# Rio Algom Mining LLC

HD-8905

October 22, 2010

Certified Mail
Return Receipt (7009 0960 0000 8422 7310)

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

Re: **Discharge Plan - 71**
**Analytical Results – 3rd Quarter 2010**

Dear Mr. Schoeppner,

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

Also enclosed (NMED copy only) is a CD Copy of the Excel Spreadsheet for the 2nd quarter groundwater monitoring report, Section 4 lined evaporation ponds. This CD Copy meets the requirements of Condition 15B of Discharge Plan DP-71.

If you have any questions or need additional information, please call me at 505-287-8851, ext 15.

Regards,

Chuck Wentz

Chuck Wentz
Environmental Department Supervisor
Radiation Safety Officer

Attachment: As stated

xc: NRC (Mr. Tom McLaughlin)
NRC (document control)
file

1E25
NMSS

# RIO ALGOM MINING LLC
# AMBROSIA LAKE
# FACILITY

## Discharge Permit
## DP-71

## 3rd Quarter 2010

**October 22, 2010**

Discharge Permit DP-71

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Summary of Activities

This report presents the results of the monitoring and sampling requirements associated with discharge permit DP-71 for the period encompassing the 3rd quarter of 2010. DP-71 permit renewal was approved on December 1, 2003 and monitoring requirements were expanded from previous monitoring commitments listed in the permit. This has resulted in acquiring data that was not obtained in past monitoring programs.

Activities associated with the Section 4 lined evaporation ponds consisted of sampling Monitor Wells 22 and 32.

All wells associated with the permit were dry or contained insufficient water for sample collection except for two wells. These wells were MW-22 and MW-32. Laboratory/analytical results for the quarterly sample events were provided by ACZ Laboratories. A table summarizing the data is attached and copies of the laboratory reports are included with this submittal.

Hydrographs and time versus concentration plots for the chemical constituents chloride, sulfate, and TDS are attached for MW-22, MW-26, and MW-32. Since all other wells continue to be dry, Rio Algom wishes to incorporate the hydrographs for the other wells associated with DP-71 that were included within the April 3, 2006 submittal.

Due to the lack of any water in the alluvium in the Section 4 Pond area, development of a potentiometric map for the alluvium was not undertaken. Since mine dewatering from mines northeast of the Section 4 Ponds ceased in 1985, the alluvium in the vicinity of the Section 4 Ponds has drained, which is reflected in the historical water level data obtained from the monitoring wells associated with the Section 4 Ponds.

Analytical Data

DP-71

RIO ALGOM MINING LLC
DISCHARGE PERMIT - DP-71
MONITORING RESULTS - 3rd QUARTER 2010

| Date | Location | Depth to Water (ft) | Total Depth (ft) | WELL STATUS | pH (s.u.) | Temp. ( C) | Spec. Cond. (uS) | Chloride (mg/L) | Sulfate (mg/L) | TDS (mg/L) | Nitrate (mg/L) | Arsenic (mg/L) | Selenium (mg/L) | Uranium (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7/5/2010 | MW-12 | | 13.00 | NS | | | | | | | | | | |
| 7/5/2010 | MW-13 | | 29.27 | NS | | | | | | | | | | |
| 7/5/2010 | MW-22 | 35.68 | 36.89 | | 7.05 | 14.4 | 5550 | 130 | 2900 | 5290 | 21.9 | 0.006 | 0.135 | 0.0309 |
| 7/5/2010 | MW-23 | | 41.73 | NS | | | | | | | | | | |
| 7/5/2010 | MW-24 | | 50.13 | NS | | | | | | | | | | |
| 7/5/2010 | MW-25 | | 29.62 | NS | | | | | | | | | | |
| 7/5/2010 | MW-26 | | 35.25 | NS | | | | | | | | | | |
| 7/5/2010 | MW-27 | | 27.87 | NS | | | | | | | | | | |
| 7/5/2010 | MW-28 | | 32.48 | NS | | | | | | | | | | |
| 7/5/2010 | MW-29 | | 29.29 | NS | | | | | | | | | | |
| 7/5/2010 | MW-30 | | 40.99 | NS | | | | | | | | | | |
| 7/5/2010 | MW-31 | | 50.51 | NS | | | | | | | | | | |
| 7/5/2010 | MW-32 | 68.28 | 71.62 | | 7.03 | 15.8 | 5380 | 120 | 2900 | 5330 | 69.4 | 0.007 | 0.336 | 0.0556 |
| 7/5/2010 | MW-33 | | 59.31 | NS | | | | | | | | | | |

