<0.05	<0.05	0.03	<0.10	<0.001	<0.10	<0.01	0.0101	3.1	2.9
1MS412	2/25/2000@1145	67.8	17.9	24.7	8.6	<1.0	193	134	1.6	<0.05	<0.10	0.57	16.4	348	556	159	7.60	0.004	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.010	8.7	2.8
2MS412	3/10/2000@1146	N/R	N/R	N/R	N/R	N/R	N/R	127	2.4	N/R	N/R	N/R	N/R	344	550	162	7.64	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.009	11.3	2.9
3MS412	3/22/2000@758	N/R	N/R	N/R	N/R	N/R	N/R	134	3.1	N/R	N/R	N/R	N/R	352	558	161	7.58	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0104	17.2	<1.0
4MS412	4/3/2000@733	67.3	18.3	24.8	8.6	N/R	193	128	5.7	N/R	N/R	0.57	17.2	373	556	159	7.55	0.003	N/R	N/R	N/R	N/R	0.03	N/R	<0.001	N/R	N/R	0.0101	7.8	2.4
1MS413	2/25/2000@1233	72.6	13.5	26.2	9.4	<1.0	193	133	2.9	<0.05	<0.10	0.5	15.5	370	557	159	7.84	0.010	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	0.01	0.009	5.0	6.1
2MS413	3/10/2000@1309	N/R	N/R	N/R	N/R	N/R	N/R	131	2.1	N/R	N/R	N/R	N/R	363	553	160	7.83	0.009	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.008	28.0	5.8
3MS413	3/22/2000@748	N/R	N/R	N/R	N/R	N/R	N/R	131	2.8	N/R	N/R	N/R	N/R	371	563	161	7.68	0.009	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0105	4.6	6.8
4MS413	4/5/2000@740	65.7	15.6	24.6	8.5	N/R	194	126	3.4	N/R	N/R	0.51	15.7	339	561	160	7.64	0.008	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	<0.01	0.0091	16.7	2.0
1MS414	2/24/2000@1527	70.8	17.6	26.1	8.3	<1.0	192	144	3.5	<0.05	<0.10	0.53	17.4	344	563	158	7.69	0.005	<0.10	<0.005	<0.05	<0.05	0.01	<0.10	<0.001	<0.10	<0.01	0.010	11.8	4.0
2MS414	3/10/00@1036	N/R	N/R	N/R	N/R	N/R	N/R	133	2.4	N/R	N/R	N/R	N/R	352	554	159	7.72	0.005	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.009	7.8	2.3
3MS414	3/22/2000@734	N/R	N/R	N/R	N/R	N/R	N/R	138	3.1	N/R	N/R	N/R	N/R	357	564	160	7.65	0.005	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0143	2.7	2.4
4MS414	4/4/2000@1417	68.6	18.6	26	8.2	N/R	193	129	2.3	N/R	N/R	0.56	16.6	378	570	159	7.50	0.005	N/R	N/R	N/R	N/R	0.02	N/R	<0.001	N/R	N/R	0.0111	21.7	3.1
1MS415	2/24/2000@1350	66.7	17.3	24.2	7.7	<1.0	193	138	3.0	<0.05	<0.10	0.63	16.8	355	561	159	7.60	0.003	<0.10	<0.005	<0.05	<0.05	0.03	<0.10	<0.001	<0.10	<0.01	0.010	24.9	<1.0
2MS415	3/9/2000@1435	N/R	N/R	N/R	N/R	N/R	N/R	135	3.3	N/R	N/R	N/R	N/R	380	563	160	7.56	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0097	5.9	2.3
3MS415	3/21/2000@1058	N/R	N/R	N/R	N/R	N/R	N/R	137	3.3	N/R	N/R	N/R	N/R	372	571	158	7.44	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0102	24.0	4.2
4MS415	4/4/2000@1147	69.9	18.4	26.1	8.1	N/R	194	132	6.9	N/R	N/R	0.61	17.0	375	571	160	7.45	0.004	N/R	N/R	N/R	N/R	0.03	N/R	<0.001	N/R	N/R	0.0105	5.1	4.1

Rio Algom Mining Corp.