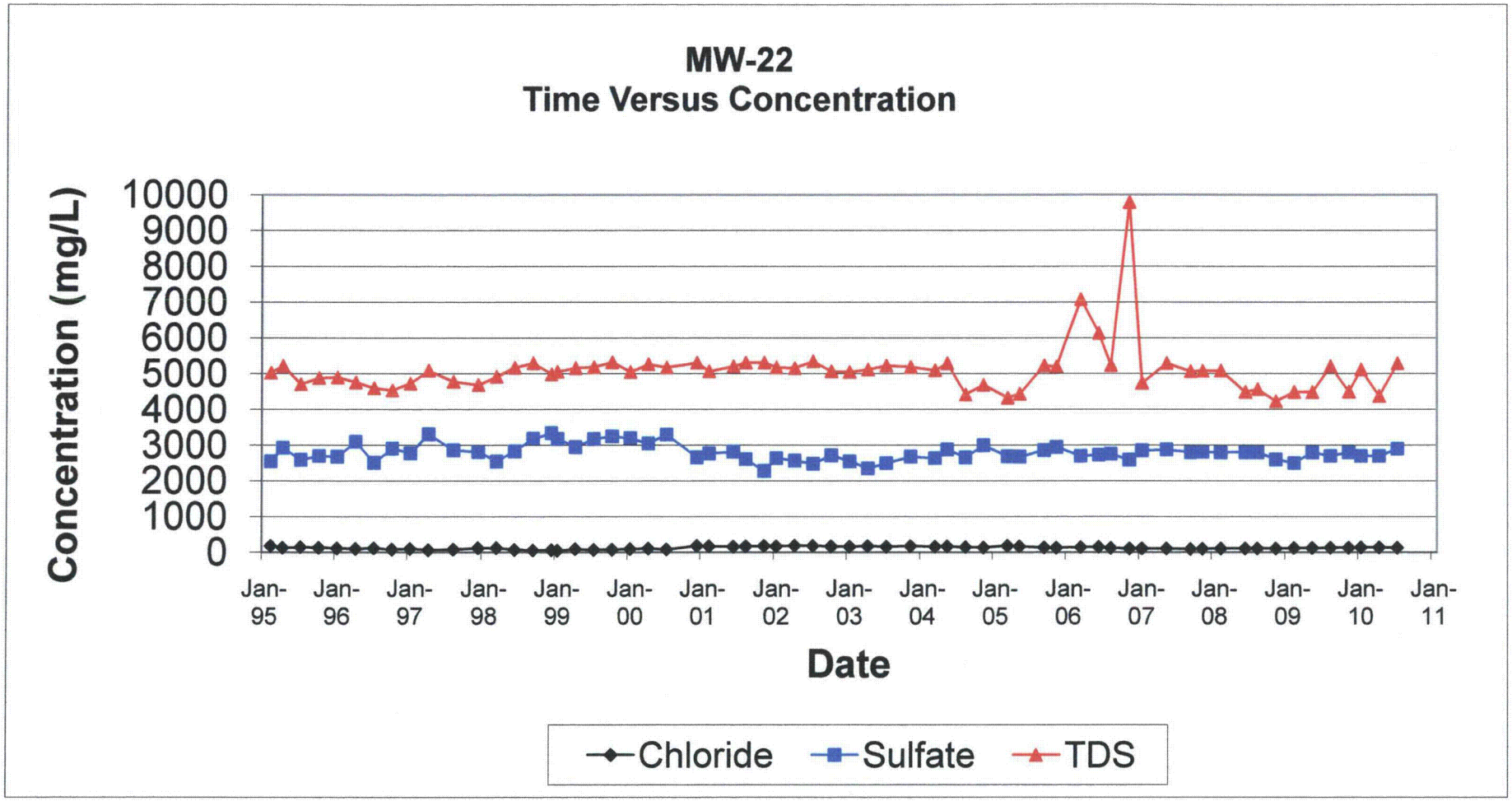
Notes

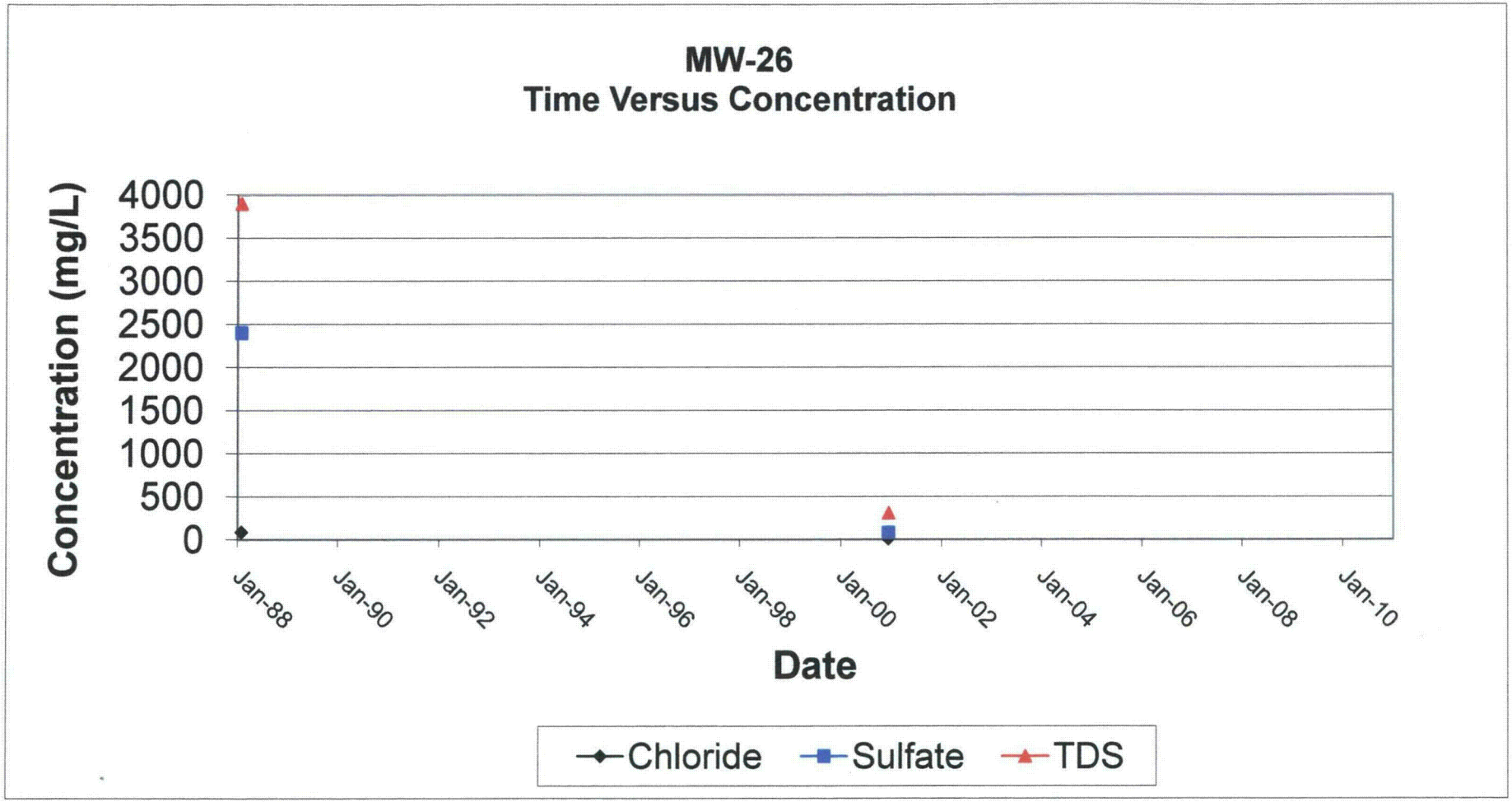
1 - Well status listed as "NS" indicates the well was either dry or contained insufficient water for sample collection.

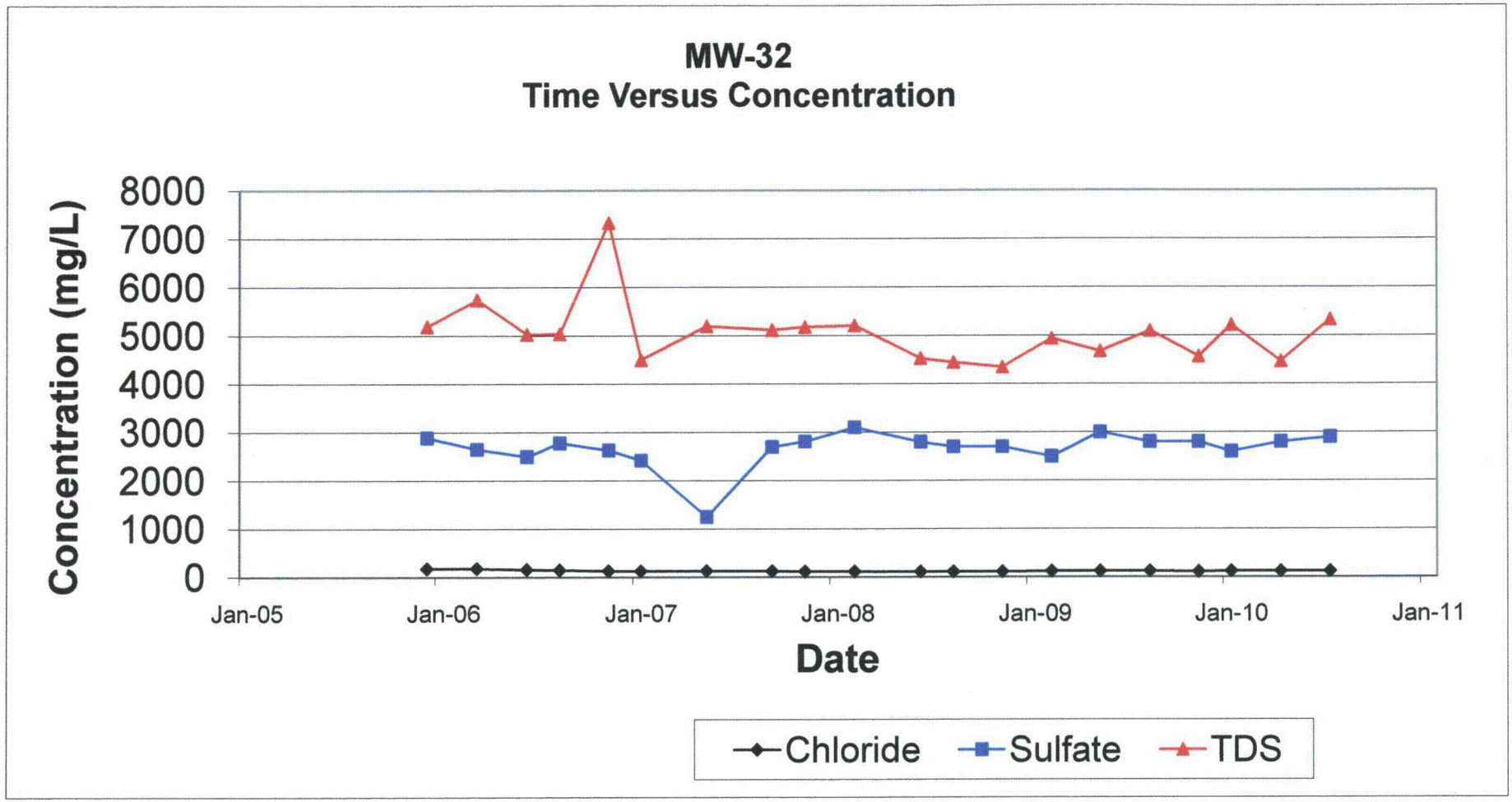
2 - Monitor wells MW-1 through MW-11, MW-14 through MW-21 plugged and abandoned for the lined pond relocation project.

Time versus Concentration Plots

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


MW-22
Time Versus Concentration
Concentration (mg/L)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Date
Chloride
Sulfate
TDS


MW-26
Time Versus Concentration
Concentration (mg/L)
4000
3500
3000
2500
2000
1500
1000
500
0
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Date
Chloride
Sulfate
TDS