Smith Ranch Project

Wellfields 4 and 4A

Table L-3.1

MS Wells

Well#	Date and Time Sampled	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	CO3 mg/L	HCO3 mg/L	SO4 mg/L	Cl mg/L	NH4 mg/L	NO3+NO2 mg/L	F mg/L	SiO2 mg/L	TDS mg/L	SC@25 µmho/cm	Alkalinity mg/L	pH std.units	As mg/L	B mg/L	Cd mg/L	Cr mg/L	Fe mg/L	Mn mg/L	Mo mg/L	Se mg/L	V mg/L	Zn mg/L	Unat mg/L	Ra226 pCi/L	Ra228 pCi/L
1MS416	2/24/2000@1122	67.6	16.7	24.9	7.5	<1.0	192	138	3.0	<0.05	<0.10	0.62	16.9	359	557	158	7.56	0.004	<0.10	<0.005	<0.05	<0.05	0.03	<0.10	<0.001	<0.10	<0.01	0.010	2.8	1.9
2MS416	3/9/2000@1407	N/R	N/R	N/R	N/R	N/R	N/R	138	3.1	N/R	N/R	N/R	N/R	385	564	159	7.53	0.005	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0097	5.7	3.8
3MS416	3/21/2000@846	N/R	N/R	N/R	N/R	N/R	N/R	140	3.3	N/R	N/R	N/R	N/R	392	574	159	7.51	0.004	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0104	4.9	1.7
4MS416	4/4/2000@1110	69.2	17.4	26.4	8.2	N/R	192	130	4.4	N/R	N/R	0.62	16.3	383	568	158	7.40	0.005	N/R	N/R	N/R	N/R	0.03	N/R	<0.001	N/R	N/R	0.011	4.1	2.1
1MS417	2/24/2000@1101	68.5	16.9	24.5	7.6	<1.0	195	140	3.0	<0.05	<0.10	0.64	17.0	363	563	160	7.57	0.001	<0.10	<0.005	<0.05	<0.05	0.03	<0.10	<0.001	<0.10	<0.01	0.018	5.3	3.1
2MS417	3/9/2000@1340	N/R	N/R	N/R	N/R	N/R	N/R	139	3.8	N/R	N/R	N/R	N/R	396	569	161	7.56	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0098	2.7	4.7
3MS417	3/21/2000@820	N/R	N/R	N/R	N/R	N/R	N/R	140	3.5	N/R	N/R	N/R	N/R	395	526	161	7.47	0.001	N/R	N/R	N/R	N/R	N/R	N/R	<0.001	N/R	N/R	0.0098	5.8	7.2
4MS417	4/4/2000@1228	71.5	17.7	26.4	0.3	N/R	195	131	5.3	N/R	N/R	0.62	16.7	383	577	161	7.44	0.001	N/R	N/R	N/R	N/R	0.04	N/R	<0.001	N/R	N/R	0.0112	5.5	7.5

(1) - Outlier For Cl, SC@25, or Alkalinity

Rio Algom Mining Corp.

Smith Ranch Project
Wellfields 4 and 4A
Table L-3.2
MS Wells

Parameter	Units	Mean	Five Std. Dev.	Mean + 5 Std. Dev.	Adjustment	Upper Control Limit
Chloride	mg/L	3.4	6.5	9.9	15	18.4
Total Alkalinity	mg/L	158	15	173	N/A	173
Specific Conductivity	umhos/cm	543	90	633	N/A	633

Rio Algom Mining Corp.

Smith Ranch Project

Wellfields 4 and 4A

Table L-3.3

MS Wells

Upper Control Limits Calculated

Well #	SC@25 umoh/cm	Chloride mg/L	Alkalinity mg/L
1MS401	556	4.0	158
2MS401	551	3.4	159
3MS401	548	2.4	159
4MS401	549	2.5	157
1MS402	544	3.0	159
2MS402	546	2.7	161
3MS402	537	2.7	161
4MS402	548	3.7	160
1MS403	528	2.0	149
2MS403	531	1.7	154
3MS403	527	2.1	154
4MS403	536	1.0	158
1MS404	527	5.0	139(1)
2MS404	535	3.1	150
3MS404	529	2.7	155
4MS404	536	2.7	160
1MS405	527	2.8	156
2MS405	531	3.1	159
3MS405	524	3.8	156
4MS405	532	1.4	158
1MS406	532	6.0	157
2MS406	533	3.8	159
3MS406	521	4.1	158
4MS406	525	3.6	159
1MS407	515	6.0	155
2MS407	519	5.8	157
3MS407	515	4.8	156
4MS407	511	3.9	157
1MS408	534	10.0(1)	154
2MS408	533	8.9(1)	154
3MS408	523	6.5	156
4MS408	524	5.1	156
1MS409	523	3.0	159
2MS409	525	2.4	159
3MS409	518	3.1	159
4MS409	524	1.7	160
1MS412	556	1.6	159
2MS412	550	2.4	162
3MS412	558	3.1	161
4MS412	556	5.7	159
1MS413	557	2.9	159
2MS413	553	2.1	160
3MS413	563	2.8	161
4MS413	561	3.4	160
1MS414	563	3.5	158
2MS414	554	2.4	159
3MS414	564	3.1	160
4MS414	570	2.3	159
1MS415	561	3.0	159
2MS415	563	3.3	160
3MS415	571	3.3	158
4MS415	571	6.9	160
1MS416	557	3.0	158
2MS416	564	3.1	159
3MS416	574	3.3	159
4MS416	568	4.4	158
1MS417	563	3.0	160
2MS417	569	3.8	161
3MS417	526	3.5	161
4MS417	577	5.3	161