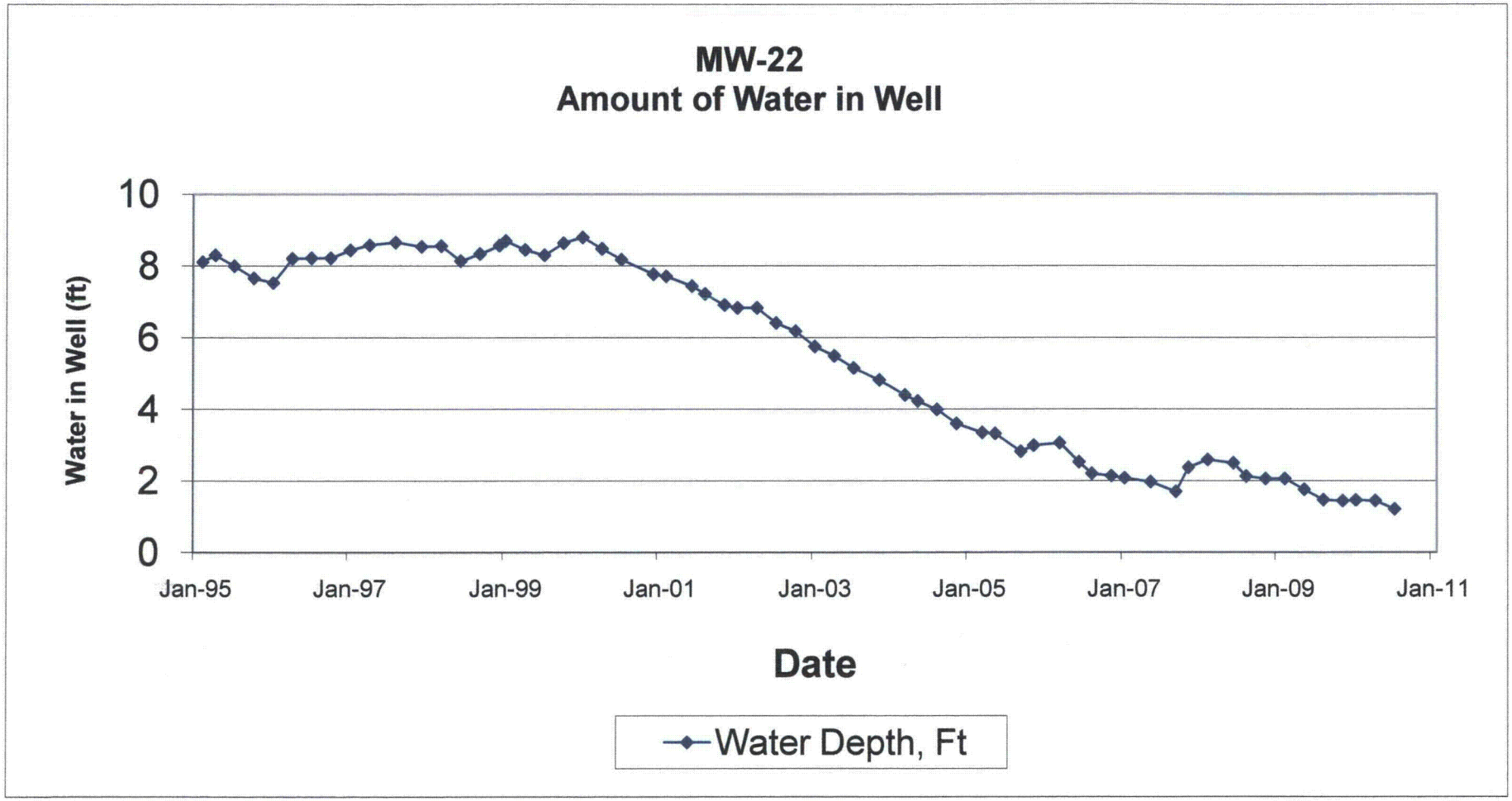

MW-32
Time Versus Concentration
Concentration (mg/L)
8000
7000
6000
5000
4000
3000
2000
1000
0
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Date
Chloride
Sulfate
TDS

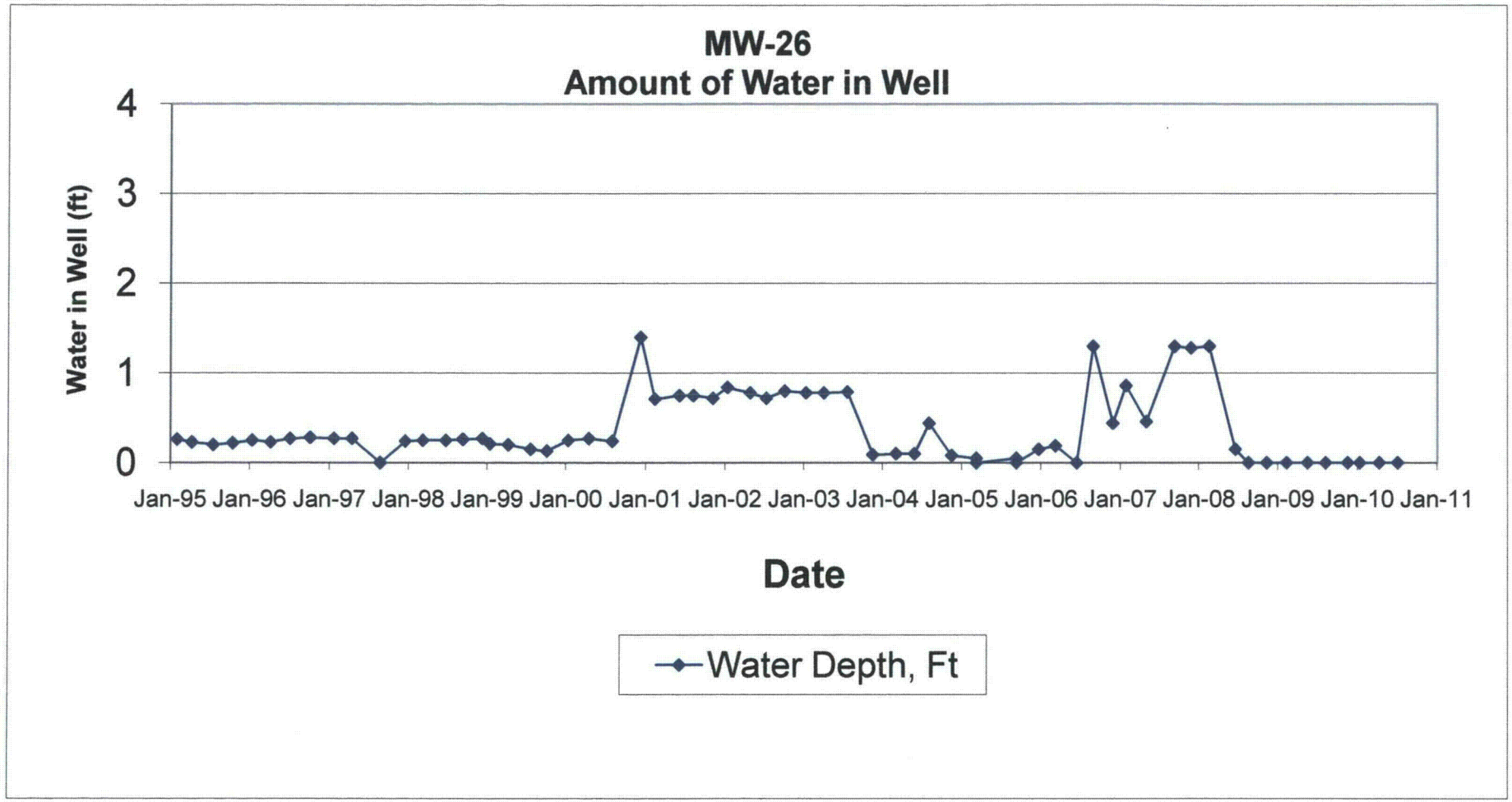
# Hydrographs

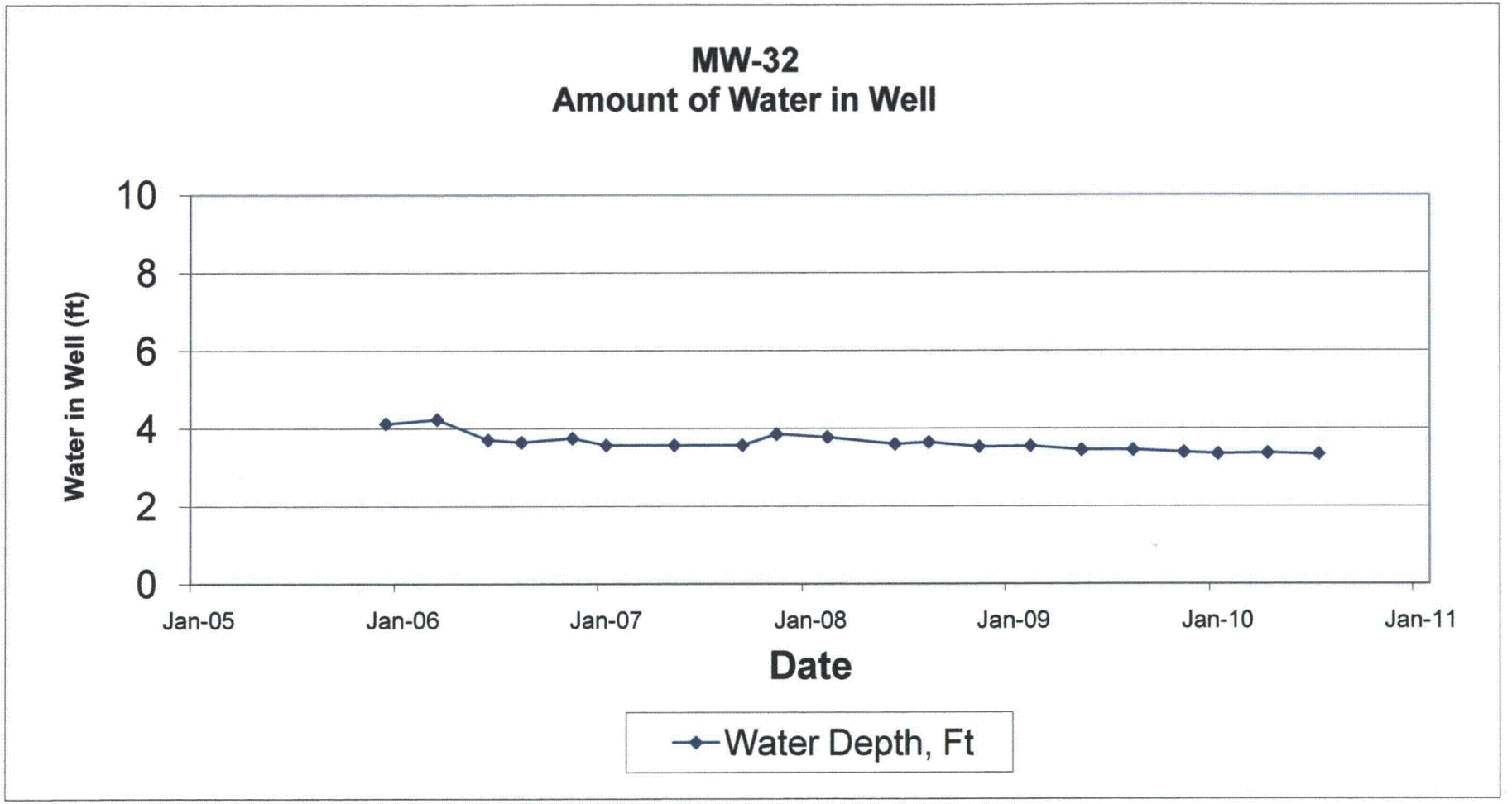
## DP-71 Well Network

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

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


MW-22
Amount of Water in Well
Water in Well (ft)
10
8
6
4
2
0
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Date
Water Depth, Ft


MW-26
Amount of Water in Well
Water in Well (ft)
4
3
2
1
0
Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11
Date
Water Depth, Ft


MW-32
Amount of Water in Well
Water in Well (ft)
10
8
6
4
2
0
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Date
Water Depth, Ft

Laboratory Reports

DP-71

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

**Analytical Report**

July 21, 2010

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

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

Project ID: 58195
ACZ Project ID: L83144

Chuck Wentz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 08, 2010. This project has been assigned to ACZ's project number, L83144. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L83144. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after August 21, 2010. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