Maximum	577	6.9	162
Minimum	511	1.0	149
Count	60	58	59
K Factor	3.066	3.077	3.072
St. Dev.	18	1.3	3
K*St. Dev.	55	4.0	9
Mean	543	3.4	158
Up. Tol.	598	7.4	167
Low. Tol.	488	-0.6	149
Mean + 5 St. Dev.	633	9.9	173
15 mg/L + Mean		18.4	
UCL	633	18.4	173

(1) - Outlier

Rio Algom Mining Corp.

Smith Ranch Project

Wellfields 4 and 4A

Table L-4.1

MD Wells

	Date and Time	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NH4	NO3+NO2	F	SiO2	TDS	SC@25	Alkalinity	pH	As	B	Cd	Cr	Fe	Mn	Mo	Se	V	Zn	Unat	Ra226	Ra228
Well #	Sampled	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µmho/cm	mg/L	std.units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L
1MD401	11/10/1998@1009	50.0	15.0	22.0	7.0	<1.0	185	102.0	4.0	0.11	<0.10	0.57	14.0	321	491	152	7.76	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	<0.0003	5.0	<1.0
2MD401	11/23/1998@1501	N/A	N/A	N/A	N/A	N/A	N/A	104.0	3.4	N/A	N/A	N/A	N/A	358	490	152	7.69	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0004	7.8	<1.0
3MD401	12/8/1998@0813	N/A	N/A	N/A	N/A	N/A	N/A	112.0	4.1	N/A	N/A	N/A	N/A	359	491	154	7.11	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0005	6.6	<1.0
4MD401	12/30/1998@1102	52.2	16.5	23.0	7.3	<1.0	188	105.0	3.4	0.11	<0.10	0.53	14.3	362	495	155	7.68	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0007	8.2	<1.0
1MD402	11/10/1998@1601	51.0	16.0	23.0	8.0	<1.0	187	103.0	5.0	0.13	<0.10	0.56	13.0	277	486	153	7.65	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	<0.0003	1.7	<1.0
2MD402	11/23/1998@1348	N/A	N/A	N/A	N/A	N/A	N/A	106.0	3.4	N/A	N/A	N/A	N/A	355	494	157	7.69	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	<0.0003	3.4	3.7
3MD402	12/7/1998@1525	N/A	N/A	N/A	N/A	N/A	N/A	110.0	4.5	N/A	N/A	N/A	N/A	342	487	155	7.62	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0006	3.9	<1.0
4MD402	12/30/1998@0909	52.7	16.6	23.2	7.4	<1.0	192	104.0	4.1	0.15	<0.10	0.56	14.0	328	495	157	7.60	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0009	2.6	3.5
1MD403	11/10/1998@1347	51.0	15.0	23.0	8.0	<1.0	189	106.0	6.0(1)	0.16	<0.10	0.57	13.0	309	488	156	7.72	0.015	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0004	1.0	2.7
2MD403	11/23/1998@1203	N/A	N/A	N/A	N/A	N/A	N/A	104.0	4.8	N/A	N/A	N/A	N/A	338	496	157	7.59	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0012	6.9	2.3
3MD403	12/7/1998@1422	N/A	N/A	N/A	N/A	N/A	N/A	106.0	3.8	N/A	N/A	N/A	N/A	369	490	157	7.53	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0008	5.2	<1.0
4MD403	12/30/1998@0837	53.2	16.2	23.6	7.4	<1.0	192	101.0	3.9	0.14	<0.10	0.56	13.4	331	498	158	7.52	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0007	2.8	1.6
1MD404B	11/10/1998@1321	50.0	15.0	24.0	8.0	<1.0	188	107.0	4.0	0.16	<0.10	0.58	13.0	315	493	154	7.64	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	<0.0003	2.9	<1.0
2MD404B	11/23/1998@1331	N/A	N/A	N/A	N/A	N/A	N/A	107.0	3.8	N/A	N/A	N/A	N/A	355	498	157	7.51	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	<0.0003	3.0	<1.0
3MD404B	12/7/1998@1320	N/A	N/A	N/A	N/A	N/A	N/A	112.0	4.1	N/A	N/A	N/A	N/A	354	492	156	7.47	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0006	1.7	<1.0