ACCREDITED IN ACCORDANCE WITH nelac

ACIL

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

**Inorganic Analytical Results**

**Rio Algom Mining Company**
Project ID: 58195
Sample ID: MW-22

ACZ Sample ID: ***L83144-01***
Date Sampled: *07/05/10 09:07*
Date Received: *07/08/10*
Sample Matrix: *Ground Water*

Metals Analysis

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic, dissolved | M200.8 ICP-MS | 0.006 | B | | mg/L | 0.003 | 0.01 | 07/13/10 8:09 | msh |
| Selenium, dissolved | M200.8 ICP-MS | 0.1350 | | * | mg/L | 0.0005 | 0.001 | 07/13/10 8:09 | msh |
| Uranium, dissolved | M200.8 ICP-MS | 0.0309 | | | mg/L | 0.0005 | 0.003 | 07/13/10 8:09 | msh |

Wet Chemistry

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | SM4500Cl-E | 130 | | * | mg/L | 10 | 50 | 07/16/10 13:25 | aml |
| Nitrate/Nitrite as N | M353.2 - H2SO4 preserved | 21.9 | | * | mg/L | 0.3 | 2 | 07/15/10 22:59 | pjb |
| Residue, Filterable (TDS) @180C | SM2540C | 5290 | | * | mg/L | 10 | 20 | 07/08/10 15:07 | jjc |
| Sulfate | 375.4 - Turbidimetric | 2900 | | * | mg/L | 100 | 500 | 07/16/10 16:13 | aml |



** Please refer to Qualifier Reports for details.*

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

**Inorganic Analytical Results**

**Rio Algom Mining Company**
Project ID: 58195
Sample ID: MW-32

ACZ Sample ID: ***L83144-02***
Date Sampled: *07/05/10 10:20*
Date Received: *07/08/10*
Sample Matrix: *Ground Water*

Metals Analysis

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic, dissolved | M200.8 ICP-MS | 0.007 | B | | mg/L | 0.003 | 0.01 | 07/13/10 8:12 | msh |
| Selenium, dissolved | M200.8 ICP-MS | 0.3360 | | * | mg/L | 0.0005 | 0.001 | 07/13/10 8:12 | msh |
| Uranium, dissolved | M200.8 ICP-MS | 0.0556 | | | mg/L | 0.0005 | 0.003 | 07/13/10 8:12 | msh |

Wet Chemistry

| Parameter | EPA Method | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | SM4500Cl-E | 120 | | * | mg/L | 10 | 50 | 07/16/10 13:25 | aml |
| Nitrate/Nitrite as N | M353.2 - H2SO4 preserved | 69.4 | | * | mg/L | 0.6 | 3 | 07/15/10 23:01 | pjb |
| Residue, Filterable (TDS) @180C | SM2540C | 5330 | | * | mg/L | 10 | 20 | 07/08/10 15:08 | jjc |
| Sulfate | 375.4 - Turbidimetric | 2900 | | * | mg/L | 100 | 500 | 07/16/10 16:13 | aml |



** Please refer to Qualifier Reports for details.*

## Report Header Explanations

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

## QC Sample Types

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

## QC Sample Type Explanations

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

## ACZ Qualifiers (Qual)

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

## Method References


| | |
|---|---|
| (1) | EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983. |
| (2) | EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993. |
| (3) | EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994. |
| (5) | EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996. |
| (6) | Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998). |


## Comments

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

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

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

# Inorganic QC Summary

**Rio Algom Mining Company**
Project ID: 58195

ACZ Project ID: ***L83144***

**Arsenic, dissolved** M200.8 ICP-MS

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG285880** | | | | | | | | | | | | | |
| WG285880ICV | ICV | 07/13/10 6:57 | MS100628-2 | .05 | | .05285 | mg/L | 105.7 | 90 | 110 | | | |
| WG285880ICB | ICB | 07/13/10 7:00 | | | | U | mg/L | | -0.0011 | 0.0011 | | | |
| WG285880LFB | LFB | 07/13/10 7:07 | MS100708-2 | .05005 | | .04773 | mg/L | 95.4 | 85 | 115 | | | |
| L83142-06AS | AS | 07/13/10 8:02 | MS100708-2 | .05005 | .0007 | .05719 | mg/L | 112.9 | 70 | 130 | | | |
| L83142-06ASD | ASD | 07/13/10 8:05 | MS100708-2 | .05005 | .0007 | .05885 | mg/L | 116.2 | 70 | 130 | 2.86 | 20 | |

**Chloride** SM4500Cl-E

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG286183** | | | | | | | | | | | | | |
| WG286183ICB | ICB | 07/16/10 8:31 | | | | U | mg/L | | -3 | 3 | | | |
| WG286183ICV | ICV | 07/16/10 8:31 | WI091019-2 | 54.835 | | 58.6 | mg/L | 106.9 | 90 | 110 | | | |
| WG286183LFB1 | LFB | 07/16/10 13:08 | WI100217-3 | 30 | | 30.7 | mg/L | 102.3 | 90 | 110 | | | |
| L83126-03AS | AS | 07/16/10 13:10 | WI100217-3 | 30 | U | 34.4 | mg/L | 114.7 | 90 | 110 | | | M1 |
| L83126-04DUP | DUP | 07/16/10 13:10 | | | U | U | mg/L | | | | 0 | 20 | RA |
| WG286183LFB2 | LFB | 07/16/10 13:12 | WI100217-3 | 30 | | 31.7 | mg/L | 105.7 | 90 | 110 | | | |