4MD404B	12/30/1998@0815	52.5	16.5	23.9	7.2	<1.0	193	99.7	3.4	0.15	<0.10	0.53	13.4	340	501	158	7.43	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0006	4.4	1.3
1MD405	11/10/1998@1703	51.0	16.2	24.0	7.0	<1.0	194	107.0	4.0	0.13	<0.10	0.56	12.9	296	499	159	7.60	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0022	1.7	<1.0
2MD405	11/23/1998@1149	N/A	N/A	N/A	N/A	N/A	N/A	104.0	4.5	N/A	N/A	N/A	N/A	367	500	163	7.66	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0026	3.5	<1.0
3MD405	12/7/1998@1246	N/A	N/A	N/A	N/A	N/A	N/A	107.0	4.8	N/A	N/A	N/A	N/A	350	491	160	7.60	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.002	3.9	<1.0
4MD405	12/30/1998@0737	52.7	16.5	24.9	7.3	<1.0	195	100.0	3.8	0.15	<0.10	0.52	13.9	340	496	160	7.51	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0018	2.4	2.1
1MD406	11/9/1998@0840	48.0	16.0	29.0	8.0	<1.0	171	127.0	7.0(1)	0.21	<0.10	0.59	13.0	355	509	140(1)	7.72	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0008	8.2	1.7
2MD406	11/23/1998@1616	N/A	N/A	N/A	N/A	N/A	N/A	121.0	5.1	N/A	N/A	N/A	N/A	429	519	150	7.51	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0007	3.7	<1.0
3MD406	12/7/1998@0823	N/A	N/A	N/A	N/A	N/A	N/A	123.0	4.1	N/A	N/A	N/A	N/A	363	521	154	7.71	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0029	3.6	<1.0
4MD406	12/29/1998@1701	53.9	17.3	27.7	7.2	<1.0	193	117.0	3.5	0.30	<0.10	0.54	14.3	355	524	159	7.49	<0.001	<0.10	<0.005	<0.05	0.12a(1)	0.03	<0.10	<0.001	<0.10	<0.01	0.0027	5.5	1.3
1MD407	11/9/1998@0941	40.0	14.0	24.0	6.4	<1.0	188	124.0	7.0(1)	0.21	<0.10	0.55	13.0	327	495	155	7.71	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	<0.0003	3.4	<1.0
2MD407	11/23/1998@0832	N/A	N/A	N/A	N/A	N/A	N/A	108.0	4.1	N/A	N/A	N/A	N/A	347	498	157	7.51	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0005	1.7	2.5
3MD407	12/7/1998@0922	N/A	N/A	N/A	N/A	N/A	N/A	110.0	4.8	N/A	N/A	N/A	N/A	341	492	158	7.77	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.001	1.8	<1.0
4MD407	12/29/1998@1333	50.2	16.4	27.2	7.2	<1.0	193	100.0	4.3	0.97	<0.10	0.52	13.7	322	493	159	7.41	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0007	3.1	2.4
1MD408	11/10/1998@1726	50.0	16.0	27.0	8.0	<1.0	193	100.0	6.0(1)	0.19	<0.10	0.48	14.0	308	492	158	7.70	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	<0.0003	0.7	<1.0
2MD408	11/23/1998@0911	N/A	N/A	N/A	N/A	N/A	N/A	98.2	5.1	N/A	N/A	N/A	N/A	337	494	160	7.68	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	<0.0003	1.3	<1.0
3MD408	12/7/1998@1046	N/A	N/A	N/A	N/A	N/A	N/A	102.0	5.1	N/A	N/A	N/A	N/A	360	484	158	7.62	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0005	1.7	<1.0
4MD408	12/29/1998@1310	50.8	16.1	26.3	7.5	<1.0	195	95.1	4.4	0.21	<0.10	0.47	13.3	333	490	160	7.50	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0005	1.4	2.1
1MD409	11/9/1998@1716	44.0	14.1	26.0	7.7	<1.0	180	100.0	4.0	0.17	<0.10	0.47	12.2	292	462	148	7.66	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.0005	2.5	<1.0