**Nitrate/Nitrite as N** M353.2 - H2SO4 preserved

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG286167** | | | | | | | | | | | | | |
| WG286167ICV | ICV | 07/15/10 22:01 | WI100624-5 | 2.416 | | 2.418 | mg/L | 100.1 | 90 | 110 | | | |
| WG286167ICB | ICB | 07/15/10 22:02 | | | | U | mg/L | | -0.06 | 0.06 | | | |
| WG286167LFB1 | LFB | 07/15/10 22:05 | WI100319-1 | 2 | | 2.115 | mg/L | 105.8 | 90 | 110 | | | |
| L83037-01AS | AS | 07/15/10 22:07 | WI100319-1 | 2 | U | 2.139 | mg/L | 107 | 90 | 110 | | | |
| L83091-01DUP | DUP | 07/15/10 22:10 | | | U | U | mg/L | | | | 0 | 20 | RA |
| WG286167LFB2 | LFB | 07/15/10 22:47 | WI100319-1 | 2 | | 2.096 | mg/L | 104.8 | 90 | 110 | | | |
| L83153-02AS | AS | 07/15/10 22:49 | WI100319-1 | 2 | .58 | 2.708 | mg/L | 106.4 | 90 | 110 | | | |
| L83163-01DUP | DUP | 07/15/10 22:57 | | | 1.87 | 1.875 | mg/L | | | | 0.3 | 20 | |

**Residue, Filterable (TDS) @180C** SM2540C

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG285703** | | | | | | | | | | | | | |
| WG285703PBW | PBW | 07/08/10 14:55 | | | | U | mg/L | | -20 | 20 | | | |
| WG285703LCSW | LCSW | 07/08/10 14:55 | PCN34809 | 260 | | 250 | mg/L | 96.2 | 80 | 120 | | | |
| L83149-03DUP | DUP | 07/08/10 15:09 | | | 4310 | 4340 | mg/L | | | | 0.7 | 20 | |

**Selenium, dissolved** M200.8 ICP-MS

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG285880** | | | | | | | | | | | | | |
| WG285880ICV | ICV | 07/13/10 6:57 | MS100628-2 | .05 | | .05391 | mg/L | 107.8 | 90 | 110 | | | |
| WG285880ICB | ICB | 07/13/10 7:00 | | | | U | mg/L | | -0.00022 | 0.00022 | | | |
| WG285880LFB | LFB | 07/13/10 7:07 | MS100708-2 | .05005 | | .04848 | mg/L | 96.9 | 85 | 115 | | | |
| L83142-06AS | AS | 07/13/10 8:02 | MS100708-2 | .05005 | U | .06323 | mg/L | 126.3 | 70 | 130 | | | |
| L83142-06ASD | ASD | 07/13/10 8:05 | MS100708-2 | .05005 | U | .06688 | mg/L | 133.6 | 70 | 130 | 5.61 | 20 | MA |

**Rio Algom Mining Company**
Project ID: 58195

ACZ Project ID: ***L83144***

**Sulfate** 375.4 - Turbidimetric

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG286232** | | | | | | | | | | | | | |
| WG286232ICB | ICB | 07/16/10 8:31 | | | | U | mg/L | | -3 | 3 | | | |
| WG286232ICV | ICV | 07/16/10 8:31 | WI100714-2 | 20 | | 20.1 | mg/L | 100.5 | 90 | 110 | | | |
| WG286232LFB | LFB | 07/16/10 15:42 | WI100506-1 | 10.04 | | 10.2 | mg/L | 101.6 | 90 | 110 | | | |
| L83122-01DUP | DUP | 07/16/10 16:14 | | | 790 | 760 | mg/L | | | | 3.9 | 20 | |
| L83122-01AS | AS | 07/16/10 16:14 | SO4TURB50 | 10 | 790 | 784 | mg/L | -60 | 90 | 110 | | | M3 |

**Uranium, dissolved** M200.8 ICP-MS

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG285880** | | | | | | | | | | | | | |
| WG285880ICV | ICV | 07/13/10 6:57 | MS100628-2 | .05 | | .05337 | mg/L | 106.7 | 90 | 110 | | | |
| WG285880ICB | ICB | 07/13/10 7:00 | | | | U | mg/L | | -0.00022 | 0.00022 | | | |
| WG285880LFB | LFB | 07/13/10 7:07 | MS100708-2 | .05 | | .04865 | mg/L | 97.3 | 85 | 115 | | | |
| L83142-06AS | AS | 07/13/10 8:02 | MS100708-2 | .05 | .0022 | .05771 | mg/L | 111 | 70 | 130 | | | |
| L83142-06ASD | ASD | 07/13/10 8:05 | MS100708-2 | .05 | .0022 | .05935 | mg/L | 114.3 | 70 | 130 | 2.8 | 20 | |

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

**Inorganic Extended Qualifier Report**

**Rio Algom Mining Company** ACZ Project ID: ***L83144***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L83144-01** | WG285880 | Selenium, dissolved | M200.8 ICP-MS | MA | Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits. |
| | WG286183 | Chloride | SM4500Cl-E | M1 | Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable. |
| | | | SM4500Cl-E | RA | Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |
| | WG286167 | Nitrate/Nitrite as N | M353.2 - H2SO4 preserved | RA | Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |
| | WG285703 | Residue, Filterable (TDS) @180C | SM2540C | ZO | Concentration is based on a final residue greater than 200 mg. |
| | WG286232 | Sulfate | 375.4 - Turbidimetric | M3 | The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable. |
| **L83144-02** | WG285880 | Selenium, dissolved | M200.8 ICP-MS | MA | Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits. |
| | WG286183 | Chloride | SM4500Cl-E | M1 | Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable. |
| | | | SM4500Cl-E | RA | Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |
| | WG286167 | Nitrate/Nitrite as N | M353.2 - H2SO4 preserved | RA | Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |
| | WG285703 | Residue, Filterable (TDS) @180C | SM2540C | ZO | Concentration is based on a final residue greater than 200 mg. |
| | WG286232 | Sulfate | 375.4 - Turbidimetric | M3 | The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable. |