2MD409	11/23/1998@0940	N/A	N/A	N/A	N/A	N/A	N/A	97.6	4.8	N/A	N/A	N/A	N/A	329	479	156	7.69	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	<0.0003	1.1	2.1
3MD409	12/7/1998@1117	N/A	N/A	N/A	N/A	N/A	N/A	102.0	4.1	N/A	N/A	N/A	N/A	346	475	158	7.75	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0006	3.1	<1.0
4MD409	12/29/1998@1356	48.7	14.9	25.6	7.2	<1.0	193	88.9	3.4	0.13	<0.10	0.43	12.6	313	480	159	7.60	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0018	6.0	1.3
1MD410	3/23/1999@1421	55.7	17.7	24.7	7.3	<1.0	196	98.0	8.3(1)	0.23	<0.10	0.54	13.4	343	524	161	7.65	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0011	3.7	<1.0
2MD410	4/9/1999@1416	N/A	N/A	N/A	N/A	N/A	N/A	110.0	3.8	N/A	N/A	N/A	N/A	321	519	155	7.69	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0005	2.6	2.8
3MD410	4/22/1999@1221	N/A	N/A	N/A	N/A	N/A	N/A	106.0	4.1	N/A	N/A	N/A	N/A	333	521	151	7.63	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0006	2.4	1.9
4MD410	5/6/1999@1306	107.0	N/A	N/A	N/A	N/A	N/A	107.0	4.4	N/A	N/A	N/A	N/A	335	521	153	7.52	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0058	9.0	<1.0
1MD411	8/14/1999@1458	61.8	19.7	25.0	9.7	2.8	190	112.0	4.7	0.18	0.12	0.60	16.0	357	528	160	7.68	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0115	6.6	1.8
2MD411	8/27/1999@1104	N/A	N/A	N/A	N/A	N/A	N/A	109.0	4.5	N/A	N/A	N/A	N/A	340	520	142(1)	7.68	0.002	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0082	6.8	3.0
3MD411	9/10/1999@1444	N/A	N/A	N/A	N/A	N/A	N/A	113.0	4.5	N/A	N/A	N/A	N/A	352	525	163	7.95	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0081	2.3	<1.0
4MD411	9/24/1999@1544	67.0	20.0	26.0	12.0	<1.0	197	111.0	3.1	0.10	<0.10	0.56	14.0	338	530	162	8.13	<0.001	N/A	N/A	N/A	N/A	0.02	N/A	<0.001	N/A	N/A	0.0023	2.1	6.0
1MD412	2/25/2000@1153	56.7	17.2	29.7	8.1	<1.0	187	115.0	4.4	0.16	<0.10	0.53	13.7	323	524	154	7.71	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.002	5.5	<1.0
2MD412	3/10/2000@1243	N/A	N/A	N/A	N/A	N/A	N/A	110.0	4.2	N/A	N/A	N/A	N/A	315	520	157	7.73	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	<0.0003	14.2	1.5
3MD412	3/22/2000@825	N/A	N/A	N/A	N/A	N/A	N/A	113.0	3.3	N/A	N/A	N/A	N/A	318	526	158	7.58	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0005	9.3	<1.0
4MD412	4/4/2000@901	58.4	19.1	31.3	8.5	N/A	191	116.0	3.0	N/A	N/A	0.56	15.0	321	526	157	7.52	<0.001	N/A	N/A	N/A	N/A	0.02	N/A	<0.001	N/A	N/A	0.0005	29.0	1.5
1MD413	2/25/2000@1131	56.9	15.8	31.0	9.2	<1.0	183	116.0	5.2	0.16	<0.10	0.52	13.5	323	523	151	7.82	<0.001	<0.10	<0.005	<0.05	<0.05	0.01	<0.10	<0.001	<0.10	<0.01	0.007	19.1	1.8
2MD413	3/10/2000@1210	N/A	N/A	N/A	N/A	N/A	N/A	110.0	3.5	N/A	N/A	N/A	N/A	316	519	152	7.79	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0004	5.4	<1.0
3MD413	3/22/2000@814	N/A	N/A	N/A	N/A	N/A	N/A	113.0	4.7	N/A	N/A	N/A	N/A	327	525	155	7.64	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	<0.0003	3.9	2.1
4MD413	4/5/2000@748	57.0	17.3	31.2	8.5	N/A	189	108.0	4.8	0.21	N/A	0.53	14.5	286	525	156	7.62	<0.001	N/A	N/A	N/A	N/A	0.05	N/A	<0.001	N/A	N/A	0.0004	6.6	2.9

Rio Algom Mining Corp.
Smith Ranch Project
Wellfields 4 and 4A
Table L-4.1
MD Wells

1MD414	2/24/2000@1519	54.1	16.3	30.0	8.6	<1.0	190	112.0	6.5(1)	0.14	<0.10	0.49	13.7	306	521	156	7.71	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.001	4.2	2.9
2MD414	3/10/2000@1113	N/A	N/A	N/A	N/A	N/A	N/A	106.0	3.6	N/A	N/A	N/A	N/A	319	507	159	7.72	<.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0006	4.1	<1.0
3MD414	3/22/2000@836	N/A	N/A	N/A	N/A	N/A	N/A	109.0	3.5	N/A	N/A	N/A	N/A	316	519	159	7.56	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0008	2.9	<1.0
4MD414	4/4/2000@1425	54.7	17.2	30.6	8.3	N/A	192	103.0	5.5	N/A	N/A	0.51	13.6	333	522	158	7.54	<0.001	N/A	N/A	N/A	N/A	0.02	N/A	<0.001	N/A	N/A	<0.0003	7.5	<1.0
1MD415	2/24/2000@1357	52.7	16.1	28.8	8.2	<1.0	192	107.0	4.4	0.15	<0.10	0.53	14.1	313	522	158	7.72	<0.001	<0.10	<0.005	<0.05	<0.05	0.02	<0.10	<0.001	<0.10	<0.01	0.0009	11.2	<1.0
2MD415	3/9/00@1512	N/A	N/A	N/A	N/A	N/A	N/A	107.0	4.2	N/A	N/A	N/A	N/A	323	515	159	7.70	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	<0.0003	5.2	1.5
3MD415	3/21/2000@1134	N/A	N/A	N/A	N/A	N/A	N/A	110.0	4.3	N/A	N/A	N/A	N/A	335	521	159	7.55	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	<0.0003	10.7	<1.0
4MD415	4/4/2000@1206	54.5	17.0	30.3	8.4	N/A	193	103.0	4.1	N/A	N/A	0.52	13.7	332	524	159	7.54	<0.001	N/A	N/A	N/A	N/A	0.03	N/A	<0.001	N/A	N/A	0.0004	2.5	<1.0
1MD416	2/24/2000@1200	52.6	15.1	28.4	7.4	<1.0	193	107.0	4.3	0.15	<0.10	0.50	13.8	308	518	159	7.79	<0.001	<0.10	<0.005	<0.05	<0.05	0.01	<0.10	<0.001	<0.10	<0.01	0.0003	6.5	<1.0
2MD416	3/9/2000@1452	N/A	N/A	N/A	N/A	N/A	N/A	105.0	3.8	N/A	N/A	N/A	N/A	335	512	161	7.73	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	<0.0003	12.3	1.7
3MD416	3/21/2000@834	N/A	N/A	N/A	N/A	N/A	N/A	105.0	4.3	N/A	N/A	N/A	N/A	337	516	160	7.60	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	<0.0003	3.1	7.5
4MD416	4/4/2000@1157	55.0	16.7	30.4	7.9	N/A	195	98.5	1.9(1)	N/A	N/A	0.48	14.0	319	518	160	7.55	<0.001	N/A	N/A	N/A	N/A	0.02	N/A	<0.001	N/A	N/A	0.0006	14.4	4.1
1MD417	2/24/2000@1134	54.7	14.6	28.8	7.8	<1.0	194	104.0	4.7	0.11	<0.10	0.44	14.5	309	517	160	7.81	<0.001	<0.10	<0.005	<0.05	<0.05	<0.01	<0.10	<0.001	<0.10	<0.01	0.001	8.5	<1.0
2MD417	3/9/2000@1417	N/A	N/A	N/A	N/A	N/A	N/A	106.0	4.5	N/A	N/A	N/A	N/A	332	512	160	7.80	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0003	2.8	<1.0
3MD417	3/21/2000@828	N/A	N/A	N/A	N/A	N/A	N/A	105.0	4.2	N/A	N/A	N/A	N/A	332	517	161	7.57	<0.001	N/A	N/A	N/A	N/A	N/A	N/A	<0.001	N/A	N/A	0.0004	19.5	1.4
4MD417	4/4/2000@1351	55.4	15.6	30.3	8.0	N/A	195	98.5	2.4(1)	N/A	N/A	0.43	14.1	322	520	161	7.63	<0.001	N/A	N/A	N/A	N/A	0.02	N/A	<0.001	N/A	N/A	0.0004	3.9	<1.0