No certification qualifiers associated with this analysis

# ACZ Laboratories, Inc.

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

**Sample Receipt**

**Rio Algom Mining Company**
58195

ACZ Project ID: L83144
Date Received: 07/08/2010 11:20
Received By: gac
Date Printed: 7/9/2010

## Receipt Verification

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

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

N/A

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

N/A

## Shipping Containers

| Cooler Id | | Temp (°C) | Rad (µR/hr) |
|---|---|---|---|
| Na11185 | | 3.3 | 12 |
| | | | |
| | | | |
| | | | |

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

## Notes

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

# Sample Receipt

**Rio Algom Mining Company**
58195

ACZ Project ID: L83144
Date Received: 07/08/2010 11:20
Received By: gac
Date Printed: 7/9/2010

## Sample Container Preservation

| SAMPLE | CLIENT ID | R < 2 | G < 2 | BK < 2 | Y< 2 | YG< 2 | B< 2 | O < 2 | T >12 | N/A | RAD | ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L83144-01 | MW-22 | | Y | | Y | | | | | | | |
| L83144-02 | MW-32 | | Y | | Y | | | | | | | |

## Sample Container Preservation Legend

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

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: gac

**ACZ Laboratories, Inc.** L88144

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

**CHAIN of CUSTODY**

**Report to:**

| | |
|---|---|
| Name: Chuck Wentz | Address: P.O. Box 218 |
| Company: Rio Algom Mining LLC | Grants, N.M. 87020 |
| E-mail: | Telephone: 505-287-8851 |

**Copy of Report to:**

| | |
|---|---|
| Name: | E-mail: |
| Company: | Telephone: |

**Invoice to:**

| | |
|---|---|
| Name: | Address: |
| Company: | |
| E-mail: | Telephone: |

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

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

**PROJECT INFORMATION**

Quote #:

~~Project~~ PO #: 58195

Reporting state for compliance testing:

Sampler's Name: Harold Sims

Are any samples NRC licensable material?

**ANALYSES REQUESTED** *(attach list or use quote number)*

| SAMPLE IDENTIFICATION | DATE:TIME | Matrix | # of Containers | (*) 9071 D |
|---|---|---|---|---|
| MW-22 | 7-05-10: 0907 | GW | 3 | X |
| MW-32 | 7-05-10: 1020 | GW | 3 | X |

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

**REMARKS/ SAMPLE DISCLOSURES**

RAM COC# 10-47

SHIPMENT OF (2)

NOTE: SEE ATTACHED SHEET (#)

Please Return RAM's White/Blue Copy #1

PAGE 1 of 1

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

| RELINQUISHED BY: | DATE:TIME | RECEIVED BY: | DATE:TIME |
|---|---|---|---|
| Harold Sims | 7-06-10: 0800 | | |
| | | KAL | 7-6-10 11:20 |

FRMAD050.03.05.02 White - Return with sample. Yellow - Retain for your records.

# RIO ALGOM MINING LI - PROJECT CODES

| ACL-ALL | ACL-TRB | ACL-TRA | ACL-KD | DP-71-Q | SEC 4 PONDS[see note] | DP-71-S |
|---|---|---|---|---|---|---|
| 50/year | 30/year | 15/year | 35/year | 10/year | 20/year | 10/year |
| Chloride | Chloride | Chloride | Chloride | Chloride | Chloride | Chloride |
| Sulfate | Sulfate | Sulfate | Sulfate | Sulfate | Sulfate | Sulfate |
| TDS | TDS | TDS | TDS | TDS | TDS | TDS |
| Nitrate + Nitrite | Nitrate + Nitrite | Nitrate + Nitrite | Nitrate + Nitrite | Nitrate + Nitrite | Nitrate + Nitrite | Nitrate + Nitrite |
| *Molybdenum* | Cyanide | Cyanide | *Antimony* | *Arsenic* | Arsenic | *Arsenic* |
| *Nickel* | *Molybdenum* | *Molybdenum* | *Arsenic* | *Selenium* | Selenium | *Selenium* |
| *Selenium* | *Nickel* | *Nickel* | *Beryllium* | *Uranium* | Uranium | *Uranium* |
| *Gross Alpha* | *Selenium* | *Selenium* | *Cadmium* | | Carbonate ($CO_3$) | Carbonate ($CO_3$) |
| *Radium-226* | *Gross Alpha* | *Gross Alpha* | *Cyanide* | | Bicarbonate ($HCO_3$) | Bicarbonate ($HCO_3$) |
| *Radium-228* | *Radium-226* | *Radium-226* | *Lead* | | Calcium | *Calcium* |
| *Thorium-230* | *Radium-228* | *Radium-228* | *Molybdenum* | | Potassium | *Potassium* |
| *Lead-210* | *Thorium-230* | *Thorium-230* | *Nickel* | | Magnesium | *Magnesium* |
| *Uranium* | *Lead-210* | *Lead-210* | *Selenium* | | Sodium | *Sodium* |
| | *Uranium* | *Uranium* | *Gross Alpha* | | Lead | *Lead* |
| | | | *Radium-226* | | Nickel | *Nickel* |
| | | | *Radium-228* | | Silver | *Silver* |
| | | | *Thorium-230* | | Iron | *Iron* |
| | | | *Lead-210* | | Molybdenum | *Molybdenum* |
| | | | *Uranium* | | Zinc | *Zinc* |
| | | | | | Manganese | *Manganese* |
| | | | | | Copper | *Copper* |
| | | | | | Cobalt | *Cobalt* |
| | | | | | Chromium | *Chromium* |
| | | | | | Cadmium | *Cadmium* |
| | | | | | Aluminum | *Aluminum* |
| | | | | | Fluoride | *Fluoride* |
| | | | | | Radium-226 | *Radium-226* |
| | | | | | Radium-228 | *Radium-228* |
| | | | | | Total Kjeldal nitrogen | Total Kjeldal nitrogen |

Wednesday, August 08, 2007 versions.

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