(1) - Outlier For Cl, SC@25, or Alkalinity

Rio Algom Mining Corp.

Smith Ranch Project

Wellfields 4 and 4A

Table L-4.2

MD Wells

Parameter	Units	Mean	Five Std. Dev.	Mean + 5 Std. Dev.	Adjustment	Upper Control Limit
Chloride	mg/L	4.2	3.0	7.2	15	19.2
Total Alkalinity	mg/L	157	15	172	N/A	172
Specific Conductivity	umhos/cm	506	80	586	N/A	586

Rio Algom Mining Corp.

Smith Ranch Project

Wellfields 4 and 4A

Table L-4.3

MD Wells

Upper Control Limit Calculations

Well #	SC@25 umoh/cm	Chloride mg/L	Alkalinity mg/L	Well #	SC@25 umoh/cm	Chloride mg/L	Alkalinity mg/L
1MD401	491	4.0	152	1MD412	524	4.4	154
2MD401	490	3.4	152	2MD412	520	4.2	157
3MD401	491	4.1	154	3MD412	526	3.3	158
4MD401	495	3.4	155	4MD412	526	3.0	157
1MD402	486	5.0	153	1MD413	523	5.2	151
2MD402	494	3.4	157	2MD413	519	3.5	152
3MD402	487	4.5	155	3MD413	525	4.7	155
4MD402	495	4.1	157	4MD413	525	4.8	156
1MD403	488	6.0(1)	156	1MD414	521	6.5(1)	156
2MD403	496	4.8	157	2MD414	507	3.6	159
3MD403	490	3.8	157	3MD414	519	3.5	159
4MD403	498	3.9	158	4MD414	522	5.5	158
1MD404B	493	4.0	154	1MD415	522	4.4	158
2MD404B	498	3.8	157	2MD415	515	4.2	159
3MD404B	492	4.1	156	3MD415	521	4.3	159
4MD404B	501	3.4	158	4MD415	524	4.1	159
1MD405	499	4.0	159	1MD416	518	4.3	159
2MD405	500	4.5	163	2MD416	512	3.8	161
3MD405	491	4.8	160	3MD416	516	4.3	160
4MD405	496	3.8	160	4MD416	518	1.9(1)	160
1MD406	509	7.0(1)	140(1)	1MD417	517	4.7	160
2MD406	519	5.1	150	2MD417	512	4.5	160
3MD406	521	4.1	154	3MD417	517	4.2	161
4MD406	524	3.5	159	4MD417	520	2.4(1)	161
1MD407	495	7.0(1)	155				
2MD407	498	4.1	157	Maximum	530	5.5	163
3MD407	492	4.8	158	Minimum	462	3.0	148
4MD407	493	4.3	159	Count	68	60	66
1MD408	492	6.0(1)	158	K Factor	3.029	3.066	3.038
2MD408	494	5.1	160	St. Dev.	16	0.6	3
3MD408	484	5.1	158	K*St. Dev.	48	1.8	9
4MD408	490	4.4	160	Mean	506	4.2	157
1MD409	462	4.0	148	Up. Tol.	554	6.0	166
2MD409	479	4.8	156	Low. Tol.	458	2.4	148
3MD409	475	4.1	158				
4MD409	480	3.4	159	Mean + 5 St. Dev.	586	7.2	172
1MD410	524	8.3(1)	161	15 mg/L+mean		19.2	
2MD410	519	3.8	155	UCL	586	19.2	172
3MD410	521	4.1	151				
4MD410	521	4.4	153				
1MD411	528	4.7	160				
2MD411	520	4.5	142(1)				
3MD411	525	4.5	163				
4MD411	530	3.1	162				

(1) - Outlier